A Comparative Study of the Philosophies of John Amos Comenius and Maria Montessori on the Education of Children

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A COMPARATIVE STUDY OF THE PHILOSOPHIES OF JOHN AMOS COMENIUS
AND MARIA MONTESSORI ON THE EDUCATION OF CHILDREN

by

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A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

January
1965
VITA

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ACKNOWLEDGEMENTS

The writer is greatly indebted to many persons for assistance, suggestions, and criticisms in the preparation of this study. The comparative study of the philosophies of John Amos Comenius and Maria Montessori was approved by Dr. John M. Wozniak, Professor of Education and Chairman of the Department of Education at Loyola University. His help and encouragement have been major factors in the completion of this research.

This dissertation was completed under the supervision of the following committee: Dr. John M. Wozniak, Chairman; Dr. Jasper J. Valenti, Associate Professor of Education; Dr. James W. Russell, Associate Professor of Education; Dr. Gerald L. Gutek, Assistant Professor of Education, and Dr. Henry Moughamian, Lecturer in Education.

Appreciation is also expressed to the librarians at Loyola University and at Northwestern University for arranging inter-library loans.
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CHAPTER I

INTRODUCTION

John Amos Comenius, born at the end of the sixteenth century and Maria Montessori, born in the latter half of the nineteenth century, both educational reformers, dedicated to a common cause—the education of children—contributed significantly to the education and welfare of children the world over. The purpose of this research, "A Comparative Study of the Philosophies of John Amos Comenius and Maria Montessori on the Education of Children" is to compare critically the philosophies of these educators in the perspectives of the twentieth century. For endowing the world with his methodology, Comenius rightfully earned the title as a "Founder of Method." Laurie goes so far as to say:

Comenius remains for us the most learned and simple-hearted worker for the education of the people, and the most eminent writer on Method, whom the world has ever seen—in fact, the founder of Method.¹

Maria Montessori was decorated with the medal of the Legion d'Honneur by the French nation for her contribution to scientific pedagogy. William Heard Kilpatrick offers the following words of praise for Dr. Montessori's scientific methodology:

¹S. S. Laurie, John Amos Comenius (Syracuse, New York, 1892), p. iii.
In the general wish to apply scientific conceptions to education, few surpass her. Those who feel the urgent need for a more scientific study of education and for bringing of the scientific spirit into our attitude toward education practice can but applaud the insistence with which Madam Montessori returns again and again to this point of view.2

The writings of John Amos Comenius and Maria Montessori had great impact on the teaching of children everywhere, for their writings were read and translated throughout the civilized world. Nicholas Murray Butler at the end of the nineteenth century had this comment upon Comenius' influence on education:

The place of Comenius in the history of education, therefore is one of commanding importance. He introduces and dominates the whole modern movement in the field of elementary and secondary education. His relation to our present teaching is similar to that held by Copernicus and Newton toward modern science, and Bacon and Descartes toward modern philosophy. Yet, he was not, in a high sense, an original mind. But his spirit was essentially modern and remarkably receptive. He assimilated the ideas that were inspiring the new civilization and applied them to the school.3

Of the influence of Maria Montessori's writings on education, John Dewey not too much later makes the following observation:

But if the educators of this country differ with Montessori as to the existence of innate faculties which can be trained for general application by special exercises designed only for the training and not for accomplishment of results in which training is incidental, they welcome her efforts to secure that degree of freedom in the schoolroom which will enable teachers to become acquainted with the real powers and interests of the child and thus secure the data for a scientific method in education, they appreciate the point that artificial conditions of restraint prevent teachers from getting true knowledge of the material with which they are dealing, so that

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instruction is limited to repetition of traditional processes. They perceive that her insistence upon touch associated with muscular movement as a factor in learning to write and read, is a real contribution to the technique of elementary instruction. She has become a most important factor in the popularizing of the gospel of liberty as indispensable to any true education.

With a wider understanding of the meaning of intellectual and moral freedom, and the accompanying breakdown of the negative and coercive ideas of discipline, the chief obstacle to the use of the teacher's own powers of observation and experimentation will disappear. The scientific interest which requires personal observation, reflection, and experimental activity, will be added to the teacher's sympathetic interest in the welfare of the children. Education that associates learning with doing will replace the passive education of imparting the learning of others. However well the latter is adapted to feudal societies, in which most individuals are expected to submit constantly and docilely to the authority of superiors, an education which proceeds on this basis is inconsistent with a democratic society where initiative and independence are the rule and where every citizen is supposed to take part in the conduct of affairs of common interest. It is significant of the wide-reaching development of the democratic spirit that the voice most influentially identified at the present time with the ideal of liberty in education should sound forth from Italy.4

This study is not only significant because of the large influence that their writings have had in the world of education but also timely because of the great renewed interest in Comenius and Montessori within the past few years.

Butler, in his eloquent style, depicts the revived interest in Comenius at the turn of the century:

Travellers in distant lands describe rivers which are seemingly absorbed by the sandy desert. They disappear and leave little or no trace behind them. After a time, perhaps many miles away, the stream reappears. It gathers force and volume with going, and lends its fertilizing power to the surrounding country. Even when hidden to view, it has not ceased to exist. Though the arid wastes have concealed its course, its effects have been felt beneath the surface; and here and there is a green oasis to mark its silent path.

Human history is rich in analogies to this natural phenomenon, and in Comenius the history of education furnishes its example. In life he was persecuted for his religious convictions and sought after for his educational ideas. In death, he was neglected and forgotten by friends and foes alike. It could be said of him as the Emperor Julian said of the Epicureans, he was so completely stamped out that even his books were scarce. But the great educational revival of our century, and particularly of our generation, has shed the bright light of scholarly investigation into all the dark places, and today at the three hundredth anniversary of his birth the fine old Moravian bishop is being honored wherever teachers gather together and wherever education is the theme. We have found in Comenius the source and the forecasting of much that inspires and directs our new education.5

In the comparison of the educational philosophies of these two educators, relevant primary and secondary sources are studied; and by means of critical examination, the similarities of their educational ideas and the differences, as deduced from these pertinent references, are brought into focus. The attempt is made to assess strengths and weaknesses.

The nature of this historical-philosophical dissertation and the scope of the problem require some limitations. The first involves selecting from innumerable writings of Comenius and Montessori only those which are essential and relevant to this comparative research and cautiously discarding the others. Another limitation is to locate similarities and differences in the philosophies of these great thinkers with no attempt to explain any causal relationship.

Encompassed in this dissertation on the comparison of the philosophical principles of education of John Amos Comenius and Dr. Maria Montessori are the roles of: (1) environment (2) methodology (3) activity, which includes

5Nicholas Murray Butler, p. 5-6.
the training of the senses and discipline (4) socialization and (5) special aspects of education, which include moral and religious training.

Since the primary sources are embodied in the third, fourth and fifth chapters, the second chapter, a review of the related literature, is concerned with only those most prominent secondary sources. The important secondary sources, consisting of books, periodicals and theses, are cited for their relevance and applications to the present study.

An account of their childhoods and the environments in which they lived is given in the third chapter because their lives had more than a slight reflection in their philosophical thinking. Keatinge notes well the essence of Comenius' childhood environment:

It was in this atmosphere of free Biblical inquiry that Comenius was brought up, and the result of early training can be seen in his habit of appealing to the Scriptures on every possible occasion, and of proving his most technical propositions from their pages.6

The biographical background reveals some of the events in their adulthood which moved them to write and to achieve the recognition and fame that is theirs.

Chapter Four deals with the exposition of their philosophical principles in preparation for the comparison that is to follow in the next chapter. The last chapter includes the summation and the conclusions as a result of this research.

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Leibnitz, the German philosopher, writer, and mathematician, who lived at about the same time as Comenius, prophesied that a time would come when Comenius would be recognized as a great educator, for in Latin he foretells:

\[
\text{Tempus erit, quo te, Comeni, turba bonorum}
\]
\[
\text{Factaque spesque tuas, vota quoque ipsa colet.}
\]

The time will come when the tumult of good people will pay respects to you, Comenius, your deeds, your hopes and your prayers. 7

This same tribute could easily be applied to Maria Montessori. However, standing as we do on the shoulders of giants gives us a perspective they could not have had. Hence, within human limitations, the dissertation strives for a balanced comparison.

The writer concludes the writing of this Introduction and now prepares to do what Leibnitz prophesied, to pay her respects to the deeds, the hopes, and the prayers of Comenius, a great man, and to Montessori, a great woman.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

The first half of this chapter on the review of related literature traces the decline of Comenius' influence after his death and the gradual revival of interest in his writings about two centuries later. This survey includes a resume of only those secondary sources consisting of books, articles, and theses that were significant in the writing of this comparative study. Those works pertinent to Maria Montessori are surveyed in the second half of this chapter.

After the death of Comenius, his writings, it would seem, were also consigned to the grave. However, Von Raumer's Geschichte der Padagogik was to awaken educational reformers to this wealth of literature buried for almost two centuries. Karl Von Raumer, a young German student of geology and mineralogy became interested in educational theory to the extent that he finally went to Yverdon to study educational philosophy. Upon his return to Germany as a teacher, he published his four-volume Geschichte der Padagogik beginning in 1843. According to Cubberley, this was the first important history of education to be written. In this significant history, Von Raumer

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drew attention to the Great Didactic of Comenius with his excellent critique, which subsequently aroused interest in this work and others by Comenius and gave impetus to further research.

The School of Infancy, originally written in Bohemian and later translated into Polish, German and Latin, was printed in 1633. It was not until 1858, that this work was made available in English. Daniel Benham published it in London from his own translation of Comenius. To his translation, Benham prefixed an account of the life of Comenius. This biography, Comenius' School of Infancy with a Sketch of His Life was to bring before the English the principles that Comenius had set forth as a guide to mothers of young children. Although it did not have the circulation it deserved, another biography, John Amos Comenius, by S. S. Laurie was well-received. Laurie combined in his scholarly study a biography of Comenius and his works based on the Amsterdam Folio of 1657. Filled with minutiae based upon the autobiography of Comenius and English translations of the important writings of Comenius, this work by Laurie published in 1884, was a catalyst in renewing interest in the Moravian schoolmaster.

Robert Quick, formerly Assistant Master at Harrow, and Lecturer on the history of education at Cambridge made this commentary on the two biographies:

One of the most hopeful signs of the improvement of education is the rapid advance in the last thirty years of the fame of Comenius, and the growth of a large literature about the man and his ideas. Twenty-three years ago, when I first became interested in him, his name was

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3Daniel Benham, Comenius' School of Infancy with a Sketch of His Life, (London, 1858).

4S. S. Laurie, John Amos Comenius (Cambridge, 1884).
hardly known beyond Germany. In English there was indeed an excellent life of him prefixed to a translation of his School of Infancy; but his work, by Daniel Benham—(London, 1858), had not then, and has not now, anything like the circulation it deserves. A much more successful book has been Professor S. S. Laurie's John Amos Comenius (Cambridge University Press), and this is known to most, and should be to all, English students of education. By the German and French, Comenius is now recognised as the man who first treated education in a scientific spirit, and now bequeathed the rudiments of a science to later ages. On this account the great library of pedagogy has been named in his honour the "Comenius Stiftung."  

Robert Quick mentions that the French now recognized Comenius as the man who first treated education in a scientific spirit. Among the French authors at this time (1889), who did research and writing about Comenius was Compayre. W. H. Payne, the translator of Compayre's *Cours de Pedagogie, Theorique et Practique*, says that in recent years the literature of education has been enriched by no contribution superior to Compayre's because of his clearness of statement and fairness in treatment of questions on education. Compayre looked to psychology as the rational basis for teaching. He believed that the best system of teaching utilized the five senses. Therefore, he was enthusiastic about Comenius' *Orbis Pictus* as a means of instruction, when he wrote about the use of pictures as a school of positive instruction:

The picture, then, has gained for itself a place; and since the day of Comenius, who in his *Orbis Pictus* was the first to employ it as a means of instruction, it has become popularized and at the same time perfected. Children love them; there is no doubt at this point.

... At any rate, pictures are the first poesy of childhood, and are to be commended in the first place because they furnish amusement.

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and recreation. But they are also a means of developing the representative imagination, of fixing the attention, and of making study attractive. Finally they are a school of positive instruction, and at the same time a preparation for an education in art.

Comenius was now being recognized for his scientific approach to pedagogy even in France. To obtain the approval of Compayre, was to say that he had regained his place in the field of education.

Perhaps no biography of Comenius is better known than Ossian Lang's, Comenius: His Life and Principles of Education, published in 1892 which endeared Comenius to its readers. Written in a simple narrative style, the life of Comenius is related and his precepts are examined. It was Ossian Lang who extolled Comenius when of him he said, "To Comenius, first of all, we owe it that pedagogy was regarded as a science and teaching as an art."9

Nicholas Murray Butler paid his respects to Comenius at a National Education Association meeting in 1892. Of Comenius he said, "In tracing contemporary movements and ideas back to their sources, a surprisingly large number of them were absorbed from the progressive tendencies of the time and formulated for the school by Comenius."10 Three centuries had elapsed since the birth of Comenius and Butler on this occasion said:

It is difficult to project one's self back into a time when our present environment, --social, political, material, -- was in its infancy and when modern invention had annihilated neither time nor space. It

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7Ibid., p. 144.

8Ossian Lang, Comenius: His Life and Principles of Education (New York, 1892).

9Ibid., p. 3.

10Butler, p. 15.
is still more difficult to give credit to one who at such time saw visions and dreamed dreams that we have since realized to the full. What is commonplace to-day, was genius three hundred years ago.11

Through the efforts of educators of the reputation and high esteem held by Butler, Comenius was slowly but surely earning his rightful place in the history of education.

The fact that Comenius' reputation did decline after his death is reiterated by Keatinge whose biography of Comenius is often quoted and referred to by students of history of education. After Comenius' death, says Keatinge:

His school-books, frequently reprinted, were thumbed for years to come by boys in every corner of Europe; but the theoretic works, The Great Didactic, The Newest Method of Languages, The Mother School, remained unknown and ineffective. For all the result they produced, they might as well have perished in the flames at Lissa.12

True, his schoolbooks were widely used, but only by the good graces of the printers was his name preserved, for Comenius, whom heads of state had sought to improve their schools, had fallen into oblivion after his death. In his work, The Great Didactic of John Amos Comenius,13 a translation of the Didactica Magna into English with an appended biography, Keatinge writes:

The man whom we unhesitatingly affirm to be the broadest-minded, the most far-seeing, the most comprehensive, and withal the most practical of all the writers who have put pen to paper on the subject of education, the man whose theories have been put into practice in every school that is conducted on rational principles, who embodies the materialistic tendencies of our "modern" instructors, while

11 Ibid., p. 6.
13 Ibid.
avoiding the narrowness of their reforming zeal, who lays stress on the spiritual aspect of true education while he realises the necessity of equipping his pupils for the rude struggle with nature and with fellow-men—Comenius, we say, the prince of schoolmasters, produced practically no effect on the school organisation and educational development of the following century.14

An inquiring mind, at this point, would ask why Comenius fell into oblivion. There is much speculation as to the reasons for this decline in the reputation and influence of Comenius after his death. According to Keatinge, Comenius, the bishop of his church, had listened to some prognostications about the future welfare of his church, spun by his friend, Nicholas Drabik. These misty fabrications did not develop; consequently, Comenius lost the faith of his flock and his prestige throughout the literary world as Keatinge points out in these words:

the dictionary-makers, biographers, and historians, who should have been the guardians of his fair fame, either took their impressions from the hostile tractates of his enemies, or, in ignorance of his theoretic works, measured his value as an educationist by their peddling [sic] standard of correct Latinity.15

It was Keatinge who did much to restore the good name of Comenius, as an able educator, through this translation of the Didactica Magna into English in 1896. It has two parts. The first part has two divisions consisting of Comenian biographical data and historical information dealing with Comenius' predecessors, while the second part contains the translation of the Great Didactic. The present version of the Didactica Magna is a close paraphrase

14 Ibid.

15 Ibid., p. 99.
from the original Latin in the Advocates' Library, Edinburgh. The fact that
English-speaking people could read Comenius through the efforts and scholarly
work of Keatinge, helped restore the value of Comenius' writings. The
Comenian revival was moving forward. Robert Quick places this revival about
the middle of the nineteenth century; however, Will S. Monroe pinpoints this
renewal of interest at a much earlier date in his Comenius and the Beginning
of Educational Reform.\textsuperscript{16}

It was the opinion of Mr. Quick that the most hopeful sign of the
improvement of education was the rapid advance in the last thirty
years of the fame of Comenius, and the growth of a large literature
about the man and his ideas. The revival of Comenian ideas really
dates from the beginning of the present century, when Germany
crushed and dismembered, looked to her schools as the surest means
of regaining fallen glory; so that the battle of Jena may be given
as the date of this awakened interest in the reforms of the
Moravian educator. This interest culminated in the foundation of
the great national Comenius pedagogical library (Comenius-Stiftung)
at Leipzig in 1871. It was founded by a band of enthusiastic
disciples of Comenius, of whom Julius Beeger was the foremost; and,
although it numbered but 2642 volumes at the end of the first year,
the interest in the movement has been so great that it now numbers
over 70,000 volumes, and constitutes the largest single collection
of pedagogical books in the world.\textsuperscript{17}

Monroe asks, "What more appropriate memorial to the long and devoted life of
Comenius to the cause of education could be desired, and what stronger
evidence of the permanent influence of his work and worth?"\textsuperscript{18}

The formation of a special research body in 1892, called the Comenius
Society or Comenius Gesellschaft is another memorial to the educator. With

\textsuperscript{16}Will S. Monroe, Comenius and the Beginning of Educational Reform (New
York, 1900).

\textsuperscript{17}Ibid., p. 169.

\textsuperscript{18}Ibid., p. 170.
its headquarters in Germany and numbering among its members most of the
leaders on educational thought, the purposes of the society are: (1) to
spread the teachings of Comenius and others who have influenced educational
reform; (2) to rekindle the spirit of their writings and to further other
literature of benefit to the world; and to (3) prepare the way for reforms in
education similar to those expounded by Comenius. The society inspired
celebrations throughout the continent in honor of the three hundredth
anniversary of Comenius' birth.

In 1892, the society began to publish a review called the Monatshefte
der Comenius-Gesellschaft, a bi-monthly published in Berlin for the purpose
of making available original works of Comenius and his contemporaries. In
addition, the society published an educational journal called the Comenius-
Blatter fur Volkserziehung.

At the turn of the century, Comenius gained more prestige than he had in
any of the earlier centuries judging from the number of biographies and
critical literature about Comenius that appeared after 1900.

Adamson, a philosopher and scholar, presents two important books
significant to this study. At the beginning of the twentieth century Adamson
published his Pioneers of Modern Education, which no researcher in the field
of seventeenth-century education could exclude from his bibliography. In this
scholarly work he compares Comenius and his predecessors, Martin Luther, John

19 Ibid.

20 Ibid., pp. 170-172.

21 John W. Adamson, Pioneers of Modern Education (Cambridge, 1905).
Knox, and Richard Mulcaster in the conception of state school-systems:

Of course it is not asserted that this conception of the State school-system, etc., began ab ovo with Comenius and his contemporaries. The Republic of Plato alone is a sufficient confutation of such a thesis, were there no sign remaining of the world-wide educational activity of the Church. Moreover, while Plato was forgotten, or ignored, and Churchmen often took too restricted a view what was educationally necessary, men contemporary, or almost so, with Comenius, anticipated him not only in the design of a popular organization of schools, but even in some of his projected reforms in both the matter and manner of instruction. Martin Luther, John Knox, and Richard Mulcaster are names which readily occur to the mind. But the educational schemes of Luther and of Knox were not effectively realised in their own-lifetime, and Mulcaster, even to his fellow-countrymen, remained but a voice, and one not always listened to with pleasure.22

Adamson is of the opinion that Comenius had two supreme advantages in fulfillment of some of his educational reforms. First, he reached a much wider audience than did either Knox or Mulcaster; and, that above all, he wrote in days when the educational system was ripe for reform and circumstances had led to making reforms possible. The publication of the Advancement of Learning23 in 1605, and the Novum Organum24 in 1620, Adamson feels, gave a cogency to Comenius’ pleas for reform that had been wanting in the sixteenth century. Adamson in admiration for Comenius says, "The man’s genius and character co-operated with the state of affairs to make him in a very real sense the founder of modern pedagogy."25

22 Ibid., p. VII.
23 Francis Bacon, Advancement of Learning (New York, 1900).
24 Francis Bacon, Novum Organum (New York, 1900).
25 Adamson, p. VII-VIII.
The Great Didactic, Adamson is convinced is in part responsible for quickening this march to educational reform:

In sum, the essential thing in the Great Didactic is its absolutely modern outlook. Its deductive method, its fallacious employment of many of its appeals to authority are excrescences. These and a well-nigh superstitious confidence in the power of method, Comenius shares with Bacon: but the two men also foresaw the general direction which progress in knowledge was destined to take, and each did his best to quicken the march.26

In his second work, A Short History of Education,27 Adamson treats English education and its agencies; that is to say, he sets forth the progress of English educational institutions, taking into account the bearing that domestic and foreign influences had in their development. Adamson convincingly points out the influence of Bacon in Comenius' scientific spirit.28

Professor Ellwood Cubberley of Leland Stanford University, author of The History of Education,29 dealing with the educational practice and progress as a phase of the development and spread of western civilization, is of the opinion that Comenius lived in an unfortunate period of history, one which was given to wars and bloodshed rather than learning. As a consequence, Comenius' works were not fully appreciated. Not until the nineteenth century were the fundamentally sound reforms that he advocated put into practice.30

26Ibid., p. 78.
28Ibid., p. 183.
29Cubberley.
30Ibid., p. 416.
Eby and Arrowood, collaborating in the writing of The Development of Modern Education\(^{31}\) give this plausible explanation for the lack of appreciation for Comenius works until the nineteenth century and twentieth century.

He represented a despised sect, persecuted and possessing no land or country. For a long time this sect resisted all government authority, practised communism, and was strongly opposed to aristocracy. In fact, for many years they declined to admit to their fellowship any of the nobility until they renounced their titles and power. Comenius' program of education was extremely democratic and urged the wiping out of class distinctions. In an age that believed in the divine right of kings and gave them autocratic power, such a school system was an anathema. This is sufficient explanation to account for the consigning of his ideas to the grave.\(^{32}\)

After the turn of the twentieth century there was an upsurge in the appreciation of Comenius. To celebrate the tercentenary visit of Comenius to England in October of 1641, a meeting was held in 1941 in the Senate House of the University of Cambridge, at which were present official representatives of Czechoslovakia, the U.S.S.R., Poland, Yugoslavia, the Netherlands and Sweden. The Royal Society was represented by its president. Also in the assembly were eminent scholars and leaders of education. Because President Masaryk of Czechoslovakia had given Comenius the title, "Teacher of Nations," Eduard Benes called his compilation of the tercentenary addresses and essays the Teacher of Nations.\(^{33}\) Among the eminent and eloquent speakers who paid homage to Comenius were James B. Conant, R. Fitzgibbon Young, Otokar Odlozilik and

\[\text{\textsuperscript{31}}\text{Frederick Eby and Charles Flinn Arrowood, The Development of Modern Education (New York, 1934).}\]

\[\text{\textsuperscript{32}}\text{Ibid., p. 288.}\]

\[\text{\textsuperscript{33}}\text{Eduard Benes, The Teacher of Nations, ed., Joseph Needham, (Cambridge,) 1942).}\]
many others. Comenius had regained his place among the truly great teachers of all nations.

The teacher of nations had been given another title two hundred years earlier by none other than Cotton Mather, who called him in wonder and approval "That Incomparable Moravian," when he wrote:

That brave old man, Johannes Amos Comenius, in fame of whose worth hath been trumpeted as far as more than three languages (whereof everyone is indebted unto his Janua) could carry it, was indeed agreed withall, by our Mr. Winthrop in his travels through the low countries, to come over into New England and illuminate this Colledge (i.e., Harvard) and country in the quality of a President. But the solicitations of the Swedish ambassador, diverting him another way, that incomparable Moravian became not an American.34

 Appropriately, then, when Matthew Spinka wrote a biography of the schoolmaster from Moravia in commemoration of his three hundred and fiftieth birthday he gave it the title, John Amos Comenius: That Incomparable Moravian.35

Truly a tribute this book of which John Amos Comenius would have been proud, and no doubt, pleased, portrays the life of the wandering scholar. Spinka devotes the narrative to Comenius' pedagogical, ecumenical, and pansophic interests rather than restricting it to educational reforms. The entire preserved fragment of Comenius' autobiography is used to lend authenticity to the writing. Of particular interest is the much-debated presidency of Harvard. There is nothing inherently impossible in the offer, says Matthew Spinka because it is wholly natural that those responsible for the welfare of the

34 Cotton Mather, Magnalia Christi Americana (New Haven, 1820), II, iv, 10.

35 Matthew Spinka, John Amos Comenius: That Incomparable Moravian (Chicago, 1943).
American institution, Harvard College, founded only five years previously, should want to raise its prestige by offering its presidency to the foremost educational reformer of the day. The story has some foundation, for the Winthrop mentioned in the article quoted above could have been John Winthrop, Jr.

He, indeed, happened to be in England during the year 1642, and for that matter also traveled in the Netherlands and through northern Germany. We know that he was in intimate contact with the Hartlib group and knew Comenius. Although he could at no time make an official offer of the presidency of Harvard to Comenius, there is no reason against the supposition that he might have been privately instructed to sound him out about the possibility of his emigrating to the New World and as an inducement to offer him—unofficially and quite tentatively—the presidency of Harvard. Since the younger Winthrop even after his return to America continued to correspond with the Hartlib group and Comenius himself, and we find the latter connected in an advisory capacity with the educational scheme of the Colonial New England, the story of Cotton Mather cannot be dismissed as altogether an invention of the author’s fertile imagination.36

John Winthrop Jr., is mentioned as having corresponded with the Hartlib group. Hartlib counted among his friends, writers, educators, and statesmen, such as Theodore Haak, John Durie, John Beale, John Wilkins, John Pell, and John Evelyn. It was in this illustrious society that Comenius found himself in England. Haak was a deacon who suggested the meetings of learned men, which eventually led to the formation of the Royal Society. Pell, was a mathematician who translated half of Paradise Lost into High Dutch. Also in the group were Thomas Farnaby, an educator; John Milton, the poet; and John Evelyn, the writer. Hartlib, a gentleman of leisure had with scholarly interests said, "I have lived these thirty years in England, being familiarly

36 Ibid., p. 86.
acquainted with the best of archbishops, bishops, earls, viscounts, barons, knights, esquires, gentlemen, ministers, professors of both Universities, merchants, and all sorts of learned or in any kind useful men.  37

Turnbull's Hartlib, Dury and Comenius, 38 is based on letters, documents, papers of various kinds belonging to the three gentlemen. The collection is gathered under one cover and offers many new insights into the lives of this triumvirate. For example, this work contains such memorabilia as Comenius' letters to Hartlib, and the critical notes of an unknown writer on the Praeludia of Comenius. Turnbull's compilation is valuable because it offers some insight into Comenius' works as they were recorded in contemporary correspondence. Intensely interesting is the unfolding of Comenius' relationship to Cyprian Kinner with whom he collaborated in the preparation of some of his works particularly the Janua Linguarum and the Linguarum Methodus Novissima. 39

One of the most recent works about Comenius is Vladimir Jelinek's The Analytical Didactic of Comenius 40 taken from the translation of Comenius' Analytical Didactic. The present translation is made from the Latin text of the first edition as edited, with variants and additions from the second edition by Josef Reber and Jan V. Novak, in Veskeré spisy Jana Amosa Komenského

37Keatinge, p. 43.


39Ibid., pp. 402-403.

40Vladimir Jelinek, The Analytical Didactic of Comenius (Chicago, 1953).
published by the Ústřední Spolek Jednot Učitelských na Moravě. Jelinek writes that of the more than two hundred works that Comenius finished, left incomplete, or planned to write, more than one hundred and fifty are now extant, two-thirds of these being in Latin. Even the modern reprints, says Jelinek, of some of these works are difficult to obtain. Didaktika analyticka is the tenth chapter of the Linguarum methodus novissima of Comenius. However, when Frantisek Zoubek translated this chapter he called it The Analytical Didactic of Comenius, published it as a separate work in Prague by the Beseda Ucitelska, in 1874. It is interesting to note that Comenius was his own severe critic, for even though the Linguarum methodus novissima won acclaim among educators of high esteem, Comenius himself thought the praise accorded his work was excessive and that many parts needed to be altered, but he felt that he was too old for such a large undertaking.

The tenth chapter (the Analytical Didactic) he considered sound but too wordy; nor was he satisfied with the title Novissima, for he realized that there would be other attempts to improve methods of teaching languages and that these new methods would certainly be refinements on his work.41

In comparing the Great Didactic with the Analytical Didactic, Jelinek finds that:

The transition from the discursiveness of the Magna to the conciseness of the Analytica involves a far more complex and fundamental change than a superficial attempt to reduce verbiage. The change in style reflects a shift in the author's concept of what constitutes a didactic and what forms the basis of didactic principles. The Analytica is a true didactic, that is a rationale of pedagogic method, whereas the longer Czech Didaktika and its Latin counterpart, the

41 Ibid., p. 33.
Didactic magna are merely guides to methodical practice. Furthermore, the Analytica embodies a grand but perhaps unholy alliance between Comenius' theories of education and his pansophic and irenic dreams.\textsuperscript{42}

To facilitate the comparison, Professor Jelinek furnishes in Appendix I, an outline of the leading principles formulated in the two works.

At its ninth session, held in New Delhi, in November and December of 1956, the United Nations Educational Scientific and Cultural Organization decided to honor Comenius on the third centenary of the publication of his Opera Didactic Magna in Amsterdam in 1657.

It was the desire of the General Conference that UNESCO should be associated in the homage which educators throughout the world are paying to 'one of the first men to propagate the ideas which UNESCO took for its guidance at the time of its establishment.'\textsuperscript{43}

The resolution passed was as follows:

1. Considering that John Amos Comenius was one of the first men to propagate the ideas which UNESCO took for its guidance at the time of its establishment,

2. Considering that, in attributing to education an important role in the improvement of man's lot and the civilizing of human society, he was the originator of universal schooling and adult education,

3. Considering that he was the advocate of the idea of collaboration and peaceful organization among all the peoples of the world,

4. Considering that he was, accordingly, one of the authorities to whom the United Nations referred at the time of its foundation,

5. Considering that 1957 will mark the completion of 300 years since that important event, the beginning of the publication of the complete works of John Amos Comenius, in the Netherlands in 1657,

\textsuperscript{42}\textsuperscript{42}Ibid., pp. 17-18.

6. Requests the Director-General to take measures to commemorate the 300th anniversary of the publication of Comenius' Opera Didactica Omnia at Amsterdam in 1657 and to arrange for the publication of Miscellanies of selections from his works.

The introduction is written by Jean Piaget, Director of the International Bureau of Education. In appraisal of Comenius' philosophy of the educative process, he writes that education is not merely the training of the child at school or in the home:

Mais il y a plus. L'éducation selon Comenius n'est pas seulement une formation de l'enfant à l'école, ou dans la famille: c'est un processus qui intéresse la vie entière de l'homme et ses multiples adaptations sociales. La société dans son ensemble est conçue par Comenius sub specie educationis et les grandes idées de pacification et d'organisation internationale de l'enseignement qui font de lui un précurseur de tant d' institutions et de courants contemporains découlent à nouveau, dans son œuvre, de cette synthèse sui generis entre la nature et l'homme dont nous venons de pressentir qu'elle est au centre de sa speculation et qu'elle explique le mystère d'une philosophie d'éducateur en un siècle où l'éducation restait l'affaire ou de techniques sans théorie ou de remarques générales sans effort pour constituer une science pédagogique ou didactique.

It is the opinion of Piaget that Comenius may undoubtedly be considered one of the precursors of the genetic idea in developmental psychology and the founder of a system of progressive instruction adjusted to the stage of development the pupil has reached. Comenius has been interpreted either as the proponent of the theory of innate faculties or as an empiricist who considers the mind as a receptacle gradually filled with knowledge derived from sensation. This dual interpretation of Comenius is possible because Comenius represents both

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the law of development and the educative process itself. Since this vastly interesting and important treatise is scrutinized in the following chapters for its philosophical doctrines, the writer postpones further judgment and interpretation at this point.

No study of educational reform would be complete without the exhaustive contributions made by writers of histories of educational thought. To turn now to those histories that play an important part in the present study, the following sources should be cited: Luella Cole's *History of Education*; 45 Father William T. Kane's *History of Education*, 46 which considers chiefly the development of education in the western world, and revised by John T. O'Brien of Saint Louis University; Robert Ulich's *Three Thousand Years of Educational Wisdom*; 47 James Mulhern's *A History of Education*; 48 and last and certainly not the least in importance, Frederick Mayer's *A History of Educational Thought*. 49 Still another historian of education, Ellwood Cubberley sums up in essence the review of books related to this study:

It is sad to contemplate how far our western world might have been advanced in its educational organization and scientific progress, by the close of the eighteenth century, had it been in a mood to

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49 Frederick Mayer, *A History of Educational Thought* (Columbus, Ohio, 1960).
receive and utilize the reforms in aims and methods, and to accept the new scientific subject-matter, proposed and worked out by this far-sighted Moravian teacher.\footnote{Cubberley, p. 416.}

**ARTICLES**

In addition to the books cited in the foregoing section, specimen articles in leading American journals were consulted.

H. L. Good in the article "Comenius and the Present,"\footnote{H. L. Good, "Comenius and the Present," *School and Society*, XXXVII (June 3, 1933), 710-711.} perceives that the large problems before educators of all countries are those of universal understanding, of dissemination of scientific knowledge to those who most need to use it, and of the spread of education to backward peoples. Even Comenius envisaged these fundamental social and scientific problems in his time and hoped through his pansophic ideas to bring the solution before the world. Good hopes that educators will perpetuate Comenius' visions of universal understanding and universal brotherhood through their efforts as educators. Good hopefully writes, "The spirit in which he approached this problem, should be the pattern for the world to follow."\footnote{Ibid.}

Looking into the crystal ball of the past, Shouse in "If Comenius Had Come to America,"\footnote{J. B. Shouse, "If Comenius Had Come to America," *Education*, LVIII (February, 1938), 361-368.} describes the changes in education that might have taken place. Shouse leaves no doubt about his feeling that Comenius would have been successful as president of Harvard for the following reasons: (1) he
was well-liked by the English (2) his writings on education would have harmonized with those of Puritan ideas of education (3) he looked upon the study of Latin as a tool for cultural enrichment rather than discipline (4) he believed that education would make men good, and (5) he saw the relationship of childhood's informal education to later school training, its breadth and extent, and its foundational service. Harvard College, believes Shouse, might have proven to be the very climate that Comenius needed to bring his principles into practical operation. Unfortunately, Comenius lived too soon to be fully appreciated, for his thoughts were of the twentieth century rather than the seventeenth.

Kandel gave the address, "John Amos Comenius, Citizen of the World, on the occasion of the Inter-University Celebration of the 350th Anniversary of the birth of Comenius, at Teachers College, Columbia University. He cited many reasons for believing that Comenius should be given this title deservedly. His ideas were pansophic, and he wanted the world to be a peaceful and interesting place to live in the vision of God. Only through education did Comenius feel that this could be accomplished.

It is his community of thought with the present which justified the universities of Great Britain and justifies us in celebrating the anniversary of a man, who, as educator and as an internationalist, belongs to all ages. Comenius was a citizen of the world, but he could believe in a world united by a common ideal and a common purpose without surrendering faith in his own people. He could trust God that the rule of their affairs would again be restored to the Czech people, and at the same time cling to his faith in universal

Comenius was not a Czech—his thoughts and his philosophies were for the entire world. Comenius was more than a nationalist; he was a humanitarian who wished to see educational opportunities for all. "Everyone who is born a human being is born with intent—that he should be a human being, that is a reasonable creature ruling over other creatures and bearing the likeness of his Maker." Nearly two centuries were to pass before this ideal was to be incorporated in the educational policies of nations.

In the April issue of School and Society for 1956, there appeared an article by William Brickman, a professor in the School of Education at New York University, called the "Three Centuries of Comenius' Contributions to Education." In the introductory paragraph, he remarks that if two centuries had to elapse before the educational world gave due recognition to Comenius' pedagogical genius, the last century has paid its respects to "That incomparable Moravian." Professor Brickman considered it no surprise, then, when the General Conference of UNESCO resolved unanimously at New Delhi, India, in its ninth session in 1956, to celebrate the tercentenary of the publication of the collected edition of the didactic works of John Amos Comenius.

This resolution culminated in a work entitled John Amos Comenius Selections with the introduction by Jean Piaget, which was mentioned earlier.

56Ibid., p. 402.
58UNESCO.
In his article, Brickman announces some of the future plans for recognizing Comenius' achievements in various writings to be dedicated to him. It has been Brickman's unhappy experience that many important original sources are still not available in this country. An awakening to this lack of authentic sources is taking place. Editors of journals are beginning to take note of the lack of materials on Comenius in their publications. Professor Brickman underscores this absence of articles on Comenius:

It is unfortunate that pedagogical journals in the United States did not mark this Comenian anniversary. The Education Index for 1957 and for early 1958 does not list a single article on one of the truly greatest educators of all time. Although School and Society did not publish anything about the celebration until January of 1958, it can at least be said that the editor planned an article, but preferred to wait until he had an opportunity of examining the European materials and visiting Prague. All this took time, and the present essay is an attempt to rectify the omission.

Perhaps the recent neglect of Comenius by the American pedagogical profession may be attributed not so much to a policy of willful isolationism as to a lack of alertness with respect to foreign educational developments and writings.59

Related Studies

Florence Huntley Hay's dissertation, "Apparent Reflections of Comenius's

59 Brickman, 194.
Philosophy in Contemporary Education, illustrates how Comenian principles set forth over three hundred years ago are now reflected in contemporary education. She uses fifteen Comenian principles and transposes them into modern education. Hay, however, did observe certain perceptible factors that weakened Comenius' accomplishments:

1. He spread himself too thin—he accepted too much major responsibility and interest in too many fields of thought, namely, church work, teaching, school reform, pansophism, political opinion and writings in all these areas.

2. He deferred to other's wishes too frequently, and in so doing, let his opportunities vanish.

3. His timidity was somewhat of a contrast to his aggressiveness in education.

She also noticed another weakness, that of dissemination of Comenian literature for she feels that as far as the American student is concerned, much of Comenius' writings are still untapped because the bulk of them are still in Czech or German and still unobtainable. She hopes that more translations will be published; that libraries which are now deficient in Comenian materials, will add these to their current book-list orders.

Jerome Kachline Clauser's doctoral dissertation, "Comenian Pedagogy and the Moravian School Curriculum (1740-1850)," presents eight characteristics of Moravian schools between the years 1740-1850, that had their precedents in the writings of Comenius. Clauser also finds some dissimilarities existing


in Moravian education and Comenian principles, as for example, the length of
day, memorization, and the teaching of ornamental subjects. Clauser believes
that the major departure from Comenian theory is the apparent lack of emphasis
that Moravians placed on any one specific method for all types of instruction;
whereas Comenius' didactic writings placed emphasis on only one method.
Clauser reveals that Comenius deplored the teaching of "ornamental" subjects;
yet his Great Didactic devotes an entire chapter to a discussion of the methods
of teaching the arts. Therefore some differences are evident between Comenian
precepts and the Moravian School Curriculum as deduced from the research by
Clauser. Clauser's dissertation and bibliography proved helpful in every
respect.

A dissertation written by Manouchehr Pedram at the University of Kansas
in 1963, "A Critical Comparison of the Educational Theories and Practices of
John Amos Comenius with John Dewey's Concept of Experience," points out that
Comenius, realistic in his belief, could not escape his idea of reality in its
pure naturalistic sense. Comenius expressed confidence in nature as it
related to the education of children; Dewey, on the other hand, felt that
nature progressively changes; hence leaving everything to nature, is like
trusting to the "accidents of circumstance." Pedram explains in contrast that
learning by doing is a mechanical process; an implication of the realistic
view to which Comenius was committed. Dewey's reconstruction of experience,
on the other hand is a revolutionary change, experiencing connections between

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62 Manouchehr Pedram, "A Critical Comparison of the Educational Theories
and Practices of John Amos Comenius with John Dewey's Concept of Experience"
Unpublished Doctoral Dissertation (University of Kansas, Lawrence, Kansas,
1963).
doing and undergoing, as an insightful process. Since Pedram's dissertation is of a comparative nature, the writer observed some of his techniques in the development of comparative research. Pedram's dissertation comes under further consideration in the philosophy of education of Comenius in the fourth chapter.

**REVIEW OF LITERATURE RELATED TO MONTESSORI**

**BOOKS**

Now that the related literature of the secondary sources pertaining to Comenius has been reviewed, those secondary sources pertaining to Maria Montessori will be examined.

Thus it is entirely fitting that the first work in this review of related literature is *The Montessori System Examined* by William Heard Kilpatrick. In his scrutiny of the educational doctrines set forth by Dr. Montessori, William Heard Kilpatrick recognizes that the study of science has had a far-reaching effect upon Montessori's educational theories. Montessori believes that in a child's nature as given at birth, there is contained in some unique sense, all that the child is to become. If this natural endowment is tended carefully and nourished, an unfolding continues as the child grows. Montessori believes that if any educational act be efficacious, it must tend to help toward the complete unfolding. Kilpatrick does not accept this doctrine.

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Such a doctrine of education has borne good fruit; but there is danger in it. It has led in the past to unwise emphasis and wrong practice. In fact, such a theory leads easily, if not inevitably, to Rousseau's opposition to a man's whole institutional life. It further fails to provide adequately for the most useful of modern conceptions, that of intelligent, self-directing adaptation to a novel environment.64

Kilpatrick points out that man must take cognizance of the fact that man's environment changes with each new generation and education must be aware of this change. Therefore, Kilpatrick rejects Maria Montessori's doctrine of development as inadequate and misleading when he states, "The useful elements of this doctrine are covered up in error whenever development is identified with mere unfolding of latency." 65

The Montessorian doctrine of education as development is refuted and then, the doctrine of child liberty is introduced by Kilpatrick, as he continues:

Such a form of predetermined adaptation proves successful in the case of certain insects, as the wasp; for there the environment is relatively fixed. With man, however, each generation finds—and makes—a new situation. If education is to prepare for such a changing environment, its fundamental concept must take essential cognizance of that fact. Still further, this erroneous notion of education gives to the doctrine of child liberty a wrong and misleading foundation.66

Maria Montessori advocates the doctrine of liberty on the grounds that, "We cannot know the consequences of suffocating a spontaneous action at the time when the child is just beginning to be active; perhaps we suffocate life

64 Ibid., p. 9.
65 Ibid., p. 11.
66 Ibid., p. 10.
itself." However, Kilpatrick believes that the aim of the doctrine of liberty is to accord the child complete freedom in order to draw from the observation of his spontaneous manifestations conclusions which shall lead to the establishment of a child-study. 67

At this point, Kilpatrick compares the Montessori kindergarten with the traditional kindergarten, in which the teacher directs the children's activities as a group, whereas in the former, there is little direction—the directress seems to be at one side, while each child is busily engrossed with his own project.

The Montessori child learns self-reliance by free choice in relative isolation from the directress. He learns in an individualistic fashion to respect the rights of others. In the traditional group, the child learns through peer group pressure to respect the rights of others. On the matter of liberty, Kilpatrick asks four questions: (1) Why allow a child to exercise his free choice? (2) How can a teacher get cooperation in a group activity if she allows the children a free choice? (3) How is the teacher to secure the requisite skill and knowledge? (4) How can teachers accomplish conformity to social standards? Kilpatrick believes that only acting and reacting in a group situation can the answers to these questions be found, for it is here that the kindergarten finds its chief raison d'etre.

Kilpatrick does find some advantages in the Montessori kindergarten, namely, the unbroken periods for work rather than the short-period programs, 68

67 Ibid., p. 13.
68 Ibid.
where interest is built up only to be diverted to some other planned activity. There must be less doing for the child and more opportunity for a child to live a simple, healthy, normal life, in the traditional kindergarten. From such considerations, he highly approves Madam Montessori's doctrine of liberty.

In summation, Kilpatrick does not feel that Montessori contributes significantly to educational theory for he says, "They are ill-advised who put Madam Montessori among the significant contributors to educational theory."69 In the doctrine of unfolding, Kilpatrick feels she is neither novel nor correct, though he agrees that her scientific conception of education is valid and stimulating. In the doctrine of liberty, she makes no theoretical contribution although the practice of the doctrine has some good in it.

It may well turn out that the Casa dei Bambini is after all her greatest contribution. The sense-training which to her seems most worth while, we decline to accept except in a very modified degree. The didactic apparatus we reject in like degree. Her preparation for the school arts should prove very helpful in Italy. It is possible that her technique of writing will prove useful everywhere. If so, that is a contribution. With this the list closes. We owe no large point of view to Madam Montessori. Distinguishing contribution from service, she is most a contributor in making the Casa dei Bambini. Her greatest service lies probably in the emphasis on the scientific conception of education, and in the practical utilization of liberty.70

About the time that Kilpatrick wrote his work on the Montessori method, there was much discussion wherever people interested in this new pedagogy

69Ibid., p. 66.

70Ibid., pp. 66-67.
gathered. Americans had heard of the wonderful results in an unusual school called the Casa dei Bambini, operated by an Italian woman physician. Dorothy Canfield Fisher had the good fortune of visiting Montessori and her school in Rome. Upon her return to the United States, she was deluged with questions from people in all walks of life. After writing a series of magazine articles, she decided to write A Montessori Mother, 71 which she explains in the preface is not written by a specialist but by a mother who records her impressions of the system and the school. The book had such a wide readership that it was reprinted seven times between January, 1914 and November, 1926.

Dorothy Fisher describes for her readers the Montessori school, which by its very nature and reason for having been started, keeps the children for a long period of time every day. She describes the deep concentration of the children each in his own isolated project, so that visitors come and go without any awareness on the part of the children.

Montessori's didactic materials, of which every smallest bit of apparatus, every detail of technic, rests solidly on the central idea that no one can be educated by anyone else must be utilized properly not for amusement but for learning.

Any attempt to use the Montessori apparatus or system by anyone who does not fully grasp or is not wholly in sympathy with its bedrock idea, results inevitably in a grotesque, tragic caricature of the method, such a farcical spectacle as we now see the attempt to Christianize people by forcible baptism to have been.72

71Dorothy Canfield Fisher, A Montessori Mother (New York, 1914).

72Ibid., p. 49.
Dorothy Canfield Fisher discerned two main branches of the Montessori system. The first division or the practical one has to do with the theories based on the acute, scientific knowledge of the child's body, his muscles, brain, and nerves, which is understandable to a physician or physiological psychologist. The second division is made up of theories based on the spiritual nature of man, as is disclosed by the study of history, by unbiased direct observation of present-day society, and by that divining fervor of enthusiastic reverence for the element of perfectibility in human nature which has always characterized founders of new religions.

Critics of the Montessori system have assailed it for the lack of appeal to the child's moral nature, and that it tends to make of him an egotist. Fisher points out that this is undue criticism but that conscious moral existence is by far the most difficult achievement and one which develops after careful preparation and utilizes the most mature powers of the individual. Hence the absence of any special morally educative element says, Dorothy Fisher, in the present Casa dei Bambini does not in the least indicate that Dr. Montessori has deliberately omitted it.73

Dorothy Canfield Fisher posed this question, "What is there in the Montessori method which is so different from all other educational methods?" The answer lies in the safety of freedom, which is perhaps the only lasting spiritual conquest—and this is the keynote of her system for the Montessori mother writes:

Once again, for the thousandth time, people needed to be reminded that the reign of the tyrant who imposes laws on human souls from the out-

73Ibid., p. 52.
side (even though that tyrant intends nothing but the best for his subjects and be called "teacher"), produces smothered rebellion, or apathy, or broken submissiveness, but never energetic forward progress.\footnote{74}{Ibid., p. 124.}

In contrast to the style and material of Dorothy Canfield Fisher's narrative portrayal of the Montessori school, is Culverwell's technical analysis of Montessori's principles and practice. Dorothy Canfield Fisher writes to parents; Culverwell writes to educationists. In his theoretical work, \textit{The Montessori Principles and Practice}\footnote{75}{E. P. Culverwell, \textit{The Montessori Principles and Practice} (London, 1914).} Culverwell examines the following doctrines of the Montessori method, namely, (1) physiological education (2) spontaneity (3) liberty (4) character and discipline and (5) the teaching of writing and reading. On the clarification of these principles, Culverwell states:

\begin{quote}
Here, as in all things educational, we must preserve a temperate judgment, for the proof of the pudding is in the eating. And since we cannot eat the pudding before it is cooked, all that discussion can be expected to do for a new experiment is to enable us to judge whether it is worth trying; and if we so decide, to enable us to experiment with a clear knowledge of what we are about to do. To show that the experiment is worth making, nay, that we are bound to make it, and to help in making clear the principles on which it should be made, is the modest object of this little work.\footnote{76}{Ibid., p. 302.}
\end{quote}

The author discusses first at some length the predecessors of Dr. Montessori. Culverwell demonstrates how the work of the Spaniard, Dr. Jacob Rodriguez Pereira, and the two French physicians, Dr. Itard and Dr. Seguin,
influenced Montessori in formulating her methodology, since they were specialists in working with deaf mutes and idiot children. Culverwell feels that it is here that Montessori gained ground in her study of their principles and in their practices with the abnormal.

As a natural sequence, Culverwell discloses the importance of Montessori's physiological principles as she applies them to practice. Still later, Culverwell defines and illustrates spontaneity and the principle of liberty as Montessori uses these terms and their relationship to education.

We keep the word "spontaneous" for those uncertain responses whose character we cannot predict, because they depend on the non-mechanical element in the response, the element which baffles all our attempts to investigate the mode of its operation.77

The principle of liberty, Culverwell interprets thus:

... the so-called principle of liberty is no fetish; it does not depend on any theory of the abstract right of the child, nor on any illogical idea that it is the duty of the teacher not to interfere with the individuality of the pupil, or that Nature is endowed with such infallible wisdom that we are to leave everything to her. What is described as the principle of liberty is found, when examined from the physiological point of view, to be merely this—that as brain matter, or more generally all nervous matter, is organised by action, it should be the object of the educator, be he parent, or guardian, or teacher, so to control the organisation of the pupil's brain matter that it shall be effective as possible. How that object is best attained is no doubt a matter for observation, and, if possible, direct experiment. But since direct experiment in education is so often impossible, while observation of the results of this or that method involves a long delay, we must in the present imperfect state of our knowledge rely greatly on somewhat uncertain inferences from our knowledge of the laws of mental and physical growth, and for this purpose we must ransack all our stores—evolution, psychology, the experience of practical life, all these must be pressed into service. Thus we arrive at the belief that in regard to the development of the

77Ibid., p. 80.
sensory and motor system it is important, in the early stages at least, to let the organism develop itself by means of its responses to an environment which encourages these responses to exhaust themselves in an orderly fashion, rather than one which counteracts them as soon as they are initiated—in which case we should lose control over the paths of their discharge and the resulting organisation of the brain. In regard to mental development, the same rule applies, though here the environment must be selected with even more care if we are to get the best results, because the inward impulses toward mental efficiency are by no means as vigorous as those toward physical well-being.78

Carolyn Sherwin Bailey, a student of child psychology and always deeply interested in the welfare of children visited the Trionfale School, where she had the privilege of observing the Montessori method from its inception and of observing in the Fua Famagosta and Franciscan Convent Schools. In addition, she was able to hear Dr. Montessori lecture on her theories of education. Because Carolyn Sherwin Bailey felt that little information had been given the world about individual children who attended the Montessori schools and about their development through Dr. Montessori's theory of auto-education, she wrote Montessori Children.79

Much misunderstanding of the Montessori system has come about, says Bailey, from the interpretation of the word freedom as meaning lawlessness; this confusion is unfortunate, for the term used should be self-direction. Montessori would grant each child his birthright of freedom: physical, moral and mental. "Free your children," admonishes Montessori, for she philosophizes

Every child is born with an unlimited capacity for good. His impulse is to do the good thing, but we so hedge him about with objects which he must not touch and places he must not explore and inaccuracies of

speech which confuse his understanding, that he rebels. With the force of a giant, the baby uses his will to break our will.

Some of the children who attended the Montessori school and to whom some form of this freedom had previously been denied, were studied by Carolyn Sherwin Bailey. Through her anecdotal recording, the development of twelve children was carefully observed when these children were given an opportunity to be free. Rewarding were the results of applying Montessori's principles with these children. Through her series of descriptions of real child types by means of her personal observations and recordings, Carolyn Sherwin Bailey substantiates Dr. Montessori's contribution to child development and child psychology.

John Dewey in his chapter, "Freedom and Individuality," in the work Schools of Tomorrow cites Maria Montessori's school:

At present, the most talked of schools in which freedom and liberty were necessary for the children's work are the schools of Madame Maria Montessori in Italy and those of her pupils of this country. Madame Montessori believes, with many educators in this country, that liberty is necessary in the classroom if the teacher is to know the needs and capabilities of each pupil, if the child is to receive in school a well-rounded training making for the best development of his mind, character, and physique.

Dewey believes that the difference between the Montessori concept of liberty and other American educational reformers lies not so much in its value but in its employment. Physically the children in the Montessori schools are freer than are children in some of the other American schools in which reforms have taken place; intellectually they are not so free in the Montessori school.

80 Ibid., p. 45.

since they are not free to create. A child is free to choose which apparatus
he will use, but never to bend a material to his own plans, for the teaching
materials in the Montessori schools are limited and must be used in a certain
way. This has distinct disadvantages:

Most American educators think that the training of the pupil to
habits of right thinking and judgment is best accomplished by
means of materials which present to him real problems, and they
think that the measure of reality is found in connection with
the experiences of life out of school. The big thing that
children have to learn is twofold; for their adjustment to the
world in which they find themselves involves relations to people
and to things. Adjustment means not simply the ability to control
their bodies, but an intellectual adjustment as well, an ability
to see the relations between things, to look behind their surface
and perceive their meaning not alone to the individual, but to the
community as well.82

Madame Montessori, on the other hand, says Dewey, believes that the technique
of living can best be learned by the child through situations that are not
typical of social life, but which are planned to exercise the faculties of
discrimination and comparison.83 The difference in opinion resolves itself
into the acceptance of different schools of thought on the nature of
intelligence. Maria Montessori belongs to the older school of psychologists
that believe that a child is born with ready-made faculties which can be
trained and developed by suitable appliances, and then devoted to other uses.
However, continues Dewey, "most educators in this country agree with the newer
psychological theories that skill can not be achieved independently of the

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82 Ibid., p. 158.

83 Ibid., p. 159.
tools used and the object fashioned in the accomplishment of a special end. 84

Exercises which are abstract may give the child skill in performing these activities but may not prepare him to be as successful in handling the real life problems under the social and physical conditions which he may find himself.

Dewey admits, though, that although there is a difference in opinion among educators as to the innate faculties which can be trained for general application by special exercises which are designed only for training and not for the accomplishment of results in which training is incidental, they welcome her efforts to secure that degree of freedom in the schoolroom which will enable teachers to become acquainted with the real powers and interests of the child and thus secure the data for a scientific method in education. They appreciate the force of her point that artificial conditions of restraint prevent teachers from getting true knowledge of the material with which they are dealing, so that instruction is limited to repetition of traditional processes. They perceive that her insistence upon touch associated with muscular movement as a factor in learning to write and to read, is a real contribution to the technique of elementary instruction. She has become a most important factor in the popularizing of the gospel of liberty as indispensable to any true education. 85

More critical than Dewey is William Boyd. In his scholarly study, From Locke to Montessori, Boyd gives an analytical presentation of Montessori's principles, which he examines carefully. First he indicates three main ideas

84 Ibid.
85 Ibid., p. 162.
as the basis of her system. The first is the principle of individuality, the second, freedom and the third, the psychological or sense training. 87 Taken together, these, believes Boyd, to constitute the Montessori point of view.

"That Montessori has enriched the principles which have come to her by inheritance not merely from her educational predecessors but from the spirit of the age is not to be denied." 88 Boyd in comparing Montessori's educational scheme with that of Rousseau from the practical point of view, for example, believes that she has made a contribution to educational thought and practice. However, Boyd differs with Montessori's concept of individuality:

Dr. Montessori's discussion of individuality is vitiated by her failure to realize that human individuality is a social, not a biological fact. No doubt the factor of inheritance enters into it, but the inherited characters peculiar to the individual only get marshalled into an individuality in becoming transformed through education into the attributes of a social being. 89

By freedom, the second principle, is meant the absence of interference with the processes of growth, says Boyd, which is simple to discuss in the abstract. But in the concrete, it means permitting the child to do that which he wishes and that kind of liberty is not possible in any kind of school, Boyd declares:

For practical purposes, therefore, she has to find a position midway between the absolute freedom required by her theory of individuality and the renunciations and restraints which in her view are characteristic of the social relationships; and she does so by tacitly abandoning the non-social kind of freedom and substituting

87 Ibid., p. 183.
88 Ibid., p. 185.
89 Ibid., p. 211.
for it a modified form of social freedom. Her first attempt at the
definition of this latter kind of freedom is made by stipulating that
the child shall be allowed, and even encouraged, to act without the
least restriction, so long as his actions do not interfere with the
like freedom on the part of others.90

Montessori believes in restraining a child engaged in a rough or ill-bred act,
continues Boyd, but by what right has she to impose any limits of any kind on
freedom, if restraint is to crush out innate tendencies? What criterion is to
be used in determining whether those actions be good or bad, asks Boyd.

Of the training of the senses, Boyd questions whether there is merit in
this psychological principle, for he points out that aesthesiometric data show
an inverse correlation with general intelligence and he suspects that
"Montessori's didactic system is a house built on sand."91

The omission of the humanistic subjects is perhaps the most unsatisfactory
features of the Montessori system, and Boyd objects to this lack of aesthetic
and moral facet in a child's development.

The pupils in the Children's Houses do not recite poetry or sing songs
or dance. Stories are never told to them and no opportunity is given
for dramatic action. They colour with brush and crayon, but never
draw or model in clay. They get no religious training. Their whole
time seems to be spent on the beggarly level of the senses. It is
little wonder that some of Montessori's admirers are eager to broaden
out her curriculum by the eclectic device of combining it with the
Froebelian or some other system which recognizes more adequately the
humanity of the pupils.92

Boyd explains the lack of these in the curriculum on the grounds that:

90Ibid., p. 214.
91Ibid., p. 242.
92Ibid., p. 245.
Like every educational method created by one mind with little regard for tradition, Montessori's system reflects the limitations of its author's personality. These limitations, if we may judge from her writings, are very great. Except for a religious zeal which consorts badly with a materialistic conception of the human mind, her thought seems to be closely confined to its medical and scientific concerns.\textsuperscript{93}

The articles collected in \textit{The New Children}\textsuperscript{94} by Sheila Radice appeared in The \textit{Times Educational Supplement} during September, October, November and December, 1919. Sheila Radice, who wrote for \textit{Educational Times Supplement} obtained permission from her editor to interview Dr. Montessori when she arrived in England in September of 1919. Permission granted, Sheila Radice attended Montessori lectures, visited her schools, read Montessorian literature to learn all that she could about the method. She became a loyal supporter of the Montessori system and quite the opposite of Professor Boyd in her appreciation of the methods of Dr. Montessori. She disagrees with Professor Boyd, the author of \textit{From Locke to Montessori} whose work was mentioned previously. Radice takes exception to Boyd's comments when she says that:

\begin{quote}
Nothing can be more ridiculous than the ground on which Dr. Montessori is sometimes criticized: that she has arrived at nothing coherent and nothing new. Prof. Boyd's \textit{From Locke to Montessori}, published in 1914, is as beside the mark as Dr. Davidson's \textit{Rousseau}, published in 1898. For all through his examination of the Montessori method he is floundering in search of the philosophical clue which will unite what seems to him a congeries of disconnected notions, a pseudo-system of scraps.\textsuperscript{95}
\end{quote}

\textsuperscript{93}Ibid., p. 246-247.

\textsuperscript{94}Sheila Radice, \textit{The New Children} (New York, 1920)

\textsuperscript{95}Ibid., p. 93.
As a contrast to Professor Boyd's comments, Sheila Radice quotes the words of Dr. Crichton Miller in an address before the Montessori Society at University College in London when he said that:

he was interested in this movement as a clinical psychologist who was daily and hourly brought in contact with social deficiency, personal unhappiness, suffering of all kinds, most of which could be traced back to morbid emotional development in childhood. The reason why the Montessori method had such a tremendous future before it was that it was the key to the normal, wholesome, and sane emotional development of the child. What the clinical psychologist recognized as a tragedy at one end was foreseen and averted at the other end by this new system of education.96

Radice, in conclusion, regrets that too much of our education is still enfeoffed to the Teuton--Froebel.97

A scholarly work and of practical value is William Stern's *Psychology of Early Childhood* based upon children up to six years of age, supplemented by extracts from unpublished diaries of Clara Stern, his wife. Of the Montessori movement, Stern comments that it is almost in the nature of specialized psychology, partly on account of its special reference to the experimental method of psychology and partly by the very marked limitation of its point of view to development on the purely mental side. The psychological views of Maria Montessori agree in one main point with modern child-study in the conviction with which she emphasizes the principle of the child's free independence, which can be utilized quite otherwise than the usual kindergarten methods of self-education and development. Stern makes this observation on

Montessori's method of teaching:

Maria Montessori offers as her new contribution a splendid method—free from all force or mechanical drill—of training the child's elementary powers; but the psychological error of her teaching is that method in teaching is the all-important point in early childhood. She would be right if the little child's sole destiny was observation, or were he a being struggling for piecemeal knowledge; but he is created other and greater than this.99

Stern believes that psychoanalysis is an important contribution in working with children. But, says Stern, the expert and the unprejudiced observer of the healthy child's psychic life is struck again and again by the numerous misinterpretations, exaggerations and unreliable generalizations of psychoanalysis as applied to children. We are confronted, says Stern, once more by the old defect in child-study in a new form, viz. the wish to see in the child nothing but the adult in miniature, and this error becomes more serious with decrease in the age of children subjected to psychoanalytic interpretation. Stern in 1924, believed that many followers of Freud are now recommending psychoanalysis of children as the general foundation of educational reform.

Montessori and Her Inspirers100 by Robert John Fynne is useful in tracing the history of the Montessori Method and the causal relationships between Maria Montessori and her predecessors, Pereira, Itard and Seguin.

Maria Montessori, in working with the abnormal children, turned to the works of Itard and Seguin. Jacob Rodriguez Pereira, who had an indirect influence upon Maria Montessori, made the physiological discovery of the

99Ibid., p. 32.

100Robert John Fynne, Montessori and Her Inspirers (Dublin, Ireland, 1924).
fundamentality of touch and its educational and developmental possibilities. He seemed almost if to erase the couplet of Lucretius, a belief prevalent since Roman Law:

To instruct the deaf no art could ever reach,  
No care improve them, and no wisdom teach.101

Pereira devoted his life completely to deaf-mutism because he was born on the estate of a Spanish nobleman in whose family this characteristic was hereditary, but more important still he had a sister who was a congenital deaf-mute. However, even though Pereira became world-famous for his wonderful work with the deaf-mutes, he sank into oblivion in 1847 because:

On voit d'ailleurs par les nombreux ecrits du temps ou il est question de l'art de Pereira, que personne ne se montre surpris de sa conduite inventeur et que ce n'était pas là un fait isole et en opposition avec les moeurs.102

Fynne is of the opinion that Dr. Montessori was unaware of the inspiration derived by Seguin from the work of Pereira.103 Seguin, who studied the works of Pereira, gives him credit for the following contributions to education:

1. That the senses, and each one in particular, can be submitted to physiological training by which their primordial capability may be indefinitely intellectualized.
2. That one sense may be substituted for another as a means of comprehension and of intellectual culture.
3. That the physiological exercise of a sense corroborates the action as well as verifies the acquisition of another.
4. That our most abstract ideas are comparisons and generalizations by the mind of what we have perceived through our senses.

101As quoted in Fynne, p. 19.
103Ibid., p. 220.
5. That educating the modes of perception is to prepare pabulum for the mind proper.
6. That sensations are intellectual functions performed through external apparatus as much as reasoning, imagination, etc., through more internal organs. 104

Itard, noted for his work with the savage boy of Aveyron, and Seguin, famous in France for his work with mental defectives, left no mere mark on Dr. Maria Montessori, for she herself says:

Here lies the significance of my pedagogical experiment in the Children's Houses. It represents the results of a series of trials made by men, in the education of young children, with methods already used by defectives. My work has not been made in any way an application, pure and simple, of the methods of Seguin to young children, as anyone who will consult the works of the authors will readily see. But it is none the less true that, underlying these two years of trial, there is a basis of experiment which goes back to the days of the French Revolution, and which represents the earnest work of the lives of Itard and Seguin.

As for me, thirty years after the publication of Seguin's second book, I took up again the ideas, and, I may even say, the work of this great man, with the same freshness of spirit with which he received the inheritance of the work and ideas of his master Itard. For ten years I not only made practical experiments according to their methods, but through reverent meditation absorbed the works of those noble and consecrated men, who have left to humanity most vital proof of their obscure heroism. 105

Another related work that had its origins in the British Isles is A Scottish Montessori School written by a Sister of Notre Dame who is enthusiastic about the system and through her writing hopes to spread the Montessorian educational gospel to other countries.

104 Culverwell, pp. 51-52.
106 Sister of Notre Dame, A Scottish Montessori School (Glasgow, Scotland, 1932).
The Montessorian theory of liberty in education is perhaps the outstanding principle of Montessori's system, writes the Sister, but this does not mean that a child has unbridled license, but has a well-trained mind and will.

The work of the Notre Dame Montessori School, founded in 1919, has been tried and tested and found to be excellent in its preparation for the pupils who have passed on to the Senior Department of the High School, show facility and dexterity in both intellectual and manual pursuits, which the Sister attributes to the sense training begun in the early formative years.

To train children in the paths of well-regulated liberty; to educate them to look upon work as a pleasure rather than a hardship; to train their characters in such wise that they may realise the duty and dignity of self-effort, self-reliance, and personal responsibility, this is the educational ideal which Dr. Montessori has set before us. 107

Education is the full and harmonious development of a child's various activities, so that he may be best able to realize his destiny through the fulfilment of his duties to God, his neighbour and himself," concludes the Sister. 108

Perhaps the biography by E. Mortimer Standing, Maria Montessori: Her Life and Work 109 one of the most referred to at the present time, is made up of many and varied sources from Montessori's own writings, lectures and even conversations with Dr. Montessori. Standing first became acquainted with

107Ibid., xiv.
108Ibid., xiii.
Maria Montessori in 1921 and was in constant touch with her until her death in 1952. His portrayal of her life and her accomplishments is significant to students of educational reform. His philosophical discourse which pertains to the ideas of Maria Montessori is a guide to the student wishing to explore her principles and the philosophy on which they were formed.

Still another work that comes into great use in the ensuing chapter, is that of Nancy McCormick Rambusch, Learning How to Learn. 110 A dynamic advocate of the Montessori Method, Nancy McCormick Rambusch, gives a short biography of the Dotteressa and then explains the Montessori Method and its application. As does E. Mortimer Standing, Nancy McCormick Rambusch, in her contribution, plays an important part in the preparation of this comparative study in the perspective of twentieth century practices in education. All of the aforementioned books relating to Maria Montessori have been useful from many standpoints. In addition there are many articles pertaining to Maria Montessori and her system. Some of the more significant are of background interest.

ARTICLES

Blackfriars carried an article entitled "Note On The Historical Development of the Montessori Movement" by E. M. Standing in which this vital movement is described and evaluated. The author points out that the Montessori system has surmounted criticism and the test of time, and is again gaining momentum because of the biological foundations of the method. Professor Godefroy, Lecturer in Psycho-pathology in the University of Amsterdam, twenty years before made the following prediction for the Montessori movement when he said:

It is not difficult to explain to such that the Montessori Method is founded on the general characteristics of life, proper to all organisms, and that it will last as long as life itself lasts. It is not possible to imagine that such a principle having once been introduced into Pedagogy should ever be abandoned.112

An article by Joe Alex Morris which asked the question, "Can Our Children Learn Faster?"113 was based on the Whitby School in Connecticut where Nancy McCormick Rambusch is headmistress. Founded in 1958 with a total of seventeen pupils, the school at the present time has one hundred and fifty students with a waiting list of one hundred pupils. The Whitby School provides twin keys to

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112 Ibid., 472.

113 Joe Alex Morris, "Can Our Children Learn Faster?" Saturday Evening Post (September 21, 1961) 17-25.
self-mastery and mastery of environment through the exercise of liberty as
The Montessori Methods are used in this Catholic lay institution. The Whitby
School has sixteen teachers, six of whom are Montessori trained. In this
article, Nancy Rambusch describes some of the teaching methods which she
definitely declares make the children learn faster, by means of the didactic
apparatus, and the philosophy that prevails in the school.

Evelyn Beyer, a teacher and director of the nursery school at Sarah
Lawrence College, Bronxville, New York, wrote an article for the National
Education Journal, with the intriguing title, "Montessori in the Space Age?"
in which she contrasts a Montessori class and a modern nursery school class.

First of all, she does accept Montessori's concept of prepared environ­
ment and the second concept that a child derives satisfaction from solving a
problem or mastering a task which has only one correct answer or ending. How­
ever, when it comes to applying theory, Miss Beyer does not believe that
Montessorian theory blends with modern day educational philosophy. For
example, the equipment in a modern kindergarten nourishes imaginative,
creative play and learning; whereas the Montessori didactic equipment is
designed to teach specific concepts of relationships of size, space, volume
and shape. This equipment must be used correctly and only in the way it was
intended. Miss Beyer also likes to see large sheets of drawing paper,
crayons, paints, and clay in her nursery schoolroom, which are not visible in
the Montessori kindergarten; while Miss Beyer likes the idea of a controlled

111 Evelyn Beyer, "Montessori in the Space Age?" National Education
Journal (December, 1963), 35-36.
classroom, she dislikes the monotonous, ritualistic procedures children need to follow in the Montessori school to learn the basic skills. In addition, she believes that there should be more social interaction and dramatic play—to release tensions and to help a child relate to his world—to help him learn to solve his problems and to learn to cope with them in an everyday situation. Montessori has made some contributions especially in working with mental defectives, but Miss Beyer feels that only those Montessori principles which would be applicable to the modern school philosophy and to the child in the space age, should be considered.

RELATED STUDIES

Rose M. Crowley in her Master's thesis, "A Comparative Study of Three Established Methods of Educating Children in the Kindergarten and Primary Grades" compares the Activity Program, which is used in the public schools of New York, the Froebelian Program and the Montessori System. Crowley points out the special feature of each program: the auto-education of the Montessori program, the group activity of the Froebelian kindergarten, and the "learn by doing" philosophy of the Activity Program. After studying the three established methods, she concludes that the Activity Program is the best for the purpose of educating children to meet life's needs; the Montessori system is superior to the Froebelian kindergarten insofar as Montessori gives more individual attention to each child; the Froebelian kindergarten gives

consideration to the child's spiritual life. Since this thesis is a comparative study, some of the techniques Miss Crowley used were perceived.

Pearl Hoyo's "Comparative Study of the Views of Maria Montessori and Susan E. Blow on the Training of Children," examines the methods of both Maria Montessori and Susan Blow. Then Pearl Hoyo compares the two methods in terms of physical, mental, and moral attainment in the training of children equated in terms of success obtained in these three areas. The results of this comparison were appraised for the following factors: (1) results obtained by improved educational practices which include environment, child activity, curriculum, and the welfare of children (2) results obtained from the widespread use of these procedures, and (3) statements about the contributions made by Maria Montessori and Susan Blow to modern education.

The unique success each of these two pioneers in nursery school education had with her particular methodology in the training of children was considered. Pearl Hoyo's research shows that Montessori's more important contribution to modern day education was her scientific attitude toward the teaching of children and the adaptation of the Case History which Maria Montessori had used in her teaching.

Louise Ellison's "A Study of Maria Montessori's Theory of Discipline Through an Examination of Her Principles and Practice and an Experiment With

Chapter III and Chapter IV were more helpful from the standpoint of the writer in that the third chapter dealt with the principles of the Montessori Method and the fourth chapter contained a critical evaluation. Ellison found some defects in Montessori's principles which are as follows:

1. The assumption of a life force capable of spontaneous good development, an assumption which does not justify a highly organized environment, a formal education plan, or teacher intervention for extensive teaching of practical life activities and for moral guidance;
2. The belief that it is necessary for the educator to know the individual before educating him, a belief which is not supported by Montessori's practice;
3. The concept of perfect liberty, which has been found to be neither possible nor desirable as a means of education, and was almost abandoned in Montessori's practice;
4. The imposition of an arbitrary limit and form on freedom, difficult to justify on scientific grounds;
5. The theory of independence, helpful as an educational doctrine, but antithetical to the theories of spontaneous development and perfect liberty;
6. A confused learning theory that led to a practice demanding both extremes of functional and non-functional learning;
7. A narrow and unscientific choice of educational materials, with a scientific test of doubtful validity applied to only a few of these;
8. Confusion regarding the role of the teacher, with theoretical demand for little intervention and a practice of constant intervention;
9. A theory of discipline through work that fails to take into account the effects of other disciplinary influences, such as habit training, moral instruction, and teachers' personalities.

This provocative thesis provided much food for thought and an exhaustive bibliography helpful in the preparation of this dissertation.

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118 Ibid., pp. 312-313.
The review of selected secondary sources pertinent to this study has been completed. In the following chapters the biographies and the philosophies of John Amos Comenius and Maria Montessori as presented in the primary sources are examined and compared.
CHAPTER III

BIOGRAPHICAL BACKGROUND OF JOHN AMOS COMENIUS
AND MARIA MONTESSORI

John Amos Comenius (Jan Amos Komensky) was born on March 28, 1592, one hundred years after the discovery of America. The long-disputed question whether he was born in Nivnitz, Komna or Uhersky-Brod, has been settled in favor of Nivnitz. In the following statement from his famous biography of Comenius, Laurie accepts Nivnitz as the world-renowned educator's birthplace:

Some say Comna or Comnia (near Brünn) whence the surname Comnenius or ComeniUS. The family name was in German Topfer, i.e. Potter. Comnia is in long. about 18 E. from Greenwich, lat. 49°. Gindely simply says in the vicinity of Ungarisch-Brod. At the University of Heidelberg he was entered as a native of Nivnitz, a little village about a league from Ungarisch-Brod.¹

John Amos was the youngest of five children and he was the only son. His father, a miller, was not prosperous and the family worked hard for a living. This deeply religious family belonged to the religious group known as the Unity of Czech Brethren. Matthew Spinka in his work, John Amos Comenius, That Incomparable Moravian, comments that this religious environment in which Comenius was reared did much to influence Comenius to follow a life of service to mankind.²

²Matthew Spinka, John Amos Comenius, That Incomparable Moravian (Chicago, 1943), p. 11.
childhood. Kozik, in his beautifully narrated biography, when speaking of the environment explains that this was a community distinguished for its discipline, sobriety and high moral standards. Receiving his education as a young boy in Uhersky-Brod, a town on the Moravian-Slovak border, Comenius was indoctrinated early in the spirit of brotherly love. Life went along normally for the boy until the age of twelve, when he became an orphan. Subsequently, he went to live with an aunt in Straznice. Since his father left a small inheritance, Comenius received just a meager education in the village school. Life was not a happy one for John Amos, for in addition to the loss of his parents, school days were long and tedious. The lessons were uninteresting and the teachers were authoritarian. Comenius later in life spoke of these schools as "the terror of boys, the slaughterhouse of the mind." But still another thing made him unhappy and apprehensive--the slaughtering of men, kidnapping of the women and the burning and pillaging of homes by brigands who were raiding the country.

When John Amos reached the age of sixteen, he seemed to show exceptional aptitude for learning; therefore the town aristocrats decided that John should be sent to Prerov to the Latin school located there. Because John proved to be a good student, the Rector of the school gave the boy his middle name, Amos (loving of knowledge) in recognition of his quick mind and tireless efforts to learn. Because John was older than the others at the school, he was

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5Ibid., p. 6.
ever conscious of the poor philosophy and the poor methods of instruction in
the school. This precocious young student was formulating his own ideas and
philosophy of education—his didactics were in the embryo stage.

After two years at Prerov, he entered the College of Herborn to study
theology. A young man by the name of John Henry Alsted, four years older than
Comenius, was one of his professors. Comenius listened and learned from this
young teacher, who was to influence his thinking and impart a taste for
encyclopedic learning. Laurie describes this association:

...pursuing his theological studies under Professor Alsted, afterwards, Professor of Theology and Philosophy at Weissenburg, and to
whom he was considerably indebted in the formation of his own educa-
tional views.6

Not only was Comenius influenced in his thinking by the brilliant young
professor of theology but also by Ratich (1571-1635), who had very definite
ideas about reforms in education. John Amos Comenius read with avid interest
the reforms suggested in the work entitled, Wolphgangi Ratichii de Studiorum
rectificanda methodo Consilium,7 for in this text Ratich makes some profound
recommendations for improvement of learning.

Frederick Mayer believes that Ratich's writings and the Ratichian reforms
that he advocated markedly influenced Comenius, for he states:

Most directly he was influenced by Ratich (1571-1635) who believed in
the use of the vernacular and disliked compulsion in education.
Ratich, who favored a system of experimental learning, was opposed

6Ibid., p. 55.
7Ibid., p. 56.
to the empty memorization which prevailed in his time. Ratich stressed the importance of student interest, and that without correct methodology no real progress could be achieved in education.8

Leaving Herborn, Comenius spent some time in travel on the continent, residing for a short time in Amsterdam and also studying at the University of Heidelberg. When he reached the age of twenty-two in the year 1614, he decided to return home to help his own people, in his own way. Upon arrival to his own country, he was prepared as a theologian and an educator. He was too young to be ordained; however, he was asked to accept a teaching position and he accepted because he was eager to try his new ideas in education. Fortunately, he was soon appointed Rector of the Moravian school at Prerov, and this appointment gave him the opportunity to improve the educational level of his people. He set about the task at once to improve the textbooks and to introduce improved methods of teaching with a more humane approach. He started out by simplifying the Latin Grammar and writing a text on the elementary level which was published in Prague in 1616 under the title, Grammaticae facilioris praescepta. In addition, Comenius began to collect material for his Czech-Latin dictionary, the Treasure of the Czech Language. At this period of his life, he began to write feverishly. He wrote poetry, composed hymns and began to gather material for his life-long dream—to concentrate all the knowledge of the world into a compilation of works to be known as the "Theatrum universitatis rerum" or "Theatre of the World."

8Frederick Mayer, A History of Educational Thought (Columbus, Ohio: Charles E. Merrill, 1960), p. 214.
At Prerov, Comenius was happy with the work he was undertaking. Here he was free to try his new ideas and innovations in pedagogy. Instead of a birch, he carried a smile. He was determined to make learning meaningful and interesting. Children, born with a natural curiosity, should look upon learning as an adventure. Discipline should also be natural and should come from within.

The didactics which were in embryonic form were now beginning to take shape. Comenius was eager to try his methods. Cole expresses this enthusiasm when she writes, "After his own torturing experiences of trying to learn Latin by a purely grammatical approach, to translate authors without adequate dictionaries, and to memorize hundreds of rules without first understanding them he wanted nothing so much as to devise easier and better means for teaching children." 9

Ordained at the age of twenty-four in the year 1616, Comenius was to have the dual role of pastor of the local congregation of Czech Brethren and the role of rector of a school at Fulnek. Still another role presented itself. Comenius brought his bride Magdalena to Fulnek and became head of the family and later, father of two children. They shared a happy home life together. This happiness was destined to end in sadness after three years, for in November, 1620, the Battle of White Mountain took place near Prague, Czechoslovakia. The Czech Protestants under Frederick the Winter King were routed by the imperial army. This was the first major engagement of the

Thirty Years War. The following year, a regiment of Spanish mercenaries swept down upon Fulnek and plundered and burned the entire town. Comenius' manuscripts and books were destroyed. This indeed was a turning point in the life of the young pastor and schoolmaster. Cole describes this sad yet important phase in the life of Comenius when she says:

This year was a memorable one because it marked the beginning of the long, exhausting, dreary Thirty Years' War. For the first three years the struggle did not touch Comenius, but in 1621 Spanish troops burned and plundered the town where he had been living. He lost his library and his manuscripts; in fact, he escaped with only the clothes he had on. For seven years he remained on the estates and under the protection of one or another sympathetic nobleman, but eventually the harboring of Moravians became too dangerous, and most of them left the country. During this persecution and hiding, Comenius tutored the children of his protectors, did a little educational writing, tried to comfort his fellow Moravians, and found relief for his own perplexities and uncertainties by an enthusiastic belief in the prophecies made by a pair of visionaries. In his simplicity and honesty he suspected no guile, and— in this particular instance— he was the more ready to believe because the prophets foretold a reunion of the scattered Moravians. One can hardly blame a hounded refugee for believing anything that brings solace to his suffering spirit.11

His wife and children were victims of the plague that was inevitable after the hardships and disease that followed the pillaging by foreign troops. Still unaware that his wife was dead, he wrote a meditation and dedicated it to her while on the estate of Karl Von Zerotin where he found asylum. In addition, he wrote The Labyrinth of the World and dedicated it to Zerotin. He became prolific in his writings. He also wrote Paradise of the Heart at this time. His mind and pen were never still. He read books relating to


11 Cole, p. 331.
teaching and he wrote many religious works almost as if to blot out the past. His writings were mostly of a religious theme while in asylum, but this is understandable since he was deeply religious and he was in a state of despair, for the war clouds were thick and black over his native land.

Witnessing brutality and savagery in the outbursts of fighting and killing, Comenius cries out, "Do you think my heart is of iron?" How fitting that Comenius wrote The Labyrinth of the World at this time. In its eloquence he holds a mirror to the world so that man can see the evil abounding - fighting, killing, bloodshed and horror. Written under the most trying circumstances, The Labyrinth of the World, an allegory, has remained a classic, translated into many languages because of its poetry and depth of feeling, exposing the chaos of the world at this time. For three years Comenius found asylum on the estate of Karl von Zerotin but now a change was imminent. Monroe writes that Karl von Zerotin could no longer conceal his friend. Monroe describes this transition vividly when he writes:

The persecution of the enemies rendered concealment no longer possible; and, although Karl von Zerotin was held in high regard by Ferdinand II, in 1624 the imperial mandate was issued which banished the evangelical clergy from the country. For a time Comenius and several of his brethren secreted themselves from their merciless pursuers on the Bohemian mountains, in the citadel of Baron Sadowsky, near Slaupna. But the edict of 1627 put an end to further protection of the Moravian clergy and the nobles; and in January, 1628, Comenius and many of his compatriots, including his late protector, Baron Sadowsky, set out for Poland. On the mountain frontier which separates Moravia from Silesia, the band of exiles knelt and Comenius offered up an impassioned prayer for his beloved

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\citep{John Amos Comenius, The Labyrinth of the World, Translated by Matthew Spinka (Chicago, 1942), p. 46.}
Moravia and Bohemia. This was his last sad look on his devoted country. He never afterward beheld the land of his fathers, but for more than half a century he lived an exile in foreign regions. Well might he, in his old age, exclaim: "My whole life was merely the visit of a guest; I had no fatherland." 13

Scooping up a handful of earth of his native land from which he came, John Amos Comenius crossed over into Poland never again to return to his homeland. Comenius had remarried while on the estate of Count von Zerotin, and his wife Dorothy accompanied the refugee into Leszno. The lord of the town, Count Rafael Leszcynski admitted refugees known for their high moral character and skill in the trades.

Comenius began to write in Czech a book on didactics that would provide the Czech people with sound educational principles to be applied when again he would return. Still another manuscript took his attention Linguarum Reserata, a book intended to improve the study of Latin. The Gate to Languages brought Comenius fame and congratulatory messages from scholars all over the world. In the first place, it was economical and since it contained but 8,000 words it was practical as a small encyclopedia and it was based on the development of knowledge. Its revision, later known as the Vestibulum contained only 1,000 words.

A firm believer in pre-school education for the young child, Comenius published a manual for parents in 1633, called Informatorium for the Mother-school or better known today as The School of Infancy. His writings met with such continued success that Comenius began to envision his encyclopedia of all

the world's knowledge. Of this Cole says:

His most grandiose idea was to publish a series of books that should contain all the knowledge in the world. The idea of an encyclopedia was, of course, not new. Comenius, however, wanted to feature the modern scientific discoveries that had taken place during the previous century, he wanted various specialists to write the parts dealing with their particular fields, and he wished the series to be used as the basic text in a special university, which he would later found. The plan was spectacular, and Comenius fell completely in love with it. If he had had his own way, he would have abandoned his other educational writings entirely and devoted himself to the assembling and co-ordinating of "universal knowledge."14

Comenius' writings were widely discussed in all of the countries and his educational reforms met with such approval in Western Europe that he was sought by foreign countries to come as a consultant. Sweden invited him to reform the educational system and methods in the kingdom at a handsome stipend, but Comenius did not accept because he felt that more good could be accomplished through his educational writings. England was also aware of Comenius' writings and Hartlib had already published the manuscripts under the title "Pansophiae Prodromus" which aroused the interest of the English scholars and educators. Hartlib, who was well-known in literary circles in England, and in social circles as well, was prominent in every endeavor promising social, intellectual and cultural improvement in England. Turnbull, in his biography of Hartlib says, "The advancement of learning was an object that was very dear to Hartlib, and his schemes to encourage it cover the whole of his long life in England."15

14 Cole, p. 332.
Therefore, Hartlib was influential in persuading the English Parliament to invite Comenius to England. Comenius accepted the challenge. In his own words:

After my Pansophia had been published and dispersed through the various countries of Europe, many learned men approved of the object and plan of the work, but despaired of its ever being accomplished by one man alone, and therefore advised that a college of learned men should be instituted to carry it into effect. Mr. Samuel Hartlib, who had forwarded its publication in England, labored earnestly in this matter, and endeavored by every possible means to bring together for this purpose a number of intellectual men. And at length, having found one or two, he invited me with many strong entreaties. As my friends consented to my departure, I proceeded to London, and arrived there on the autumnal equinox (September the 22nd) in the year 1641, and then learned that I had been called thither by an order of the Parliament. But, in consequence of the king having gone to Scotland, the Parliament had been dismissed for three months, and, consequently, I had to winter in London.16

Comenius had assumed that Hartlib had issued a personal invitation that he come to England. Upon his arrival, he was flattered and pleased to know that the English Parliament had requested his presence. While waiting for Parliament to convene, his visitors included a veritable "Who's Who." Those seeking his company were John Milton, Theodor Haak, John Dury, and John Winthrop. However, Comenius was doomed to disappointment, for when Parliament convened, there was no time to interview the educational reformer. An uprising in Ireland took its attention now. Eventually, Comenius decided to leave for Sweden where Lewis de Geer, a rich merchant, had offered him a position reforming the education of Sweden. Again Comenius was to meet disappointment for instead of expanding his pansophic work, he was asked to

16 As quoted by Monroe, p. 52.
write textbooks, better methods for teaching and a schematic plan for grading
of the schools. Keatinge writes:

We have a man little past the prime of life, his brain teeming with
magnificent, if somewhat visionary, plans for social reform, a
mighty power in the community that shared his religious ideas, and
an object of interest even to those who may have shrugged their
shoulders at his occasional want of balance. Suddenly he flings
his projects to the winds, consigns his darling plans to the
dustheap of unreliable ideas, and retires to a small seaside town—not to meditate, not to give definite form to latent conceptions or
to evolve new ones, not to make preparation for the dazzling of
intellectual Europe with an octavo of fantastic philanthropy or of
philosophic mysticism, but to write school-books for the little in
Swedish schools.17

How thorough and how deep must have been his disappointment, for Comenius
believed that through pansophic learning the world could be transformed—by
education man could reshape and save the world. Jelinek in his preliminary
remarks in The Analytical Didactic of Comenius writes:

Comenius placed little faith in the ultimate value of contemporary
scientific studies because he regarded them an unrelated and
therefore incapable of ascertaining anything but fragments of truth.
Since he considered incomplete and disconnected knowledge a source
of confusion instead of certainty, he argued for the establishment
of one science, all-science or pansophy, which would provide a
dependable survey of all the knowledge derived from the three "book"
of God. Knowledge based on such universal truths would lead to
certitude and would command general acceptance; like mathematical
demonstration, it would convince everyone with the force of self-
evident truth. When we have achieved that kind of knowledge, we
should be able to resolve all controversies by the harmonious
evidence derived from an unvarying truth; such evidence leaves no
room for doubt or contradiction. Once controversies are resolved
by this irrefutable method, the results of controversies will be
abolished, particularly the cruelest of these results—war. Then

17M. W. Keatinge, The Great Didactic of John Amos Comenius (London:
universal peace will rule throughout the world. Thus the pansophic ideal and the irenic hope coalesced in the dream of Comenius, and his chiliastic belief nourished the dream.18

De Geer's offer, supported by the powerful Swedish Chancellor, Oxenstierna gave employment to the exile, Comenius, who was convinced that by helping Sweden in her educational endeavor, Sweden would reciprocate militarily in helping the Czechs win their independence. The work that received its origin from this plan was the Methodus. While completing the Methodus, Comenius resided in Elbing in West Prussia. Progress on the Swedish textbooks was slow and the de Geer became impatient. Comenius had been diverted in the writing of the elementary and secondary texts by other interests, mainly his frequent trips to attend ecclesiastical meetings and his pansophic writing. The patron de Geer, now began to make frequent inquiry about how the work was progressing. In a reply to a complaint from de Geer, Comenius wrote him on September, 1643: "I compose books and do not merely copy those of others. Our proposed work is not merely a book, but a real treasure for the aiding of whose production my patron will assuredly have no cause for regret."19

After four years of working on the Swedish project, Comenius went to Sweden to present personally the works he had completed. The government committee was satisfied and he was urged to publish the books. In the meantime, Justinus, the senior bishop of the Moravian Brethren died and Comenius


19 As quoted by Monroe, p. 60.
was named his successor and this necessitated his moving to Leszno. Again Comenius was to face disappointment. In 1648, the Treaty of Westphalia shattered his hopes for his exiled people. There was no provision for the freedom of worship for the people of his church in Germany, Bohemia or Moravia. Comenius pleads with the Swedish Chancellor, Oxenstierna:

My people have aided your arms with their weapons, the unceasing offerings of their tears and supplications to God; and now, when they see your success and may rejoice in the hope for a more favorable issue of affairs, they are troubled with dread apprehension lest they should be forsaken.20

When equal privileges were granted to the Reformed, Lutheran, and Catholic churches in Germany, Bohemia and Moravia to the exclusion of the Moravian Brethren, Comenius replies:

Of what use is it to us, who are now deprived of every hope of peace, to have assisted you with our tears in obtaining victory; when, although it lay within your power to release us from our prison-house, and you surrender us anew into the hands of our oppressors? Of what avail now all those holy evangelical alliances formed by our ancestors, and consecrated with their sacred martyr-blood?21

From 1648 until 1650, trying to keep the Moravian Brethren united in Poland and Hungary kept Comenius busy. That year, the rich widow of Prince Rakoczy and her son Sigismund, who admired Comenius, issued an invitation to Comenius to help in the remodelling of the schools in Transylvania, Hungary. Comenius went to Saros-Patak and organized a model school which he called

\[20\text{Ibid.}, \text{p. 62.}\]

\[21\text{Ibid.}, \text{p. 62.}\]
"The Pansophic School." Shortly after this he produced his *Orbis sensualium pictus* (published in 1657). Goethe expressed the opinion that apart from the Bible, he never used a book as excellent as the "World in Pictures." Kozik, in his biography adds, "This textbook was evidence not only of the author's understanding of what was necessary to make education accessible and effective, but also of his keen interest in life and everything new in it; into the textbook he included pages on mining, navigation, printing, etc."  

After four years spent in Hungary, Comenius returned to Leszno but just briefly because the Swedish army had invaded Poland and again the wandering educator had to flee. He suffered the severe loss of his home, his manuscripts, particularly his pansophic writing on which he had labored so much of his life. Disheartened, he first went to Silesia and then Frankfort. In Hamburg, he became very ill. De Geer's son heard of Comenius' plight and sent word for him to come "home" to Amsterdam. Here Comenius was to find contentment and to remain for the rest of his days. Still writing, he encompassed all of his works on education into one volume, *opera didactium omnia*.

Comenius' writings were already famous in Europe and his writings were now being read and studied on American soil. Otakar Odlozilik, in his biography commemorating the three hundred and fiftieth anniversary of Comenius' birth writes:

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23Kozik, (no page number).
Comenius had not set foot on the American soil but influenced by his writings the intellectual life in New England. As Albert Mathews has written in his illuminating article, "Comenius and Harvard College," the scholars of New England were not content with merely buying the works of Comenius or with using them at school or college; they also studied them and quoted them in their own books.24

Indeed, his fame was of such nature that an invitation was extended to Comenius to visit the new world. Odlozilík reports that:

Not only John Winthrop Jr., but also some English clergymen who were interested in missionary work among the Indians in New England, took into consideration Comenius' unusual qualities and encouraged him to journey across the Ocean. It would not have been difficult to combine educational work at Harvard with missionary activities among the Indians and to promote intellectual life in New England in both ways.25

Comenius did not accept the invitation but chose to remain in Amsterdam. Robert Quick in his biography of Comenius reports that:

Here he spent the remaining years of his life in ease and dignity. Compassion for his misfortunes was united with veneration for his learning and piety. He earned a sufficient income by giving instruction in the families of the wealthy; and by the liberality of de Geer he was enabled to publish a fine folio edition of all his writings in Education, (1657).26

No biographical sketch would be complete without appraising The Great Didactic and its far-reaching influence in the world of education. Adamson pays homage to the schoolmaster's influence when he praises The Great Didactic thus:

Let the main doctrines of the seventeenth-century book be recalled for a moment, and we have to admit that, after two centuries and a half,
we have only in part reached its standpoint. In spite of some errors, Comenius was a true prophet, and the world from his day to ours has been trying to convert his visions into realities. No man ever held a more thorough-going belief in the universal need of education, whose benefits were to be monopolised by no caste, wealth, sex, or condition.

The newer life which entered in Europe with the changes of the sixteenth century, and the wider sweep of the educational net which Comenius desired to make, were incompatible with the purely scholarly, or erudite school-course of the earlier time. The curriculum devised by Comenius is not literary only, nor scientific only, but is typical of human experience as a whole: place is given to "modern studies," the vernacular is held in high honour, and if the humanist receives somewhat hard measure, he is not ruled out of the account. Most important of all, the Father of modern pedagogy tries to survey classroom problems from the standpoint, not of the pedagogue, but of the child. Instruction is only learning looked at from without: the two are united in following the normal processes of the learner's intelligence. On the side of method, the Great Didactic is especially rich: when its author drops his little pedantries and speaks freely of the work which he knew so well, he is prodigal of invaluable principles, rules, warnings, hints, which have lost none of their pregnancy by lapse of time.

It is on grounds such as these that are reared the claims of Comenius to be regarded as the founder of modern educational theory. On this point and on that he had been anticipated; he stands alone in bringing all together into one connected, self-contained, and consistent system.27

Ernest Eller writes, "Given refuge and aid in Amsterdam, by great energy he soon published his famous Opera didactica Omnia that gathered into four volumes his life's work in educational reform. It included previously published books, unpublished manuscripts long completed like the Great Didactic, and several manuscripts written in Amsterdam."28 He continues:


28 Eller, p. 17.
No man has ever believed more firmly than Comenius in the regenerating power of education. For that reason, in contrast with the narrow thinking of most people of his time, and all times, he sought it for all people. No man has ever had a more rational and practical understanding of how to educate and at the same time has combined the power to put his understanding into practice by example and by textbooks. One can readily agree therefore with Nicholas Murray Butler that Comenius' place in education is one of commanding importance. He introduces and dominates the whole modern movement in the field of elementary and secondary education. His relation to our present teaching is similar to that held by Copernicus and Newton toward modern science, and Bacon and Descartes toward modern philosophy.29

The schoolmaster was in his eightieth year and on November 15, 1670, Amos (the lover of knowledge), was dead. In his own words, "My whole life has been a pilgrimage: I have nowhere found an abiding city; but my heavenly home is open before me, and Christ has lead me to its very threshold.

"The One thing needful to myself, therefore, is this, 'Forgetting the things that are behind, and reaching towards those that are before, I press forward.'"30

BIOGRAPHICAL BACKGROUND OF MARIA MONTESSORI

Two hundred years after the death of the staunch religious leader and educational reformist, Comenius, another stellar figure appeared on the horizon—Maria Montessori, who was destined to become the first woman physician in Italy and a famous educator. Born on August 31, 1870 in Chiaravelle, Italy,31

29 Ibid., p. 18.
30 Ibid., p. 45.
31 Mortimer Standing, Maria Montessori, (London: Hollis and Carter, 1957), p. 3. Dr. Montessori planned to write the introduction to Standing's biography but died before this could be accomplished. She did, however, read and approve the biography as evidenced by her own personal letter to the author in his Introduction.
Maria was descended from two well-known families; her father, Alessandro, was of the nobility in Bologna; her mother, Renilde, came from the Stoppani lineage. Her uncle was the great philosopher, scientist, and priest who was honored by the University of Milan and to whom a monument was erected. Maria was an only child, loved and cherished by her parents, particularly, her mother, who became and remained an inspiration to her daughter throughout her life.

During a happy but uneventful childhood, Maria attended the state day school until the age of twelve when her parents moved to Rome to provide her with a better education. Because mathematics was Maria's forte, she expressed her wish to attend an engineering school. Because it was uncommon for a woman to major in engineering, her parents tried to discourage her. It was suggested that she go into the teaching profession but Maria would have nothing to do with teaching! Attend the technical school she did, but she became bored with the curriculum and turned to biology, the study which so captivated her attention that she decided to become a doctor. Again her parents were shocked because a woman in a medical school had been unheard of in Italy. Her parents used every means of persuasion to change her mind; they pointed out the fact that all her friends were in finishing schools for young ladies while she was seeking a career restricted to men only. As a last resort, her father threatened to disown her if she carried out her plan. Nothing mattered to Maria at this point except that she wanted to become a doctor and after much persuasion on her part, the medical admissions officer acquiesced and admitted her.

Being the only woman in the medical school presented many problems. The
students resented the presence of a woman and she was the victim of ridicule and many pranks. She had to do the dissection of the cadaver after school hours since it was considered indecorous to work in the dissection laboratory in the presence of male students. The setting was a weird one; a young girl surrounded by corpses in the laboratory after dark, but working earnestly and determinedly on a cadaver.

In spite of her father's strong disapproval and the hardships that she encountered as a woman medical student, she did complete the study of medicine. A reconciliation with her father came about in a most unusual way:

It was a tradition in the medical school at that time that every new graduate should deliver a public lecture to the Faculty after his first year. This was a sufficiently trying ordeal in any case, but especially so in hers. Prejudice was still running high, and many in the audience had come not only in a spirit of criticism, but prepared to create a disturbance. 'I felt like a lion-tamer that day,' said Montessori in recalling the occasion. It happened that on the particular morning--when this lecture was to take place--that a friend of Alessandro Montessori, meeting him in the street, remarked with some surprise, 'Aren't you coming to the lecture?' 'What lecture?' replied the father, who had lost touch with his daughter's doings. Explanations followed; and the result was that Alessandro was persuaded, rather against his will, to come to the lecture. The young doctor's triumph was a complete as Portia's. Her treatment of her theme was so brilliant, her delivery so faultless, her personality so fascinating, that all opposition was swept away and she received a great ovation. Her father found himself the centre of eager congratulations from all sides at having such a daughter. The ugly duckling had indeed turned out to be a swan.

Maria Montessori, therefore, had the distinct honor of being the first woman to earn the degree of Doctor of Medicine, in the year 1894.

32 Ibid., pp. 8-9.

While still a student at the University, Dr. Montessori became interested in nervous disorders of children and she pursued this interest by doing postgraduate work in the Psychiatric Clinic of the University.\(^{34}\) Appointed assistant doctor at the Psychiatric Clinic at the University of Rome, she came in close contact with the defective children who at this time were still grouped with the insane. Her heart was touched with the pitiful conditions under which these poor children had to live. Standing relates Montessori's compassion when he describes the situation:

In one of the lunatic asylums she came across a number of these unhappy children herded together like prisoners in a prison-like room. The woman who looked after them did not attempt to conceal the disgust with which she regarded them. Montessori asked her why she held them in such contempt. 'Because,' the woman replied, 'as soon as their meals are finished they throw themselves on the floor to search for crumbs.' Montessori looked around the room and saw that the children had no toys or materials of any kind—the room was in fact absolutely bare. There were literally no objects in their environment which the children could hold and manipulate in their fingers. Montessori saw, in the children's behaviour, a craving of a very different and higher kind than for mere food. There existed for these poor creatures, she realized, one path and one only towards intelligence, and that was through their hands. Instinctively the poor deficient mites had sought after that path by the only means in their reach.\(^{35}\)

Thus because of her unusual interest and compassion for these abnormal children, she remained in charge of hospitals for defective children for six years and dedicated herself to helping them in the best possible way:

The more Montessori came in contact with these defective children—studying them, meditating over their condition, longing to help them—

\(^{34}\) Standing, p. 9.

\(^{35}\) Ibid., p. 10.
the more strongly did she come to differ from the generally accepted views with regard to them. It became increasingly apparent to her that mental deficiency was a pedagogical problem rather than a medical one. She came to believe that, with special educational treatment, their mental condition could be immensely ameliorated, a view she found to be shared by the French doctors Jean Itard and Edouard Seguin, and a few others.36

Of Seguin's influence, Fynne in his work, *Montessori and Her Inspirers* writes, "Interest led to inquiry and she soon 'became conversant with the special method of education devised for these unhappy little ones by Edward Seguin."37

Itard (1775-1838) was for many years physician to the National Institution for the Deaf and Dumb in Paris, and through his experimental and educative work in that famous school he made valuable contributions to the science and art of deaf-mute education. To education in general, he made a more vitally important contribution through his wonderful observational and experimental treatment of the so-called Savage of Aveyron, an unfortunate boy of eleven living what appeared to be a purely animal existence in the woods near Aveyron. Believing that civilized man was the joint product of nature and education and that without the latter he could never have become possessed of distinctively human characteristics, Itard saw in this wild boy the natural or savage being. This creature, he was convinced, was potentially a man and only required development by educative means. It was only necessary to draw forth and develop the child's latent powers; to add to nature the other essential factor which had necessarily been inoperative during a savage existence.38

Of Seguin's background, Fynne reiterates:

Dr. Seguin (1812-1880) devoted his life and great talents to the education of idiots, beginning his work in France and continuing it in the United States. He studied medicine under Itard, for a time and became greatly interested in the latter's two pamphlets referred to above. Inspired by his great teacher, he began to


specialise in the causes and cure of idiocy and soon came to the conclusion that education afforded the best means for amelioration of the lot of its unfortunate child victims. The result of long study, scientific observation, and ingenious experiments was the formulation of his great system of physiological education. Though this system was based upon the results of his investigation into the causes and relief of idiocy, he always insisted that it embodied the true principles and the best methods of normal education. Like Itard, he has left complete accounts of his work which are rich in the minutest details of procedure. 39

The unique study by Dr. Itard, The Care and Education of the Wild Boy of Aveyron captured her interest and she read the study very carefully. Dr. Seguin's treatise, Traitment Moral, Hygiène et Education des Idiots, based on a ten year study of working with these unfortunate children, proved valuable to the Dotteressa not only at this time, but later in her undertaking with normal children. However, her preparation and work was not limited to reading; she also devised didactic materials and trained her co-workers to use them correctly and effectively. She lectured vigorously on the behalf of these children, in fact so eloquently at a pedagogical conference at Turin, Italy, that the Minister of Education, Dr. Guido Bacelli, asked her to give a series of lectures in Rome on the education of the feeble-minded. This was an important step for Dr. Montessori in her effort to aid in the plight of the deficient. Standing, in his biography of the doctor, makes this prophetic statement, "She complied with this request, and, as a result of this course, which laid the foundation stone of scientific pedagogy in Italy, there came into being a state orthophrenic school." 40 This was the challenge that

39 Ibid., p. 9.

40 Standing, p. 10.
Montessori was hoping to receive. Work and study became synonymous as she thrust herself into this new and challenging situation. Cole comments on the enthusiasm of Montessori for her new world:

Gradually she became more and more interested in defective children and began searching the literature for suggestions on how to train them. She was even more convinced than he that the proper treatment of mental deficiency in children was more an educational than a medical problem.

Mme. Montessori was a person of great determination, vigor, and driving power. She made up her mind quickly, acted with speed and decision, talked willingly about her ideas, and worked incessantly to put them into effect. As a result of her constant advocacy of education for defectives, she was asked by the minister of education to deliver a series of lectures before the teachers of Rome, in the year 1898. These lectures aroused so much interest that a school for defectives was founded, and for two years Mme. Montessori not only trained the teachers for the school and supervised their work but also taught the children herself. Her day began at 8 a.m. and lasted till 8 p.m. The children who attended the school were remarkably successful in learning the usual school subjects. Mme. Montessori was constantly devising new methods, adapting old ones, studying each child, analyzing subject matter, and investigating the techniques used by other workers in the field. Her combination of careful study, teaching skill, vitality, and ingenious resourcefulness resulted in the development of the defective children so that they could read and write as well as ordinary children. Those concerned with education in Italy were most enthusiastic about the results, but Mme. Montessori's restless mind was already seeking new problems to conquer. As she wrote: "While everyone was admiring the progress of my idiots, I was searching for the reasons which could keep happy, healthy children of the common school on so low a plane that they could be equalled ... by my unfortunate pupils." The conclusion she came to was that the training of the defectives stimulated them to the best possible use of their powers, while that currently given children in public schools so inhibited their development that they were unable to use more than a small proportion of their native capacity.\footnote{Cole, p. 564.}

Associated as directress of the scuola ortofrancia from 1898 until 1900, and
experiencing remarkable results with the idiot children, Montessori felt that she wanted to teach normal children. 'This feeling, so deep as to be of the nature of an intuition, became my controlling idea. I became convinced that similar methods applied to normal children would develop and set free their personality in a marvellous and surprising way.'\textsuperscript{142} Dr. Montessori returned to Rome to study philosophy, experimental psychology, and pedagogical anthropology. "Yet seven years were to pass before her theories were put into practice, and her 'intuitions' confirmed."\textsuperscript{143}

Again she turned to the works of Itard and Seguin and she recalls:

I translated into Italian and copied out with my own hand the writing of these two men from the beginning to the end, making for myself books as the old Benedictines used to do before the diffusion of printing. I chose to do this by hand in order that I might have time to weigh the sense of each word and read in truth the spirit of the authors.\textsuperscript{144}

Evidently Seguin exerted great influence upon the Dotteressa because she acknowledges this inspiration when she writes:

The voice of Seguin seemed to be like the voice of the forerunner crying in the wilderness, and my thoughts were filled with the immensity and importance of a work which should be able to reform the school and education.\textsuperscript{145}

Yet the seven years that were to pass before her "intuitions" were confirmed, were spent as a student, writer and educator. Having entered the

\textsuperscript{142}As quoted in Standing, p. 12.

\textsuperscript{143}Ibid., p. 12.


\textsuperscript{145}Ibid., p. 42.
University of Rome in 1900, and having studied under the famous Professor Sergi, the anthropologist, she was invited to join the faculty as a specialist in pedagogical anthropology, in 1902. In addition, she held the Chair of Hygiene at the Magistro Femminile (one of the two women's colleges at that time). Still another accomplishment was the writing of her first major work, Pedagogical Anthropology, comprising the lectures she delivered at the University of Rome. Her preparation for the teaching of normal children was thorough; she read the writings of Morselli, Itard, Seguin, Morel, Lombroso, De Giovani, Sergi, and others. Indeed, she carried out her plans for preparation and action; in her own words, 'To collect one's forces, even when they seem to be scattered, and when one's aim is only dimly perceived--this is a great action and will sooner or later bring forth fruits.' Bring forth fruits it did, in the San Lorenzo Quarter of Rome, known for its poverty, squalor, and crime. In the San Lorenzo Quarter were to be found a large number of big buildings, put up during a building boom and into which the poorest families of Rome crowded into these apartments, turning them into unhealthful one-room units. Montessori was given the opportunity to establish schools for young children of the working parents of this area. This was the impression that Maria Montessori received upon her first visit to the San Lorenzo Quarter:

46 Maria Montessori, Pedagogical Anthropology, translated by Frederick Taber Cooper, (New York: 1913), p. viii.


48 Standing, p. 12.
When I passed for the first time through these streets it was as if I found myself in a city upon which some great disaster had fallen. It seemed to me that the shadow of some recent struggle still oppressed the unhappy people who, with something very like terror in their pale faces, passed me in these silent streets. The very silence seemed to signify the life of a community interrupted, broken. Not a carriage, not even the cheerful voice of the ever-present street vendor, nor the sound of the hand-organ playing in the hope of a few pennies, not even these things, so characteristic of poor quarters, enter here to lighten this sad and heavy silence.

Observing these streets with their deep holes and door steps broken and tumbling, we might almost suppose that this disaster had been in the nature of a great inundation which had carried the very earth away; but looking about us at the houses stripped of all decorations, the walls broken and scarred, we are inclined to think that it was perhaps an earthquake which had afflicted this quarter. Then, looking still more closely, we see that in all this thickly settled neighborhood there is not a shop to be found. So poor is the community that it has not been possible to establish even one of these popular bazaars where necessary articles are sold at so low a price as to put them within the reach of everyone. The only shops of any sort are the low wine shops which open their evil-smelling doors to the passerby. As we look upon all this, it is borne upon us that the disaster which has placed its weight of suffering upon these people is not a convulsion of nature, but poverty—poverty with its inseparable companion, vice.49

These conditions led to the founding of the first Casa dei Bambini in 1907. At the official opening ceremony, Maria Montessori was to give the opening address. She had a feeling of something "big" to come from this undertaking. 'I had, she says, 'a strange feeling which made me announce emphatically that here was the opening of an undertaking of which the whole world would one day speak.'50 For the next five years, the Dotteressa was to direct the "Children's Houses." The San Lorenzo Quarter was to have the good fortune of inheriting Dr. Montessori's skill and experience. She writes of this challenge:

50Standing, p. 20.
I set to work, she says, like a peasant woman who, having set aside a good store of seed-corn, has found a fertile field in which she freely sows it. But I was wrong. I had hardly turned over the clods of my field, when I found gold instead of wheat: the clods concealed a precious treasure. I was not the peasant I had thought myself. Rather I was like foolish Aladdin who, without knowing it, had in his hand a key that would open hidden treasures.\footnote{Ibid., p. 21.}

Since the schools were unfurnished at the start, Montessori had furniture made to the size of the children and fortunately, since she was limited in her budget, she constructed much of her didactic materials. The schoolroom is described by Montessori:

The principal modification in the matter of school furnishings is the abolition of desks, and benches or stationary chairs. I have had tables made with wide, solid, octagonal legs, spreading in such a way that the tables are at the same time solidly firm and very light, so light, indeed, that two four-year-old children can easily carry them about. These tables are rectangular and sufficiently large to accommodate two children on the long side, there being room for three if they sit rather close together. There are smaller tables at which one child may work alone.

I also designed and had manufactured little chairs. My first plan was to have them cane seated, but experience has shown the wear on these to be so great, that I now have chairs made entirely of wood. These are very light and of an attractive shape. In addition to these, I have in each schoolroom a number of comfortable little armchairs, some of wood and some of wicker.

Another piece of our school furniture consists of a little washstand, so low that it can be used by even a three-year-old child. This is painted with a white waterproof enamel and, besides the broad upper and lower shelves which hold the little white enameled basins and pitchers, there are small side shelves for the soap-dishes, nail-brushes, towels, etc. There is also a receptacle into which the basins may be emptied.

In each of our schoolrooms we have provided a series of long, low cupboards, especially designed for the reception of the didactic materials. The doors of these cupboards open easily, and the care of the materials is confided to the children.\footnote{Montessori, The Montessori Method: Scientific Pedagogy, pp. 80-82.}
Because Montessori's method of teaching had three main characteristics, the Children's Houses were very successful. The first was gearing the curriculum to the individuality of each child. The second, that of complete freedom of the child and teacher and third, the training of the senses or sensory education. Cole sums up the basic tenets:

The Montessori system is, then a fusion of somewhat divergent elements, of which three are outstanding. Two of these basic principles--respect for the child's individuality and encouragement of his personal freedom--comprise what might be called the Montessori point of view. They determine not only the atmosphere of the schoolroom, but the relation of teacher and pupil, the arrangement of the schoolroom, and the nature of the instructional procedures. The sense education, together with its transfer to the elementary school subjects, is better referred to as the Montessori technique. The two fundamental tenets and the specific methodology together give the Montessori its distinctive character.52

And of her scientific pedagogy which Montessori explains in the N.E.A. Proceedings:

The scientific pedagogy, as understood thus far, does not indeed present anything but the ideal for establishing pedagogy on the lines of the positive and experimental science in accordance with the progress of the time and not the realization of such an idea. In fact, the scientific laboratory of experimental pedagogy cannot be other than the school itself, where the children live and are transformed. I believe that my system of education is founding this laboratory where the first germs of a science of man are visible because of the precision of systematic means, and also because of the effect upon human development.53

The Children's Houses were discussed widely--among educators, psychologists, and even lay people who were interested in the welfare of children. Many writers felt that the Montessori Method had a significant impact upon the

52 Cole, p. 570.

education of the young. Such a writer was William Stern who felt that the
system had much to offer.

Exercise of the senses—and through the senses, exercise of the in-
tellect; such is the main path taken by Mme. Montessori in her general
education of the little child. To distinguish, arrange without help,
to name correctly colour, form, tone, material; to know and skilfully
control their own physical movements; to feel by touch and then to draw
outlines until the power of writing develops involuntarily; to count and
calculate by little sticks—all this and much more is learnt by the
children of three to seven years of age, without compulsion but with
delight and astonishing speed. They learn to play—but all their games
are learning games, intellectually devised for the exercise of intellec-
tual powers.

Dr. Montessori continued her work with the Children's Houses until 1911. Then
she began to travel widely, lecturing to large audiences on the subject closest
to her heart, the education of children. She went to America in 1913 and the
Montessori Educational Association, whose officers were Mrs. Alexander Graham
Bell, Dr. Philander Claxton, United States Commissioner of Education, S. S.
McClure of McClure's Magazine, and Margaret Wilson, daughter of the President,
gave her a tremendous welcome. Crowds jammed Carnegie Hall to hear her; among
them was John Dewey. Harvard University extended her an invitation to speak.
At the San Francisco Exhibit, she conducted a model school under the auspices
of the National Education Association. In the meantime, she continued to
publish her writings. The Montessori Method had been published in 1912, the
Pedagogical Anthropology in 1913, The Advanced Montessori Method in 1917, plus
countless articles that appeared in newspapers and periodicals. In Barcelona,
a Children's Chapel, for the singular purpose of introducing the Montessori
methodology and religious education on an experimental basis, was erected. An

54 William Stern, Psychology of Early Childhood, (New York, 1924), pp. 31-
account of this appears in Montessori's *Child in the Church*, published in 1929.

Montessori schools were started all over the world, in Europe, Asia, and even on the islands of the Pacific. In Rome, influential citizens created a Montessori Society, Opera Montessori, which is still in existence today.

Montessori eventually felt the need to study and meditate and to rest from the exhaustion of her lectures and travel. Standing writes:

Just here Montessori recognized her greatest danger. She realized that as her principles went far out into the world to penetrate by their own expansive force into the home, school and society, there would be always a grave danger that—in the process—they might be misunderstood and misapplied. And just because she had discovered them and knew them intimately she felt that she was the best-qualified to direct their application in these ever-widening spheres. Therefore it was of paramount importance that she should use her time and talents to the best advantage; and not dissipate her energies by too much travel and propaganda. She felt the need of retiring again into herself for study and meditation, to draw thence insight and power to carry her principles into widening applications. For this reason she was obliged to decline hundreds of invitations to travel and lecture. 'I, too, have work to do,' she remarked to a friend, 'I cannot talk all the time.'

Meditate and write she did and her writings were translated into many languages, including Russian. For forty years, Dr. Montessori went on with her research. Then in 1939, she flew to Madras, India to engage in teacher education. During World War II she interned in India where she founded a Montessori school; her inexhaustible energy and determination would not permit her to remain idle. Then in 1947, she returned to Italy to help in the reorganization and reconstruction of the schools which had been destroyed during the war. In 1949, she addressed UNESCO and received a standing ovation. That same year, she received recognition from the French government, the medal

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55 Standing, p. 47.
of the Legion d'Honneur. Still she continued to write. The Absorbent Mind was published in 1949 when she was seventy nine. Her life had been rich and rewarding. The Dotteressa who gave her life to children and to the love of learning died in Holland May 6, 1952. To conclude this biographical background of Maria Montessori, a passage taken from her own Secret of Childhood, which might be likened to an epitaph, is appropriate:

Anything affecting the child affects the most sensitive point of a humanity which has its roots in the most remote past and is directed toward the infinity of the future. Anything that affects the child affects the most delicate and vital point, where all is plethoric with life, where the secrets of the soul are confined, for there the creation of the adult is wrought.56

Coincidental is the fact that Comenius, born in Czechoslovakia, and Montessori, born in Italy, educational reformers, dedicated to a common cause, the education of children, both died in Holland; Comenius in 1670 and Montessori in 1952.

CHAPTER IV

THE EDUCATIONAL PHILOSOPHIES OF JOHN AMOS COMENIUS
AND MARIA MONTESSORI

Before the philosophy of John Amos Comenius is studied and analyzed, it is imperative that the cultural matrix of the period in which Comenius lived be examined to show causal relationship in the development of his philosophy. It is likewise imperative that the human element be explored—the influence those men of wisdom who preceded Comenius had upon his educational philosophy.

What were some of the characteristics of the time in which Comenius lived? Comenius was twenty-six years old when the Thirty Years' War started, and he was fifty-six when the Treaty of Westphalia was signed in 1648. As a young man, he had witnessed fierce fighting, bloodshed, invasion, and destruction by foreign armies. Comenius was finally forced to flee his homeland and to wander as an exile, always in danger of imprisonment, never to return to his beloved land.

The scientific Renaissance, which began in the sixteenth century and paralleled the Reformation, did not gain full impetus until the seventeenth century according to Good:

Twenty-five years (1518-1543) will cover Magellan's circumnavigation of the globe, the new astronomy of Copernicus, and the anatomy of Vesalius. Such achievements might lead one to assign the rise of modern science to the early decades of the Reformation period, but the real power of science was not understood until the following century.1

The invention of new instruments of observation and measurement produced scientific discoveries by Leeuwenhoek, Harvey, Gilbert, Pascal, Mercator and Halley. Comenius lived in this exciting period of scientific discovery when stress was being put upon observation, experimentation, and inductive reasoning which ultimately influenced his philosophy.

In this same period there were rigid hierarchical lines of social stratification that were continued from one generation to the next. The wealthy or nobility consisted of the land owners; the middle-class consisted of the skilled laborers and merchants; the lowest class consisted of peasants and serfs who were often ragged and who suffered from want. One's station in life was almost pre-determined at birth particularly since occupations were handed down from one generation to the other. Even marriages were pre-arranged by the parents of the couple. Almost everyone belonged to the church, which was the heart and center of activity, and an individual belonged to the same church from baptism until death. As was mentioned earlier, Comenius was reared in a small community where life was routine and simple. His family belonged to the church of the United Brethren, in which he was imbued with strong religious attitudes that deeply influenced his writings throughout his life.

The Reformation ran its violent course between 1517 and 1648.² The Protestants believed that salvation came to the individual through his own personal efforts. To be a true Christian, one must be able to read the

Holy Scriptures for oneself. Thus elementary religious reading schools spread over northern and western Europe. Cubberley describes them:

In the towns children were apprenticed out early in life, and for long hours of labor. Child welfare was almost entirely neglected, children were cuffed about and beaten at their work, juvenile delinquency was a common condition, child mortality was heavy, and ignorance was the rule. Schools generally were pay institutions or a charity, and not a birthright, and usually existed only for the middle and lower-middle classes in the population who were attendants at the churches and could afford to pay a little for the schooling given. Reading and religion were usually the only free subjects.  

Learning was largely by rote, and the untrained teacher kept order out of chaos by means of a switch or even in some extreme cases by the use of a whipping post which was set into the floor. Classes were dull and uninteresting with little or no motivation for learning. Schools were neither universal nor compulsory. Comenius had attended one of these schools and labelled them "the slaughterhouses of the minds of children." Such schools and the instruction were the basis of his educational reforms.

Entering Herborn College at the age of nineteen, Comenius was particularly because John Henry Alsted, a professor of theology, was on the faculty at Herborn. Alsted had won Comenius' admiration, for although he was but four years Comenius' senior, he was already a commanding figure in academic circles at that time. Will S. Monroe feels that Comenius naturally gravitated toward this center of new and vital thought:

Comenius was most helped by the instruction of the distinguished theologian and philosopher, Professor John Henry Alsted. The teachings of Alsted were of a character calculated to deepen the

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convictions of the young student from Moravia, for the Herborn professor taught among other things—as is indicated by his Encyclopedia of the sciences, published a few years later—the following: (1) Not more than one thing should be taught at a time; (2) not more than one book should be used on one subject, and not more than one subject should be taught on one day; (3) everything should be taught through the medium of what is more familiar; (4) all superfluity should be avoided; (5) all study should be mapped out in fixed periods; (6) all rules should be as short as possible; (7) everything should be taught without severity, though discipline must be maintained; (8) corporal punishment should be reserved for moral offences, and never inflicted for lack of industry; (9) authority should not be allowed to prejudice the mind against the facts gleaned from experience, nor should custom or preconceived opinion prevail; (10) the construction of a new language should first be explained in the vernacular; (11) no language should be taught by means of grammar; (12) grammatical terms should be the same in all language.

From Alsted he also acquired ideas on the scope and organization of the sciences. Also at Herborn, Comenius heard lectures by Heinrich Gutberleth, who advocated reform in teaching and also the study of the physical sciences. In addition he listened to lectures in theology by Professors Piscator, Hermannus, and Pasor. Although William Boyd agrees that Comenius was influenced by these learned men to some extent, he is of the opinion that it was Wolfgang Ratke who was the most influential.

The only one generally reckoned worthy to be remembered in the history of education is Wolfgang Ratke (1571-1635), and his chief claim to fame is in the fact that this work was the starting point of that of Comenius. And Comenius himself, the greatest of the "methodizers," is a living force to this day, not because of his methods (though they had elements of real value in them), but because in his quest for them he raised many wider questions, and developed a philosophy of education of enduring worth. In this respect he stands alone, a great educator of little ones.


Comenius, young and impressive, heard Ratke present the arguments for reform in school instruction before the Imperial Diet of the German States in 1612. Ratke inspired Comenius to contemplate the improvement of the teaching of languages.

Boyd also credits Martin Luther as having had profound impact upon Comenius for he writes:

As an educator Comenius stands in the direct line of succession from Martin Luther. The difference between the great reformer, propounding educational ideals and careless about detail, and the Moravian bishop, devoting himself to the writing of textbooks and the invention of a universal method of instruction, is no doubt very considerable, but his difference should not be allowed to obscure the community of spirit of the two men. In many respects, indeed, Comenius came nearer to Luther's point of view than any of the men on whom fell the task of creating a Protestant system of education. 6

Comenius saw that education was the birthright of every individual. "Not the children of the rich or of the powerful only," he insisted, "but of all alike, boys and girls, noble and ignoble, rich and poor, in all cities and towns, villages and hamlets, should be sent to school." 7

In working out this scheme of education, Boyd is of the opinion that Comenius was also indebted to Francis Bacon, Giordano Bruno and Tomasso Campanella:

His dependence on Francis Bacon, the great English representative of this school of thought, is obvious in the reverence for the experience which leads him to insist on acquaintance with particular facts always preceding the knowledge of general rules, as well as in the ideal of an assured system of universal knowledge as the goal of learning. His greatest debt, however, was not to Bacon, as he sometimes implies. Bacon was mainly interested in natural facts;

6 Ibid., p. 246.

for a system of knowledge which would include both the natural and supernatural. For the foundations of this more comprehensive system he went to certain Italians like Giordano Bruno and Tomasso Campanella, who combined a mystical idealism with the realism of science; and the philosophy which underlay his educational work, both on the objective side in his view of the world and on the subjective side in his view of the development of the human soul, is substantially this Italian philosophy.8

In addition Comenius gained inspiration from Juan Luis Vives (1492-1540), a scholar of Spanish birth, renowned for his work on educational reform. In his treatise, De disciplinis, Vives, who is anti-Aristotelian, sustains the argument that nature should be studied through nature rather than through the reading of the classics. Since Comenius held the same view, he allied himself with the Spanish scholar and philosopher.

While visiting the library of the castle at Wilcitz, Comenius came upon the Didactic of Elia Bodinus, which had recently been brought from Germany. Comenius was fired with enthusiasm to do a similar work in Czech, for he writes, "I entered upon the work with fervour, and completed as much of it as I could while I still remained in my native land."9

Still another inspirer who deserves to be mentioned here is William Bateus, an Irish Jesuit whose work and inspiration is acknowledged by Comenius in his Janua. Nicholas Murray Butler sums up the influence of these important forerunners of Comenius thus:

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8 Boyd, p. 247.

9 Keatinge, p. 9.
From Ratich he learned something of the way in which language-teaching, the whole curriculum of the time, might be reformed; and from Bateus he derived both the title and the plan of his Janua. Campanella suggested to him the necessity of direct interrogation of nature if knowledge was to progress, and Vives emphasized for him the same point of view the defects of contemporary school practice. But it was Bacon's *Instauratio Magna* that opened his eyes to the possibilities of our knowledge of nature and its place in the educational scheme.10

However, the man Comenius felt was his greatest inspiration was Valentine Andreae (1586-1654) whose Utopian ideas set forth in his work the *Republicae Christiano-Politicae* had great impact on him. He acknowledges his gratitude to Andreae and to the other writers in these words:

Being by God's permission banished from my country with diverse others, and forced for my sustenance to apply myself to the instruction of youth, I gave my mind to the perusal of diverse authors, and lighted upon many which in this age have made a beginning in reforming the method of studies, as Ratichius, Helvicus, Rhenius, Ritterus, Glaumiua, Caecilius, and who indeed should have had the first place, Joannes Valentinus Andreae, a man of nimble and clear brain; as also Campanella and the lord Veralum, those famous restorers of philosophy; by reading of whom I was raised in good hope, that at last those so many various sparks would conspire into a flame; yet observing here and there some defects and gaps as it were, I could not contain myself from attempting something that might rest upon an immovable foundation, and which, if it could be found out, should not be subject to any ruin. Therefore, after many workings and tossings of my thoughts, by reducing everything to the immovable laws of Nature, I lighted upon my Didactica Magna which shows the art of readily and solidly teaching all men all things.11

It was John Valentine Andreae who wrote "The Use of the Art of Teaching" in the Preface of the *Great Didactic* and who eulogized:

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11 Preface to the *Pansophiae prodromus*. 
Let none therefore withdraw his thoughts, desires, strength, or resources from such a sacred undertaking. He who has given the will, will also grant its fulfilment, and we ought without exception to demand this with good heart from the divine mercy. For, the salvation of man and the glory of the Most High is at stake.\textsuperscript{12}

Comenius is thus remembered for his attention to new approaches in education. Comenius appealed to the idealism of mankind and attempted to apply reason to education, in which all men should be educated. Comenius was reverent and felt a deep personal relationship with God. The goals of religion and education, to Comenius, were synonymous—immortality.

Because of the geographic and scientific developments of the seventeenth century, as was mentioned earlier, philosophers and teachers were becoming more and more dependent upon ascertainable knowledge rather than hearsay and opinion. There was a need for discovering the truth about the world and men such as Bacon and Descartes provided the impetus and light to hidden knowledge. Comenius, also as was pointed out earlier received many of his ideas from Bacon's \textit{Instauratio Magna}. Thus from his intellectual forbears, John Amos Comenius evolved and developed his own philosophy. He attempted a newer synthesis in education and although he was more theologian and educator than philosopher, he developed his aims of education in a universal framework which would transcend all national, religious, racial, and class boundaries; Comenius idealistically wanted universal education to bring about universal understanding.

Therefore, in the \textit{Didactica Magna}, Comenius undertakes systematically and comprehensively to set down the whole art of teaching all things to all men.

\textsuperscript{12}Keatinge, p. 173.
for this is his key to pansophism. Always Comenius reverently stands in awe of God who created man in his own image with a perceptive mind and the ability to assimilate knowledge. Unselfish in motive or gain, Comenius desires an education for all who have been "born human beings," for man is born with the innate ability to learn--the seeds of learning are present in man at birth from which knowledge, virtue, and piety can spring. Knowledge, concluded Comenius, must be acquired by man, for did not the Creator make him in his own image with a fine mind and senses with which to reason? Similarly, the seeds of virtue and piety are equally a part of the original nature of man.

A skeptic might be inclined to ask why, if it is "natural" for a man to grow learned, virtuous, and pious, the world so often goes begging for those qualities. The answer of Comenius would not be different from the one which Rousseau actually gave, that conditions, society, and the schools have been so bad that the "seeds" have had no chance to sprout and grow. Some of the defects for the schools in the past have been that they have excluded the common people, have used poor methods, have taught words merely and not real knowledge, and have been poor institutions for stuffing and flogging children rather than teaching them. We must build up good schools, "true forging-places of men."13

These true forging-places should follow nature in the division of education. Comenius divides instruction from birth to manhood into these four classifications:

I. Infancy School--The Mother's knee--the place, home.

II. Childhood--The Vernacular School--the place, every town.

III. Boyhood--The Latin School--the place, every town.

IV. Youth--The University--the place, every province.

For as Comenius explains:

13 Good, p. 193.
These different schools are not to deal with different subjects, but should treat the same subjects in different ways, giving instruction in all that can produce true men, true Christians, and true scholars; throughout graduating the instruction to the age of the pupil and the knowledge he already possesses.\textsuperscript{14}

However, education was idealistically to continue beyond these four categories. Education must be a whole-life process, for he observes in the \textit{Pampaedia}:

Just as the whole world is a school for the whole human race from the beginning of time to the very end, so the whole of life is a school for every man, from the cradle to the grave. It is no longer enough to say with Seneca: "No age is too late to begin learning"; we must say: "Every age is destined for learning, nor is man given other goals in learning than in life itself.\textsuperscript{15}

Thus Comenius was dedicated to making education a democratic process on a universal scale without any barrier. This was indeed his wish as expressed in the \textit{Pampaedia}:

Our first wish is that all men should be educated fully to full humanity; not any one individual, nor even a few nor even many, but all men together and singly, young and old, rich and poor, of high and of lowly birth, men and women—in a word, all whose fate it is to be born human beings; so that at last the whole human race may become educated, men of all ages, all conditions, both sexes and all nations.

Our second wish is that every man should be wholly educated, rightly formed not only in one single matter or in a few or even in many, but in all things which perfect human nature.\textsuperscript{16}

This was indeed revolutionary thinking for the times in which Comenius lived. It is true that before Comenius other intellectual leaders had

\textsuperscript{14}Keatinge, p. 408.


\textsuperscript{16}Ibid., p. 97.
advocated education for the masses but the point of difference is that others such as Luther, for example, were concerned with education for the sole purpose of having the masses learn to read so that they might be able to read the Scriptures for themselves. Comenius, on the other hand, wanted education for the common people for the good of the entire human race. His ambition for educating the masses would have a greater and far-reaching effect--that of a better life in a better world through universal learning and understanding. Keatinge expresses this sentiment when he declares:

Comenius's aims were revolutionary, and his didactic principles were capable of changing by slow degrees the aspect of civilization, but the philosophical basis on which they rested was that of harmonious development from existing institutions.17

An examination of Comenius's educational writings is pertinent at this time in order to study some of his philosophic and didactic principles. Since the Great Didactic is the most comprehensive of all of his writings, let this work be studied and examined. The title reveals the contents of this copious work:

The Great Didactic setting forth the whole art of teaching all things to all men; or a certain inducement to found such schools in all parishes, towns, villages of every Christian kingdom that the entire youth of both sexes, none being excepted, shall quickly, pleasantly, and thoroughly become learned in the sciences, pure in morals, trained in piety, and in this manner instructed in all things necessary for the present and the future life, in which, with respect to everything that is suggested, the fundamental principles are set forth from the essential nature of the matter, its truth is proved by examples, from the several mechanical arts its order is clearly set forth in years, months, days, and hours; and finally an easy and sure method is shown by which it can be pleasantly brought into existence.18

17Keatinge, p. 13.

18Ibid., Title-page.
The purpose of the work as explained by Comenius in his own words:

May the guiding star and rudder of our didactic be this: to search out and discover a rule in accordance with which teachers teach less and learners learn more; the school contain less noise and confusion, but more enjoyment and solid progress; the Christian state suffer less from an all pervading gloom, discord, and derangement, but find more order, light, peace, and tranquillity.19

Because Comenius felt a deep personal relationship with God, his educational philosophy is girded by his strong Christian convictions. For example, the embodiment of this strong religious feeling is best illustrated in the first five chapters of the Great Didactic.

The first chapter is called "Man is the highest, the Most Absolute, and the Most Excellent of Things Created."20 In this chapter Comenius reasons that since man was created in God's image, he should be educated, for did not the Maker divine it so? Comenius points out that:

It is evident that man is naturally capable of acquiring a knowledge of all things, since in the first place, he is the image of God. For an image, if it be accurate, necessarily reproduces the outlines of its archetype, as otherwise it will not be an image. Now omniscience is chief among the properties of God, and it follows that the image of his must be reflected in man.21

"The Ultimate End of Man is Beyond This Life"22 is the subject of the second chapter of the Great Didactic, in which Comenius urges man to prepare for eternity:

19 Ibid., Preface.
20 Ibid., p. 177.
21 Ibid., p. 193.
22 Ibid., p. 179.
To each of us, then, his life and his abiding-place is three-fold. The mother's womb, the earth, and the heaven. From the first into the second he passes by nativity, and from the second into the third by death and resurrection. From the third he makes no move, but rests there for all eternity.23

In the third chapter Comenius elaborates on this preparation for eternity by discussing the three stages in this preparation namely: (1) man learns to know himself, (2) he learns to rule himself, and (3) he learns to direct himself to God. In the fourth chapter, Comenius calls these three states of preparation (1) erudition, (2) virtue, and (3) piety and in the fifth chapter of the Great Didactic explains that erudition, virtue, and piety are but "seeds" implanted in Man waiting to be nourished and grown to fruition.

The seeds of knowledge, of virtue, and of piety are, as we have seen, naturally implanted in us; but the actual knowledge, virtue, and piety, are not so given. These must be acquired by prayer, by education, and by action. He gave no bad definition who said that man was a "teachable animal." And it is only by a proper education that he can become a man.24

Thus the watchwords of Comenius's philosophical approach to education are eruditio, knowledge; virtus seu mores honesti; virtue or good morals; and religio seu pietas, religion or piety. The Christian ideals contained in the Great Didactic are that Man is created in the image of God and is therefore of infinite worth. Man is basically good; and since Man is a teachable animal, a good education should produce a good man. Education should bring about peace and world understanding. Man must strive for immortality, the highest of all

23Ibid., p. 182.
24Ibid., p. 204.
goals.

To achieve these ends, Man must look to Nature for his guide in learning. Therefore, Comenius sets forth these nine principles:

1. Nature observes a suitable time for learning.
2. She prepares the material before she attempts to give it form.
3. She chooses a fit subject to act upon, or first submits her subject to a suitable treatment in order to make it fit.
4. She is not confused in her operations; but, in her onward march, advances with precision from one point to another.
5. In all the operations of nature, development is from within.
6. In her formative processes, she begins with the universal and ends with the particular.
8. When she begins a thing, she does not leave off until the operation is completed.
9. She avoids all obstacles that are likely to interfere with her operations.25

Following in the footsteps of nature the process of education should be pleasant and easy only, however:

(i) If it begin early, before the mind is corrupted.
(ii) If the mind be duly prepared to receive it.
(iii) If it proceed from the general to the particular.
(iv) And from what is easy to what is more difficult.
(v) If the pupil be not overburdened by too many subjects.
(vi) And if progress be slow in every case.
(vii) If everything be taught from the medium of the senses.
(viii) If the intellect be forced to nothing to which its natural bent does not incline it, in accordance with its age and with its right method.
(ix) And if the use of everything taught be continually kept in view.
(x) If everything be taught according to one and the same method.26

To Comenius there can be nothing in the understanding which is not already in the senses. He reasoned that sensation creates knowledge in that sensation produces responses that in turn produce learning. Of the importance of the

25Ibid., pp. 264-278.
26Ibid., p. 279.
sensory experience in effective learning, he stresses the fact that:

Firstly, the commencement of knowledge must always come from the senses (for the understanding possesses nothing that has not first been derived from the senses). Surely, then, the beginning of wisdom should consist, not in the mere learning the names of things, but in the actual perception of the things themselves! It is when the thing has been grasped by the senses that language should fulfill its function of explaining it still further.27

The founder of method encourages sensory experience in teaching when he writes, "The certainty of knowledge is proportionate to the extent which it is derived from sensation."28 He reiterates that there is nothing in the visible universe which could not be learned through the use of the senses when he perceives that:

To the rational soul, that dwells within us, organs of sense have been supplied, which may be compared to emissaries and scouts, and by the aid of these it compasses all that lies without. These are sight, hearing, smell, sound, and touch, and there is nothing whatever that can escape their notice. For, since there is nothing in the visible universe which cannot be seen, heard, smelt, tasted, or touched, and the kind and quality of which cannot in this way be discerned, it follows that there is nothing in the universe which cannot be compassed by man endowed with sense and reason.29

This doctrine is explicitly stated in the Great Didactic by Comenius when he goes on to show how learning and teaching may be accomplished with less error:

Error in teaching and learning may be avoided if boys be made to exercise, first the senses (for this is easiest), then the memory, next the understanding, and finally the judgment. For knowledge begins from sense, and passes into memory through imagination; then the understanding of universals is reached by induction from particulars; and

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27Ibid., p. 337.
28Ibid., p. 338.
29Ibid., p. 195.
finally comes judgment on the facts of understanding, leading to the establishment of knowledge.30

Thus Comenius, the sense-realist, authored the *Orbis Pictus*, a picture book to teach children, because he firmly believed that children acquire knowledge by associating objects with words, not by merely learning words by rote. Therefore sensory training, nature study, observation, and experience with meaning should form the basis of instruction. Likewise, he advocated learning in the vernacular rather than in Latin to make learning more meaningful.

Comenius's educational philosophy reveals a spiral plan, apparent in the *Janua*, whereby a child learns about God, nature, and man in ladder style. As the child progresses, that material became increasingly more difficult and the topics are treated more fully and penetratingly. This plan of providing complete knowledge at every period of growth is termed encyclopedism.

In *The School of Infancy*, Comenius, deeply religious as he was, could not eliminate the doctrine of original sin; but he maintained that early training of Christian morals and practices would overcome the original perversity of the human heart. In *The School of Infancy*, a guide for mothers of pre-school children, he expounds the following philosophy:

The child is not to be regarded with reference to its youthful disabilities, but rather with a view of the purposes of the Divine mind.31

... The purpose in the education of the child is threefold; (1) faith and piety, (2) uprightness in respect to morals, and (3) knowledge of languages and arts; and this order must not be

30Ibid., p. 287.

31Monroe, p. 111.
In the education of the child, care especially for the soul, which is the highest part of its nature; and next, attend to the body, that it may be made a fit and worthy habitation for the soul. Aim to train the child to a clear and true knowledge of God and all his wonderful works, and a knowledge of himself, so that he may wisely and prudently regulate his actions.

Learning must be a continuous process from the Mother's knee on throughout life. It must also be efficacious, as well as universal. Again, because of the influence of his predecessors as well as his own personal and religious background, he developed his ideas and thinking along communal and pansophic lines. The Humanists had broken down much of the belief in monastic withdrawal from the world and now the pendulum was swinging in the other direction. Campanella, himself a monk, concluded that man cannot live and think in isolation; he needs to relate to others and to the world. Thus Comenius, a reformer of method, believed that by providing a priori methods which would bring success to the teacher who followed his didactics, was at the same time paving the way to universal knowledge. This knowledge must not be a mere accumulation of fact but the development of reasoning, understanding and good judgment, for through this search for knowledge and truth, Man would come closer to God. Comenius set forth his eighteen aphorisms by which universal knowledge was to be obtained. These aphorisms constitute the philosophic basis of Pansophia:

1. Universal knowledge, so far as it can be obtained by man, has as its objects, God, nature, and art.

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32 Ibid.
33 Ibid.
2. A perfect knowledge of these three is to be sought.
3. The knowledge of things is perfect when it is full, true, and ordered.
4. Knowledge is true when things are apprehended as they exist in reality.
5. Things are apprehended in their essential nature when the manner in which they have come into existence is understood.
6. Each object comes into existence in accordance with its "idea," that is to say, in relation to a certain rational conception through which it can be what it is.
7. Therefore, all things that come into existence, whether they are the works of God, of nature, or of man, do so in accordance with their ideas.
8. Art borrows the "ideas" of its productions from nature, nature from God, and God from Himself.
9. In fashioning the world, therefore, God produces an image of Himself, so that every creature stands in a definite relation to its creator.
10. As all things share in the "ideas" of the Divine mind, they are also mutually connected and stand in a definite relation to one another.
11. It follows that the rational conceptions of things are identical, and only differ in the form of their manifestation, existing in God as an Archetype, in nature as an Ectype, and in art as an Antitype.
12. Therefore the basis of producing as of apprehending all things is harmony.
13. The first requisite of harmony is that there should be nothing dissonant.
14. The second is that there should be nothing that is not consonant.
15. The third is that the infinite variety of sounds and concords should spring from a few fundamental ones, and should come into being by definite and regular processes of differentiation.
16. Therefore, if we know the fundamental conceptions and the modes of their differentiation, we shall know all things.
17. Such rational conceptions can be abstracted from phenomena by means of a certain method of induction, and must be posited as the norms of phenomenal existence.
18. These norms of truth must be abstracted from these objects whose nature is such that they cannot be otherwise, and which are at every one's disposal for the purpose of making experiments, that is to say, from natural phenomena.34

34Keatinge, p. 33-34.
Pansophism inspired Comenius to write the *Via Lucis* while in England awaiting the formation of a universal college. The *Way of Light* is taken to signify the millenium of learning which is to be obtained by means of four things: (1) universal books, (2) universal schools, (3) a universal college, and (4) a universal language. In fact, on this point, he specifically says:

The universal college is to consist of men chosen from the whole world. These must be gifted, industrious, and pious, and their task is to further the welfare of mankind and extend the limits of knowledge in every way.35

Comenius, a theologian using a metaphysics imbued with the speculative spirit of the seventeenth century, developed a didactic which Jean Piaget described thusly: "Comenius' metaphysics lies between scholasticism as inspired by Aristotle and the mechanicalism of the seventeenth century."36

Comenius was much more interested in coming to grips with the countless practical problems he encountered as a teacher and a school administrator. According to Comenius, man can be made a man by cultural birth. Comenius, a realist, contended that if man is to become a man, education must form him. He is biologically at birth capable of full potentiality as a human being by means of a kind of divinity at birth.

Comenius had an interesting conception of mind which is distinctly realistic, but which does not harmonize with his religious beliefs that the seeds of learning are implanted in man. On this Butler comments:

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35 Ibid., p. 46.

The interesting conception of mind which Comenius held is distinctly realistic, although his religious beliefs did not harmonize with it. The mind of man, he said, is "like a spherical mirror suspended in a room," which "reflects images of all things that are around it." This is a vivid figure for describing the character of the mind. If a person has not experienced it, he can easily imagine a crystal ball suspended in a room as sort of chandelier. He can see how every object in the room would somewhere produce its image on the ball. Each person coming into the room would have his likeness reflected on the ball-like mirror from his very first appearance in the doorway. It is easy to draw analogies from this figure. The spherical mirror is the mind of man.37

Because Comenius was a sense-realist, he was opposed to verbal humanism and verbal scholasticism, since both rested upon authority rather than observation. He wanted children to learn by observing. He was equally emphatic on the point that children learn from materials and books adapted to their abilities and interests.

Care must be taken to suit all these books to the children from whom they are intended; for children like whimsicality and humour, and detest pedantry and severity. Instruction, therefore, should ever be combined with amusement, that they may take pleasure in learning serious things which will be of genuine use to them later on, and that their dispositions may be, as it were, perpetually enticed to develop in the manner desired.38

Although Comenius lived about two hundred years before psychology became more of a science, he was perceptive about individual differences in children and advocated that classes be divided according to ability to learn and in planning the work and materials to suit these children. In the vein of child development he urged shorter school hours, more play, sounder health, better body development and happier classrooms. Comenius believed in discipline but it


38Great Didactic, p. 422.
should never be associated with schoolwork.

Now no discipline of a severe kind should be exercised in connection with studies of literary exercises, but only where questions of morality are at stake. For, as we have already shown, studies, if they are properly organized, form in themselves a sufficient attraction, and entice all (with the exception of monstrosities) by their inherent pleasantness. If this be not the case, the fault lies, not with the pupil, but with the master, and, if our skill is unable to make impression on the understanding, our blows will have no effect. Indeed, by any application of force we are far more likely to produce a distaste for letters than a love for them. Whenever, therefore, we see that a mind is diseased and dislikes studies, we should try to remove its indisposition by gentle remedies, but should on no account employ violent ones.

Motivation is necessary for learning and Comenius felt that interest in learning should always remain high and that the teacher had the responsibility of keeping the interest of the students kindled. The curriculum must have practicality and children must be taught that which is useful, for he advises in *The Analytical Didactic*:

> Let use be in evidence everywhere. Beautiful things are to be enjoyed only as they are useful, because beauty without use is a tree without fruit, show without substance, a siren that lulls the unwary.

He was likewise emphatic in his conviction that education should have a Christian orientation; otherwise it would be a journey in vanity. As did Bacon, Comenius believed that knowledge is power. He praised the advanced ideas of the Catholic humanists, Vives. At a time, when most theologians stressed man's evil and waywardness, Comenius took the opposite view and praised man for his innate goodness and greatness.

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Some critics see a Platonic likeness in Comenius' philosophy because Comenius, too, believed in the ideal state. However, Comenius believed that wisdom should belong to all:

... precisely for this reason, wisdom is needed by all men. For not only should every man be in the first place teacher, leader, and ruler of himself, but he should be them for others, too. Therefore, there should be no man who is not a philosopher; for he was created a creature of reason and order to contemplate the nature of things and show them to others. There should be no man who is not a king.\footnote{John Amos Comenius-Selections, p. 112.}

Comenius wanted all the citizens of his ideal state to be philosophers and kings.

Comenius' aims were also to make man Christ-like. God was to Comenius the beginning and the end of education. Comenius abhorred the disciplinarians of the schools of his time. Children should be treated with love and understanding--like young plants which need care and nourishment. Comenius stressed the necessity of experience in learning--schools must be workshops for the mind. Let children "learn by doing" advised Comenius. On this Jean Piaget writes:

... Comenius' general theory involves a concept of parallelism or corresponding harmony rather than dependence between the cognitive functions or organs (mens, cerebrum, ratio) and activities themselves (manus, operatio, artes). But as soon as he comes to deal with teaching, he corrects his approach and steadily affirms the primacy of action: "Craftsmen do not hold their apprentices down to theories; they put them to work without delay so that they may learn to forge metal by forging, to carve by carving, to paint by painting, to leap by leaping. Therefore in schools let the pupils learn to write by writing, to speak by speaking, to sing by singing, to reason by reasoning, etc., so that schools may simply be workshops in which work is done eagerly. Thus, by good
practice, all will feel at last the truth of the proverb: fabricando fabricamur.42

In closing, Comenius' educational philosophy, his aims of education, and his hopes for a better world are embodied multum in parvo, when he contemplates "if all men were to learn all things in all ways, all men would be wise and the world would be full of order, light and peace."43

THE EDUCATIONAL PHILOSOPHY OF MARIA MONTESSORI

Although Maria Montessori acknowledged the contributions made by her predecessors in educational philosophy, she did not consciously draw upon the work of any of the philosophers, but preferred to remain eclectic in her educational principles and methods.

Her remarkable and important work with children was based on a unique philosophy derived from a combination of motherly intuition, a broad social outlook and intensive scientific training. Of Montessori, writes Boyd:

...living a full half-century later than Seguin in a time of philosophical disillusionment, shows in an exaggerated form the prevalent distrust of speculative thinking. She approaches educational questions, she imagines, without any of the philosophical ideas about the meaning and methods of education which in her opinion have vitiating the work of all previous educators and delayed the coming of scientific pedagogy. It is her idea to be a scientist pure and simple, an observer of the real facts of child development and nurture, unblased by any preconceptions as to the nature and the end of the process.44

42Ibid., p. 18.

43Ibid., p. 100.

However, Fynne in his work, *Montessori and Her Inspirers*, believes that while every principle underlying the Montessori Method was enunciated by previous educational thinkers or implied in their theories\(^{45}\) the value of her work is largely due to the fact that for each of these principles she has found a more definite interpretation and a more direct and enlightened application to school practice than we owe to any of her predecessors.\(^{46}\)

One of Maria Montessori's predecessors was John Locke, who in his *Essay Concerning Human Understanding* underscores the importance of the senses in learning but he does not suggest methods or means of sensory training; whereas it is upon such training that Dr. Montessori's method is based. Locke also advocates the close observation of the child within a set environment, but this observation differs from the thorough and scientific observation which is an essential part of the Montessori system.

Rousseau, on the other hand, had a conception of education fundamentally identical with hers but evades all the difficulties of educational work by expounding his methods with reference to the exceptional case of a child in a very uncommon situation.\(^{47}\)

Fynne then succinctly comes to this conclusion:

Neither in the writings of these two great pioneers nor in the thought and work of their many followers could inspiration and guidance be derived by one who is, like Dr. Montessori, a trained investigator.


\(^{46}\) Ibid., p. 2.

\(^{47}\) Boyd, p. 186.
whom nothing less will satisfy than the founding of educational theory and technique directly upon the laws and facts of child life as revealed by exact science.48

And on the influence of Pestalozzi, Herbart and Froebel he adds:

The greatest educational reformers of the nineteenth century--Pestalozzi, Herbart and Froebel--who were followers of Rousseau, did not apply to the study of the individual pupil the methods of science. Nor did they directly found educational systems upon its teachings.49

Froebel, it is true, did formulate a system which had considerable influence on our schools but the Kindergarten was not based on facts of child life as ascertained by direct observation and experiment. "The suitability of its 'gifts' and 'occupations' to the needs of the child developing through self-activity was not determined by exact scientific methods." Though Maria Montessori did concur with Froebel on the importance of sensory training, she went a step further in that she devised apparatus of a more scientific nature for formal training of the senses.

Thus Maria Montessori interpreted the principles of her forebears and applied them scientifically in the strictest accord with observed facts and "laws" of child development. On the importance of the influence of Dr. Montessori's philosophical forerunners, it may be assumed that "To them, indeed, she is little, if at all, indebted for inspiration and enlightenment."

However, for inspiration and enlightenment she is indebted to two famous physicians, Doctor Jean Itard and Doctor Edouard Seguin, whose work was

48Fynne, p. 6.

49Ibid.

50Ibid., p. 7.

51Ibid., pp. 11-12.
concerned solely with the education of abnormal children. They examined and observed children in the light of the best scientific knowledge in their respective periods. They sought out difficult cases performed experiments and taught these defective children under the greatest difficulties.

Fynne goes on to say that when Dr. Montessori began her distinguished career by teaching the abnormal children, she consulted the works of these famous clinicians.

She went to the illuminating pages of Itard and Seguin and found therein inspiring thoughts and a wealth of knowledge. And when later she turned her attention to normal children she found that the principles which determined the wonderful methods of these men were applicable, as they themselves believed, to universal education.52

In her own words she acknowledges their help and guidance when she reminisces, "Thus my ten years of work may in a sense be considered as a summing up of the forty years of work done by Itard and Seguin."53

What philosophy does constitute the Montessori Method? Bearing in mind that her philosophy is both physiologically and psychologically oriented because of her training as a physician and her tremendous interest in child development, one can then further probe it.

First of all, it is necessary that a Montessori school be defined by the founder herself: "It is a prepared environment in which the child, set free

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52 Ibid., pp. 11-12.

from undue adult intervention, can live its life according to the laws of its
development." The principles and practice that are applied in this type
school constitute the Montessori point of view. Its aims of education as
expressed by Montessori are simply stated:

Here the sole problem of education is reduced to its simplest terms:
to provide the child with the best means for spontaneous develop­
ment, for auto-education. These means are to form part of his
specially arranged environment. And two obvious points for criticism
are already met. First, the environment so prepared is not artificial
for the child of modern society; it is natural in that it contains
the best possible conditions for his physical, mental, and moral
development.55

Dr. Henry Holmes in his Introduction to The Montessori Method perceives
that this system presents these main points of interest: "It carries out far
more radically the principle of unrestricted liberty; its materials are
intended for the direct and formal training of the senses; it includes
apparatus designed to aid in the purely physical development of the children;
its social training is carried out mainly by means of present and actual
activities; and it affords direct preparation for the school arts."56

The Montessori principles and practice must out of necessity determine
not only the atmosphere of the classroom but the relation of teacher and
pupil, the arrangement of the classroom, the type of furniture used
(morphologically and anthropologically speaking) according to scientific


55Montessori, p. 240.

56Henry Holmes, Introduction to The Montessori Method, p. xxv.
measurements, the recording of specific biological and psychological data, and the nature of the curriculum.

Much has been said and written about the "prepared environment" but what is the role of the teacher in the Montessori school? Montessori explains the role thus:

Indeed with my methods, the teacher teaches little and observes much, and, above all, it is her function to direct the psychic activity of the children and their physiological development. For this reason I have changed the name of the teacher into that of directress.57

In fact, since the child educates himself and corrects his own errors, the teacher must be more of a psychologist than teacher.

A recapitulation of the principles that form the bulwark of the Montessorian philosophy is necessary at this time in order to bring them into sharper focus.

1. The Principle of Individuality

A child manifests in a unique way some mysterious life-force and attains to the most complete realization of his own potential by following the direction given by his individual impulses.

2. The Principle of Freedom

The individual through maturation of his powers and becoming adapted to social life through education develops best in an atmosphere in the absence of freedom of conventional restrictions on his individuality.

3. The Importance of the Training of the Senses

The third is the psychological doctrine which makes the senses the

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57Montessori, p. 173.
basis of higher life and therefore requires the training of the senses in early childhood as the precondition of complete success in later education.

For Dr. Montessori, child-life "is not an abstraction; it is the life of individual children with emphasis on the peculiar nature and needs of each pupil." The principle of individuality is the secret of the free development of the child--the satisfaction of the needs of the individual child to grow and develop to his maximum.

To understand clearly Dr. Montessori's principle of freedom, it is important to understand the one essential condition on which it is based. To only those spontaneous activities which have a direct relationship with her prepared environment, does she insist upon the granting of perfect liberty, for she believes that the ordinary child the really interesting apparatus makes an irresistible appeal, absorbing attention, inciting to educative activity, and thus pleasantly but effectively preventing useless and dangerous conduct. Once the child comes under the pleasant, helpful, and alluring influence of this prepared environment no question as to the advisability of allowing him perfect freedom can arise.

On the moral side there is gradual definite development through the same outlet of spontaneity guided and controlled in and by the prepared environment. Gradually the moral personality arises through the constant exercise and consequent growth of the will.

The first essential of this principle, is the spontaneous development of the child; the second is the formulation of a science of pedagogy based on observation; and the third is a natural environment in which spontaneity may

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58 Fynne, p. 247.

59 Ibid., pp. 244-245.
manifest itself and in which its manifestations may be observed under the best conditions. Again, all these principles require as an essential condition—that the child shall have perfect liberty—freedom to act spontaneously in the prepared environment.

Much has been written concerning this Montessori principle of freedom. Educators either reject or accept this principle. However, Culverwell lauds Dr. Montessori for her individualism and fortitude in setting forth a principle which she believes is fundamental:

To establish a principle is one thing; to determine the limits within which it is to be applied is another. Especially is this true in education. For education is always a compromise; the end in view is many-sided, and the teacher has to apply now this and now that principle. It is here that Dr. Montessori shows her individuality. She differs from other teachers not so much in her principle, as in the relentless logic with which she applies what she considers fundamental. It is a strange distinction for a woman, that in dealing with children she should exhibit a degree of logical consistency far beyond that to which any educationist of the sterner sex has attained.60

Interpreting the importance of spontaneous activity in education, and its direct relationship to perfect liberty for the maximum development of the child, she explains her theory in these words:

We must not, therefore, set ourselves the educational problem of seeking means whereby to organize the internal personality of the child and develop his characteristics; the sole problem is that of offering the child the necessary nourishment.

It is by this means that the child develops an organized and complex activity which, while it responds to a primitive impulse, exercises the intelligence and develops qualities we consider lofty, and which we supposed were foreign to the nature of the young child, such as patience and perseverance in work, and in the moral order, obedience,

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gentleness, affection, politeness, serenity; qualities we are accustomed to divide into different categories, and as to which, hitherto, we have cherished the illusion that it was our task to develop them gradually by our direct interposition, although in practice we have never known by what means to do so successfully.

In order that the phenomenon should come to pass it is necessary that the spontaneous development of the child should be accorded \underline{perfect liberty}; that is to say, that its calm and peaceful expansion should not be disturbed by the intervention of an untimely and disturbing influence; just as the body of the new-born infant should be left in peace to assimilate its nourishment and grow properly.61

To offset the arguments against perfect liberty and its consequences, Dr. Montessori points out that the environment should be \underline{set} and should contain the means of \underline{self-education} so that perfect liberty is an important ingredient in the making of the \underline{whole} child. She emphasizes the fact that this method cannot be instituted at random—far from it, organization and study must be given to such a plan. "Many years of research are required, before the means really necessary for psychical development can be set forth."62

The training of the senses, together with its transfer to the elementary school subjects, is better referred to as the Montessori practice. She theorizes the object of this part of her work: The education of the senses has, as its aim, the refinement of the differential perception of stimuli by means of repeated exercises."63

Thus for Dr. Montessori the aim of education has a dual purpose—to

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62 Ibid., p. 72.
promote the psychological and physiological development of the child. First of all, the child must be given not only an opportunity to develop biologically to his maximum but also must be given the best possible environment for his maximum psychological development. Fynne is of the opinion that for both of these purposes the training of the senses is of the greatest importance:

Biologically considered, it must precede all superior intellectual development, and it should therefore receive our closest attention and be our chief care during the formative period of childhood— from three to seven. This is the period during which adapted and graduated sense stimuli produce their greatest developmental effects. Socially viewed, the training of the senses enables the pupil to enter more effectively into relations with his environment. His perceptive powers will become more exacting and discriminating in their operations and he will thus be more efficient in his life's work.64

To the foregoing principles and practice, Maria Montessori dedicated a lifetime of work and study.

And now that the educational philosophies of John Amos Comenius and Maria Montessori have been presented, a critical comparison follows in the ensuing chapter.

64 Fynne, p. 260.
CHAPTER V

COMENIUS AND MONTESSORI ON THEIR EDUCATIONAL
AIMS, METHODS AND CURRICULA

In the time of Comenius, education and religion went hand in hand. Comenius' aims of education were learning, virtue and piety. And although he advocated education for the welfare of the community, state, and even the world for better understanding, he ventured one step beyond in that he regarded the education of youth as a means of serving God and a preparation for eternity. He affirms this belief when he declares that:

The world is nothing but our nursery, our nurturing place, and our school, and there is, therefore, a place beyond, whither we shall be transferred when we are dismissed from the classes of this school and are sent to that university which is everlasting. Reason also makes this truth manifest, but it is more plainly visible in the divine oracles.¹

Thus the three main objectives of Comenian philosophy, learning, virtue and piety are, "nothing but a preparation for eternity, and exist in order that the soul, through the agency of the body, may prepare for itself those things which will be of use in the future life."²

²Ibid., p. 184.
So spoke Comenius, theologian and educator, whose hopes for the future were not only for the welfare of the community but for the world community as well and whose educational objectives were so emphatically and explicitly embraced by theology when he deemed it necessary that all learning be to the glory of God.

How did this objective contrast with that of Maria Montessori, a scientist and educator? Her aims in education were more science-oriented since she advocated scientific pedagogy based on anthropology, physiology, psychology and hygiene, although she was well aware of ultimate religious horizons. Yet hers was much more a scientific and secular age. Montessori attached the greatest importance of the scientific empirical approach in child development for this reason:

Today it is impossible to go deeply into any branch of medicine or philosophy or sociology without taking into account of the contribution brought by knowledge of child life. A parallel, but on a lesser scale, is the light thrown by embryology on physiology in general and on evolution. But the study of the child, not in his physical but in his psychological aspect, may have an infinitely wider influence, extending to all human questions. In the mind of the child we may perhaps find the key to progress, and who knows, the beginning of civilization.3

Because Dr. Montessori was a staunch advocate of the individual-development concept of education in this context it differed from that of Comenius. Again, her aims of education were more science-oriented and individualistic while those of Comenius were more theological and corporate.

However, there is a point of convergence in that both were interested in a more democratic type of education as opposed to the elitist cultural education, since both were involved with the education of the masses. Comenius wanted equal opportunity of education when he maintained, "not the children of the rich or of the powerful only, but of all alike, boys and girls, both noble and ignoble, rich and poor, in all cities and towns, villages and hamlets, should be sent to school."¹

Since environment plays an important role in education, the kinds of environment that Comenius and Montessori established in their schools must be brought into focus at this time.

Comenius looking at the school as the true forging-place of men described it thus:

I call a school that fulfills its function perfectly, one which is a true forging-place of men; where the minds of those who learn are illuminated by the light of wisdom, so as to penetrate with ease all that is manifest and all that is secret, where the emotions and the desires are brought into harmony with virtue, and where the heart is filled with and permeated by divine love, so that all who are handed over to Christian schools to be imbued with true wisdom may be taught to live a heavenly life on earth; in a world where all men are taught all things thoroughly.²

And he adds:

The school itself should be a pleasant place and attractive to the eye both within and without. Within, the room should be bright and clean, and its walls should be ornamented by pictures. These should be either portraits of celebrated men, geographical maps,

¹Keatinge, p. 218.
²Ibid., p. 228.
historical plans, or other ornaments. Without, there should be an open place to walk and to play (for this is absolutely necessary for children, as we shall show later), and there should also be a garden attached, into which the scholars may be allowed to go from time to time and where they may feast their eyes on trees, flowers, and plants. If this be done, boys and girls will, in all probability, go to school with as much pleasure as to fairs, where they always hope to see and hear something new.6

The environment must be conducive to study, with good rapport between teacher and pupil. Effective instruction by teachers will take place

... if they are gentle and persuasive, and do not alienate their pupils from them by roughness, but attract them by fatherly sentiments and words; if they commend the studies that they take in hand on account of their excellence, pleasantness, and ease; if they praise the industrious ones from time to time (to the little ones they may give apples, nuts, sugar, etc.); if they call the children to them, privately or in the class, and show them pictures of the things that they must learn, or explain to them optical or geometrical instruments, astronomical globes, and such-like things that are calculated to excite their admiration; or again, if they occasionally give the children some message to carry to their parents. In a word, if they treat their pupils kindly they will easily win their affections, and will bring it about that they prefer going to school to remaining at home.7

Learning should come naturally advises Comenius when he makes this analogy:

That this education shall be conducted without blows, rigour, or compulsion, as gently and as pleasantly as possible, and in the most natural manner (just as a living body increased in size without any straining or forcible extension of the limbs; since if food, care, and exercise are properly supplied, the body grows and becomes strong, gradually, imperceptibly, and of its own accord. In the same way I maintain that nutriment, care, and exercise, prudently supplied to the mind, lead it naturally to wisdom, virtue, and piety).8

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6Ibid., p. 283.

7Ibid., pp. 282-283.

8Ibid., p. 233.
How did this environment contrast with that of a Montessori school?

Montessori's school environment was on the other hand a set environment which strove to give children perfect liberty. With this in mind, the school had an ample playground and garden to which the children were free to come and go. The environment was scientifically planned in the sense that anthropology was used in the measurement of the furniture, physiology in the gymnastics, psychology in the observation and recording of data and in the pedagogy itself, and hygiene (washing and bathing for example) in creating and keeping a healthful school environment. To put it into as few words as possible according to Dr. Montessori, "the environment must meet the demand for the fundamental principle of scientific pedagogy--the liberty of the pupil for such liberty as shall permit a development of individual, spontaneous manifestations of the child's nature." Here the child was the most important factor of the "Children's Houses." The function of the teacher here was that of directress since self-education was one of its basic principles.

In the "Children's Houses" the old-time teacher, who wore herself out maintaining discipline of immobility, and who wasted her breath in loud and continual discourse, has disappeared.

For this teacher, we have substituted the didactic material, which contains within itself the control of errors and which makes auto-education possible to each child. The teacher has thus become a director of the spontaneous work of the children. She is not a passive force, a silent presence.

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10 Montessori, p. 371.
Such was not the case in classroom of Comenius where teacher is himself a more important factor. In fact, Comenius advises that the teacher stand on an elevated platform in order to keep all the scholars in his sight at once, and allow none of them to do anything but attend and look at him. It is obvious that the classroom atmosphere in the Comenian school was more formal than the informal setting of the Montessori school, the Montessori school being naturalistic in contrast to the Comenian authoritarian school. However, they both agreed on the value of the study of nature in education and as an intrinsic part of the school environment. On this most useful tool in education Comenius comments:

It is now quite clear that that order, which is the cominating principle in the art of teaching all things to all men, should be, and can be, borrowed from no other source but the operations of nature.

In the chapter entitled "Nature in Education," Maria Montessori lists five ways in which the child's psychophysical development can progress through the study of nature:

1. The child is initiated into observation of the phenomena of life.
2. The child is initiated into foresight by way of auto-education.
3. The children are initiated into the virtue of patience and into confident expectation, which is a form of faith and of philosophy of life.
4. The children are inspired with a feeling for nature, which is

11Great Didactic, p. 319.
12Ibid.
13Ibid., p. 252.
maintained by the marvels of creation—that creation which rewards with a generosity not measured by the labour of those who help it to evolve the life of its creatures.

5. The child follows the natural way of development of the human race.14

Thus, even though Comenius' school environment differed from that of Montessori there were some similarities as for example when they agree upon:

1. Nature as part of the whole school environment.
2. The importance of establishing good rapport between student and pupil.
3. The use of sensory teaching aids—globes, pictures, diagrams, puzzles.

There is a proverb in Bohemia, "A school without discipline is like a mill without water."15 Comenius admonishes his readers that if the water is withdrawn, the mill stops and likewise if the discipline in a school is withdrawn, the motive power is lost. He also draws this similarity, that if a field is never ploughed, it produces nothing but weeds. He feels that proper discipline is necessary but it must be free from personal elements such as anger or dislike and should be exercised with such frankness and sincerity of purpose, that even the pupils may feel that the action taken is for their good.16

14 Montessori, pp. 156-160.

15 Keatinge, p. 401.

16 Ibid.
No discipline of a severe kind should be exercised, continues Comenius; it is the teacher's responsibility to make the learning interesting so that no discipline problem exists. He tells the reader:

The very sun in the heavens gives us a lesson on this point. In the early spring, when plants are young and tender, he does not scorch them, but warms and invigorates them by slow degrees, not putting forth his full heat until they are full grown and bring forth fruit and seeds. The gardener proceeds on the same principle, and does not apply the pruning-knife to plants that are immature. In the same way, a musician does not strike his lyre a blow with his fist or with a stick, nor does he throw it against the wall, because it produces a discordant sound; but, setting to work on scientific principles, he tunes it and gets it into order. Just such a skilful and sympathetic treatment is necessary to instil a love of learning into the minds of our pupils, and any other procedure will only convert their idleness into antipathy, and their lack of interest into downright stupidity.17

"The training of character can be accomplished by good example, by gentle words, and by taking a sincere and undisguised interest in the pupils," instructs Comenius.

On the distaff side, Montessori tells us that, "the first dawning of real discipline comes through work. She elaborates on this statement when she explains that:

At a given moment it happens that a child becomes keenly interested in a piece of work, showing it by the expression of his face, by his intense attention, by his perseverance in the same exercise. That child has set foot upon the road leading to discipline.19

17Ibid., p. 402.
18Ibid., p. 405.
19Montessori, p. 350.
Dr. Montessori theorizes that to act in obedience to the hidden precepts of nature—that is rest; and in this special case, since man is meant to be an intelligent creature, the more intelligent his acts are, the more he finds repose in them. Thus when a child acts in a disorderly manner, his nervous system is under great strain; while on the other hand his nervous energy is positively increased and multiplied by intelligent actions which give him real satisfaction.

True discipline comes from within. Busy minds make busy hands emphasizes Montessori. The children conquer any breach of discipline through independence and work. Thus discipline must come through liberty and liberty as activity.

"We call an individual disciplined when he is master of himself, and can, therefore, regulate his own conduct when it shall be necessary to follow some rule of life. 20

In the Montessori school, the discipline is self-imposed and comes from within. In the Comenian school, the discipline is super-imposed by authority. The schoolmaster in the Comenian school sits on an elevated platform to see that the room remains orderly. In the Montessori school, the children are free to do what their individual impulses tell them. Thoughtfulness and courtesy prevail, while the interest in the didactic materials keeps them occupied in meaningful experiences.

Although Comenius and Montessori differ in their aims, environment, and

20Ibid., p. 86.
discipline, they concur more frequently in some aspects of their curricula and methodology.

Comenius ideally describes the four types of school with their corresponding curricula that were to continue from infancy through maturity, namely: the Mother-School, the Vernacular-School, the Latin-School and the University.

The Mother-School, which should cover the first six years of the child's life, should be the foundation of the learning that is to follow, and hence:

He is to be given simple lessons in objects, taught to know stones, plants, and animals; the name and uses of the members of his body; to distinguish light and darkness and colors; the geography of the cradle, the room, the farm, the street, and the field; training in moderation, purity, and obedience, and taught to say the Lord's prayer. In the first school, the mother is to be the teacher.21

A Mother-School should exist in every house and should be the preparation for more formal learning. Comenius elaborates on the didactics:

In the Mother-School the external senses should be exercised and taught to distinguish the objects that surround them. Our faculties are best developed in the following manner. The objects should first be placed before the organs of sense on which they act. Then the internal senses should acquire the habit of expressing in turn the images that result from the external sensation, both internally by means of the faculty of recollection, and externally with the hand and tongue. At this stage the mind can begin to operate, and, by the processes of exact thought, can compare and estimate all objects of knowledge.22

The tool of learning in the Mother-School is the picture-book which he


22Keatinge, p. 409.
advises "should be put straight into the child's hands." 

At this age, instruction should mainly be carried on through the medium of sense-perception, and, as sight is the chief test of the senses, our object will be attained if we give the children pictures of the most important objects in physics, optics, astronomy, geometry, etc., and these may be arranged in the order of the subjects of knowledge that we have just sketched. In this book should be depicted mountains, valleys, trees, birds, fishes, horses, oxen, sheep, and men of varied age and height.24

The picture-book that Comenius makes reference to is his own Orbis Pictus, which he assures the reader will benefit children in the following manner: (1) assist objects to make an impression on the mind, (2) accustom the little ones to the idea that pleasure is to be derived from books, and (3) aid them in learning to read.25

The Vernacular-School which children should attend from the years six to twelve, should be taught in the mother tongue. The curriculum should be such that the children will learn to read, to write, to reckon as far as ordinary life will require; to measure; to sing common melodies by rote; the catechism; the Bible; a very general knowledge of history, especially of the creation, the fall of man and the redemption; a beginning of cosmography, and a knowledge of trades and occupations.26

The years from twelve to eighteen should be spent in the Latin School during which time, the curriculum should include Latin, Hebrew and Greek, and

23 Ibid., p. 416.

24 Ibid., pp. 416-417.

25 Ibid., p. 417.

26 Monroe, p. x.
also the study of physics, mathematics, and rhetoric.

And finally, the University, "where every department of knowledge shall be taught by men, learned each in his own department, who unite together to promote learning and make new discoveries." 27 writes Comenius, before he goes on to explain how these four schools are to function:

These different schools are not to deal with different subjects, but should treat the same subject in different ways, giving instruction in all that can produce true men, true Christians, and true scholars; throughout graduating the instruction to the age of the pupil and the knowledge he already possesses. 28

Therefore, on this premise, Comenius graduated the instruction of Latin to the age of the pupil, when he authored his Latin textbooks, for he stresses: "Gradation of this kind is the only true principle." 29

| The first          | babbling inheritance | indistinctly |
| The second        | ripening boyhood     | correctly    |
| age is            | in which we learn    |              |
| The third         | maturer youth        | elegantly    |
| The fourth        | vigorous manhood     | forcibly     |

(i) The Vestibulum.
(ii) The Janua.
(iii) The Palatium.
(iv) The Thesaurus.

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27 Ibid.

28 Keatinge, p. 408.

29 Ibid., p. 360.
human nature rejoices in doing, everything should be learned through its own praxis. The utility and bearing of what is learned should be made manifest. Teaching should be tempered with an agreeable variety, and the playful element admitted. The rivalry and emulation of free games should be encouraged in lessons: *Quidquid in ludo literatio, lusus ingenii sit.*

The leading principle here is that we teach the young solid truth, and what will be of solid use, avoiding frivolous things, and indeed everything the truth and utility of which are not patent. Let our examples be very select, placing the thing to be learned distinctly before the eyes, so that every part of it be seen; let the rules be brief, clear; let exercises be appended sufficient in number to bring the example and rule clearly out, as without these a vague leads to vague and uncertain imitation. Let the first foundations be solidly laid; the beginnings of things are the most important; they should be taught slowly and accurately . . . . Bring all the senses into requisition wherever possible. Above all, the examples and rules being given give continual practice. Let repetitions and examinations be constant. 31

The foregoing passage was cited because it crystallizes many of Comenius' fundamental and cogent ideas in pedagogy.

Comenius informs his reader that "Didactics is the art of good teaching and to teach skilfully is to know reliable methods of good teaching and to adhere to them so as to promote knowledge of things rapidly, agreeably, and thoroughly." 32

For as long as Comenius could recall, there was social, political and religious unrest in the world in which he lived. Comenius' goal in life was social regeneration which he believed could be accomplished through one medium only--education. He clung desperately to the belief that through

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31 As quoted in S. S. Laurie, *John Amos Comenius* (Syracuse, New York, 1892) pp. 167-168.

learning, he could bring about a spirit of brotherly love and harmony into the world. The following passage illustrates his fervor and utter devotion to his conviction that he must serve God and the welfare of the world through education:

In the sight of God I protest that it is not by any overweening confidence in myself, or by a desire for fame or for personal advantage, that I am impelled to advertise these ideas of mine. It is the love of God and the wish to improve the condition of humanity that goad me on, and will not suffer me to keep silence when my instinct tells me what should be done. Therefore, if any oppose my efforts, and hinder the realization of my ideas instead of aiding it, let him be assured that he is waging war, not against me, but against God, against his own conscience, and against nature, whose will it is that what is for the common good be given over for the use of all men.33

In order to bring about this social regeneration, by means of education for all men in a one-class society Comenius pleads:

Do not, therefore, withhold wisdom and instruction from the Christian people, but rather say with Moses: 'Would God that all Lord's peoples were prophets!' (Num. xl. 29). The reformation of the Church and of the state is comprised in the proper instruction of the young; and shall we, who know this, stand idle, while others put their hand to work.34

Comenius, a leading exponent of Sense-Realism, opposed the prevailing Humanism and set forth his plans of transforming the schools to include classes of society. So opposed was Comenius to Humanism that he showed a distrust and disdain of the ancient classical writers:

Even the heathen philosophers saw that a harmony of morals was necessary for man, although, being ignorant of that other light granted by heaven, which is the most certain guide to eternal


34 Ibid., p. 451.
life, they set up these sparks as torches; a vain endeavour. Thus Cicero says: 'The seeds of virtue are sown in our dispositions, and, if they were allowed to develop, nature herself would lead us to the life of the blest.' This goes rather too far. Comenius, therefore, tolerated the classical writers and philosophers for only their contributions to Greek and Latin.

Comenius' triad of aims, knowledge, virtue and piety came about through his dogma that if all men have knowledge, they will become virtuous, and pious, and hence all the ills of a sick world will be remedied. By knowledge, Comenius meant man's knowledge of God, of nature, and of his relationship to the world:

From this it follows that man is naturally required to be: (1) acquainted with all things; (2) endowed with power over all things and over himself; (3) to refer himself and all things to God, the source of all.

Thus in his teaching and his method, the leading characteristic is his Realism, for Comenius rests his method on this Aristotelian maxim, Nihil est in intellectu quod non prius fuerit in sensu. He reveals his affinity for Sense-Realism when in his didactics he advises:

That, as far as is possible, instruction should be given through the senses, that it may be retained in the memory with less effort.

For example, the sense of hearing should always be conjoined with that of sight, and the tongue should be trained in combination with the hand. The subjects that are taught should not merely be taught orally, and thus appeal to the ear alone, but should be pictorially illustrated, and thus develop the imagination by the help of the eye. Again, the pupils should learn to speak with their mouths and at the same time to express what they say with their hands, that no


36Ibid., p. 189.
study may be proceeded with before what has already been learned, is thoroughly impressed on the eyes, the ears, the understanding and the memory. With this object, it is desirable to represent pictorially, on the walls of the class-room, everything that is treated in the class, by putting up either precepts and rules or pictures and diagrams illustrative of the subjects taught. If this be done, it is incredible how much it assists a teacher to impress his instruction on the pupils' minds.37

Although Comenius' writings are deeply influenced by his religious doctrines, he did not exclude the more scientific approach to education gleaned from the influence of Bacon. Thus his Sense-Realism combined with Bacon's theory of induction served to form the basis of his method.

In view of the particular function of Comenius as an educator it is difficult to discover or estimate how far he himself appreciated, or understood, inductive empirical method. On the other hand, he shared Bacon's distrust of the ability of the human intellect to attain knowledge unaided, and he went much further than Bacon in considering the details of various ways of collecting and disseminating knowledge, even at the lowest stages and with the humblest pupils. There is no doubt that the principles of his teaching method are based on Bacon's generalizations—for instance, Bacon says in Instauratio Magna, 'Upon the whole, men do not hitherto appear to be happily inclined and fitted for the sciences, either by their own industry, or the authority of authors. ... The only clue and method is to begin all anew and direct our steps in a certain order from the very first perception of the senses,' and it is very clear that Comenius truly endeavoured to ensure a beginning anew and a progress in a given order.38

However, belief in an equal balance of physical and mental processes yielded Comenius this very important method. Perhaps had he lived in the time of Montessori, he might have worked out his method on a purely psychological method rather than a pseudo-psychological one.

37Ibid., pp. 291-292.

From the simple to the complex, from the particular to the general, the concrete before the abstract, and all step by step, and even by insensible degrees—these were among his leading principles of method.39

These principles are more clearly illustrated in his teaching of languages. To acquire a thorough knowledge of Latin, for example, the method is threefold, namely, by Analysis, by Excerpt, and by Imitation.

Analysis

The Latin is translated into the vernacular. Then the Latin is analyzed for the meaning in terms of the words used, the phraseology, the arguments, the sentences, and finally the arrangement of the sentences.

Excerpt

Certain difficult words, phrases and opinions are transferred into a notebook.

Imitation

Three stages. The first consists of metaphrasis, secondly, amplification by insertion of additional Latin words, phrases or sentences and thirdly, imitation proper consists of writing in the style of the author. On this method Laurie comments:

When we come to consider Comenius' method as specially applied to language, we recognize its general truth, and the teachers of Europe and America will now be prepared to pay it the homage of theoretical approval at least.40

39Laurie, p. 255.

40Ibid., p. 256.
Comenius informs us that there are, moreover, three divinely appointed means of learning anything:

The senses, reason and communication. Through the senses we perceive whatever is present. Through reason we infer, from present tokens, whatever is not present to the senses. Through communication we come to know, from another's testimony, whatever is remote (and whatever we have not arrived at by the means of the senses or by means of reasoning).

At a summary of Comenius' writings on methodology, ten cardinal principles for effective teaching can be distilled:

1. Undertake to teaching children early when readiness takes place.
2. Teach everything first in the vernacular.
3. Use repetition, drill, and examination for thoroughness.
4. Make the instruction pleasant and meaningful.
5. Suit the material and instruction to the level and ability of the pupil.
6. Let learning come through doing.
7. Let learning proceed slowly step by step.
8. Employ as many of the senses as possible in teaching anything for better retention.
9. Use analysis, synthesis, and synorisis in the learning process.
10. Observe nature—the best teacher.

In rather hyperbolic admiration of the "Founder of Method" Laurie went so far as to say in his assessment:

Analytical Didactic, p. 128.
When we consider, then, that Comenius first formally and fully
developed educational method, that he introduced important re-
forms into the teaching of languages, that he introduced into
schools the study of Nature, that he advocated with intelligence,
and not on purely sentimental grounds, a milder discipline, we
are justified in assigning to him a high, if not the highest, place
among modern educational writers.42

Before Comenius' and Montessori's ideas on curricula and methodology can be
compared, a re-statement or exposition of her views in these two areas should
be presented in order to facilitate future discussion and reference.

Montessori defines her method briefly:

In the primary outline of our educational method there is a whole,
a basic line on which three essential factors stand out—the
environment, the teacher, and the apparatus, with a number of
special features that evolve little by little.43

To enlarge upon it, Montessori's system of education requires the careful
organization of the child's environment, the freedom of spontaneous activity,
and the provision of specially designed didactic material for his use so that
self-education and proper development can take place. Montessori first
observed children in as free an environment as she was able to arrange; then,
having made some salient observations, formulated certain fundamental
principles to be enforced in a set environment to ensure certain child
responses. On these observations and principles, she based her scientific
pedagogy. Rambusch makes a significant observation on this scientific
pedagogy:

42Laurie, p. 258.

43Montessori, The Secret of Childhood, p. 179.
The Montessori approach to learning (and it is an approach rather than a method) consists in the application of a certain set of principles regarding the child, his will and his need to learn. They are utilized by all those working with him. These principles in their "working out," their articulation, must take into account not only the culture in which the child finds himself but the expectations of that culture for the child as an adult.

Thus Rambusch, a leading American disciple of Montessori, prefers to think of Montessori's method as an approach rather than a method per se.

Analysis of Montessori's closely interwoven educational theory and practice shows that they are founded on six basic principles:

I. The conception of auto-education, based upon the biological principle of spontaneity.

II. The principle which demands the formulation of a scientific pedagogy, and exact science of childhood. This science she claims to have established.

III. The conception of the need for a prepared environment scientifically determined.

IV. The biological principle of liberty.

V. The principle which insists upon the supreme importance of the pupil's individuality.

VI. The principle of education through the senses and muscles.

The curriculum of the Montessori approach to learning is planned for the purpose of developing positive attitudes in the child to make learning significant and yet pleasant. Certain didactic materials in the curriculum are designed to develop the child's innate abilities; while the entire curriculum is geared toward development of a well rounded individual. 

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education of little children must be governed by this principle—to help the natural psychic and physical development of the child.  

The object of her curriculum is, therefore, twofold: biological and social. The major part of Montessori's practice is concerned with the education of the senses. As a result, the school curriculum and didactic materials are designed with this objective in mind. Montessori clarifies this further, "The technique of my method as it follows the guidance of the natural physiological and psychological development, may be divided into three parts:

1. Muscular or motor education
2. Sensory
3. Language

On the function which motor education serves, Montessori says, "We must understand by gymnastics and in general by muscular education, a series of exercises tending to aid the normal development of physiological movements such as walking, breathing, and speech." Through rhythmic movements and free gymnastics, the children are taught grace and they also develop physical fitness and good posture. Free gymnastics, those without apparatus, are divided into two classes: first, directed and required exercises, as for

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46 The Montessori Method, p. 245.


example, marching to develop poise; and secondly, free games such as tag and "hide and go seek." By educational gymnastics are those activities which form a part of the school work as, for instance, gardening and manual work. Respiratory gymnastics include teaching the child to breathe properly for health and good speech habits.49

On the importance of sensory education Montessori declares, "The education of the senses has as its aim, the refinement of the differential perception of stimuli by means of repeated exercises." 50

The program for the training of the senses includes the regular graded use of didactic apparatus through which children gain skills of manipulation and judgment through the senses, since physical and intellectual development are associated throughout. Montessori extols the value of this phase of the school curriculum:

The sense exercises constitute a species of auto-education which if these exercises be many times repeated, leads to a perfecting of the child's psychosensory processes. 51

In sensory education, Montessori develops through her didactic materials, general sensibility, the tactile, thermic, baric and stereognostic senses. To develop such keen perception in children, she recommends that:

"One should proceed from the few stimuli strongly contrasting, to many stimuli in gradual differentiation always more fine and imperceptible." 52

49 Ibid., pp. 144-147.
50 Ibid., p. 173.
51 Ibid., p. 224.
52 Ibid., p. 186.
In the approach to developing language, the refinement of meaning of words, of pronunciation, and of diction is stressed. The child is encouraged to express himself clearly, concisely, and intelligently. "Through language is sharpened his observation of things in the world about him and even in the study of nature itself, which is also of great consequence in the course of study."

The curriculum includes the teaching of reading and writing through the use of the special didactic material. In her system, learning to write is simultaneous with reading in contrast to the more common current system in which reading precedes writing. In the preparation for writing, the child draws around geometric forms with specially designed insets, with a colored pencil so that he learns size and form and develops the small muscles of his fingers for writing. By filling in the outline with parallel lines, he develops the basic muscular skill of writing.

In teaching writing, sandpaper letters are mounted on cards. The vowels are cut from light-coloured sandpaper and are mounted upon light blue cards; the sandpaper consonants are mounted upon pink cards. The letters are cut in clear manuscript form. In the teaching of the alphabet, the vowels are learned first and then the consonants, by pronouncing the sound of the letter, not the name. The actual process of learning to write consists of three steps:

1. The lessons proceed on the basis of associating the visual and muscular-tactile sensation with the sound of the letter. The directress places a letter on the table before the child and

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53 Ibid., pp. 156-161.
as she does so, she sounds the letter. She traces the sandpaper letter correctly in the sense of writing and the child imitates her. The teacher then sounds the letter again. When the child has come to know all the letters by tracing them with his index and middle finger, he is no longer employing just visual sensation but tactile sensation, and muscular sensation as well. Montessori comments:

There develop, contemporaneously, three sensations when the directress shows the letter to the child and has him trace it; the visual sensation, the tactile sensation, and the muscular sensation. In this way the image of the graphic sign is fixed in a much shorter space of time than when it was, according to ordinary methods acquired only through visual image.54

2. In the second stage, perception results when the child is able to recognize the letters which the directress asks him to identify. Then the child selects letters and sounds them as he again traces them.

3. The third stage is called Language. The directress pronounces only the sound of a consonant and as soon as she has done so unites it with a vowel, and the child pronounces the syllable or short word thus formed, she alternates the exercise by the use of different consonants. Then the child repeats the words after her. Then some time later, the child on his own initiative, forms from a movable alphabet, words of his own

54 Ibid., pp. 276-277.
making. By the sensory method the child learns two basic skills side by side. The child has learned to read through the learning process of writing by the application of this method.\

In Montessori's own explanation of this process she states:

We have, in addition begun the teaching of reading at the same time that we have been teaching writing. When we present a letter to the child and enunciate its sound, he fixes the image of this letter by means of the visual sense, and also by means of the muscular-tactile sense. He associated the sound with its relative sign; that is he relates the sound to the graphic sign. But when he sees and recognizes he reads; and when he traces, he writes.\

In her own scientific method, Montessori believes as does Bruner:

"We begin with a hypothesis that any subject can be taught effectively in some intellectual honest form to any child at any stage of development. It is a bold hypothesis and an essential one in thinking about the nature of a curriculum. No evidence exists to contradict it; considerable evidence is being amassed that supports it."\

Thus an expose of teaching Latin in Comenius' school was presented as was the method for teaching writing and reading in the Montessori school. The writer's purpose was to show the many similarities involved in the two schools. Learning by doing, using as many of the five senses as possible in learning, the use of imitation and repetition for reinforcement, are some of the principles which Comenius and Montessori applied in their fundamental methodology.

55 For greater detail and explanation of this process, refer to Marie Montessori, The Montessori Method, Chapter XVI, p. 246-270.

56 Ibid., p. 281.

In the comparison of the two curricula, if the reader were to examine a daily lesson plan of a Comenian classroom, he would observe that religious education was a major subject in the daily program. In fact, in many of the schools of Comenius' time, religion itself was the raison d'être. Thus in the school of Comenius, who was a Protestant, a bishop and an educator, religion was the fourth R.

Montessori, on the other hand, was a Catholic, and therefore, she was neither a pragmatist nor a critical naturalist, yet she was a democrat, a scientist and an educator. As a democrat, she believed in individual liberty and as a scientist and educator, she aimed at scientific pedagogy. Therefore, if the reader were to examine the Case dei Bambini lesson plan, he would find that the use of the scientific didactic materials played an important part in the curriculum. Montessori has been termed a "spiritual realist" because of her attention to the "developmental needs of children" philosophy, and because of her emphasis on the practical experience in the real world, which are certainly not incompatible with her religious principles nor her democratic principles. In her system religious education consists of a religious development and preparation. In fact, she makes this point quite clear:

In order to grasp this idea one ought to know that the Montessori Method in the "Children's Houses," which prepares the children in the daily life

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58 Curtis and Boulwood, A Short History of Educational Ideas, p. 479.

of the classroom, by exercises which are, in themselves, quite independent of the religious education, but which seem to be a preparation for it. In fact, they aid in perfecting the child, in making him calm, obedient, attentive to his own movements, capable of silence and recollection. When this preparation has been made the child finds in the Church the means for its application which are attractive, varied, and deeply significative, and he receives as a result, a sense of dignity and satisfaction. Moreover, the very fact of performing for different purposes, acts, which, though similar, are capable of diverse application and significance constitutes already in itself another source of intellectual development.60

Religious education is one of the main objectives of the Comenian curriculum; whereas in the Montessori curriculum religious preparation is the objective. Montessori preferred to think of this preparation as "religious development." In the Casa dei Bambini prayers and grace at meals were also a part of the children's daily exercise.61

On class size Comenius prefers teaching large groups of children. In fact, he deems it necessary:

I maintain that it is not only possible for one teacher to teach several hundred scholars at once, but it is also essential; since for both the teachers and their pupils it is by far the most advantageous system.62

Comenius not only finds it advantageous but essential for proper motivation and challenge in learning and in teaching, too.

The larger number of pupils that he sees before him the greater the interest the teacher will take in his work. . . . To the scholars, in the same way, the presence of a number of companions will be

60 Montessori, The Child in the Church, pp. 7-8.

61 Ibid., p. 119.

62Great Didactic, p. 316.
productive not only of utility but also of enjoyment (for it gives pleasure to all to have companions in their labours); since they stimulate and assist one another.63

The schoolmaster, says Comenius, can effectively teach a large group,

If he never gives individual instruction, either privately out of school or publicly in school, but teaches all the pupils at one and the same time. He should, therefore, never step to any one scholar or allow any one of them to come to him separately, but should remain in his seat, where he can be seen and heard by all, just as the sun sends forth its rays over all things.64

And here is where Comenius employs his own method of analogy (rather humorously) in his manner of demonstration:

The scholars, on the other hand, must direct their ears, eyes, and thoughts towards him and attend everything that he tells them by word of mouth or explains by means of his hand or of diagrams. Thus with a single blow, not one but many flies are killed.65

As a note of explanation, in the seventeenth century, school teachers were few in number and classes out of necessity had to be large. Comenius, a dedicated teacher, believed that "to learn a thing is to teach it." He, therefore, appointed division officers from the better students to give the personal assistance to the poorer students where it was needed so that a "student teacher" would learn even more by teaching, a plan to which he readily prescribed:

If matters be arranged in the following manner, one teacher will easily be able to cope with a very large number of scholars. That is to say, if he divides the whole body into classes, groups

63Ibid., pp. 316-317.
64Ibid., p. 318.
65Ibid., p. 318.
of ten, for example, each of which should be controlled by one of higher rank, and so on.66

Comenius' system was intended for teaching large groups of children or collective teaching, while Montessori's was prepared for individual instruction or self-direction.

However, some questions have been levelled at the Montessori system on this very point. Some observers feel that there is lack of socialization in the Montessori system. Rambusch comes to the defense of the Montessori system on this point of socialization:

The motives for activity that are placed within the classroom provide opportunities for the children to act individually, to interact or to act as a group. It is no accident that play equipment in Russia is designed in such a way that it requires the combined strength of groups of children to manipulate it effectively. Group activity and group solidarity go hand in hand. Montessori's insistence on the rights of the individual child makes many Americans—who have never analyzed the importance that organized education accords to group responses—uneasy. There is much talk of individualization within the group in American schools. Yet, rarely has anyone queried either the advisability or the inevitability of children being instructed in bunches as opposed to being instructed alone. . . . That the fact that this emphasis on the group is often meaningless for the young child keeps many children out of school whose avowed aim is 'getting along.' That the child can come to the life of the group, in fact, recognizes the existence of the group largely through an awareness of himself—though this has been known for at least two generations—appears to be one of the better kept secrets of early childhood education.67

Her system seems to be contrary to common current educational thought, for as Rambusch sees it:

66Great Didactic, p. 318.
67Rambusch, p. 68.
It has become an American commonplace to say that the reason we send young children to school is for socialization. They learn how to get along with others, how to follow instructions; they learn how to walk in a line, how to paint, how to clean up—they learn all these things. There is a great deal of socialization in a Montessori class which one could call incidental socialization, being incidental insofar as it relates organically to, but does not replace, the importance of the child emergent as a self.  

However, Montessori is well aware of the need for children to interact and she does provide these opportunities:

... we must prepare man, who is among the living creatures and therefore belongs to nature, for social life, because social life being his own peculiar work, must also correspond to the manifestation of his natural activity.

One comes away with the feeling that a fine "group spirit" is co-existent although children work side by side rather than in groups. This is evidenced by their courtesy, helpfulness and kindness toward one another, which is not simply providential.

In the Montessori school, there is no pressure to learn; there is no feeling of competition between classmates as was the desired attribute in Comenius' typical classroom setting when he urged, "the pupils should transcribe portions of their printed books, and should compete with one another to see who can best remember the morning's lesson or who is most proficient in writing, or singing, or in counting." In the Montessori school, the important thing is that the child develop a love for learning through his own personal accomplishment. There is no better prize or award observes Rambush:

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68 Rambusch, p. 52.


70 Great Didactic, p. 424.
A child is not only motivated to perform; he is motivated to perform for a certain purpose. The child who performs because he enjoys doing so, because he is confident that his performance is adequate for his needs and that it will stand the test of scrutiny is the child who will ultimately be able to take his place in a culture where sheer force of numbers forces but the most competent to the bottom of the heap.71

Montessori likewise believed that learning to please oneself and for the sake of learning should never be replaced by inferior motives based on reward and punishment.

In a Comenian school a rigid syllabus is set forth for the students in and as a group. This is not the case in the Montessori school. There is some leeway in that the child's "inner sensibility" helps him to decide what activities to follow as he moves from one learning situation to another.

Standing comments:

It is clear that Montessori's idea is not the same as that of the whole class being led (or dragged) along en masse and willy-nilly, in the wake of an arbitrarily chosen 'project.' This becomes clear still when we are reminded that:
(1) The child must learn by his own activity.
(2) He must be granted a mental freedom to take what he needs; and
(3) He must not be questioned in his choice--since the 'teacher' should answer the mental needs of the child, not dictate them.72

To move into the character training area or the art of living a good life, in Comenius' school, moral training would stem from many sources, the teacher, the Scriptures, sermons and even parables. In the Montessorian school, moral training is derived from her spiritual realism. By proper example of kindness, love, and understanding, a foundational attitude develops upon

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71Rambusch, p. 38.
which is built good moral character. This is her positive pedagogy:

They are virtuous because they exercise patience in repeating their exercises, long-suffering in yielding to the commands and desires of others, good in rejoicing in the well-being of others without jealousy or rivalry; they live, doing good in joyousness of heart and in peace, and they are eminently, marvellously industrious. But they are not proud of such righteousness because they were not conscious of acquiring it as a moral superiority. They have set their feet in the path leading to righteousness, simply because it was the only way to attain true self-development and learning; and they enjoy with simple hearts the fruits of peace that are to be gathered along that path. 73

In this same vein, both agreed that only good literature should be read in their schools. Comenius has an entire chapter called "Pagan Books Removed From Schools" because Comenius felt very strongly that some literature can have a harmful influence on children.

If any pagan writers are to be countenanced, let them be Seneca, Epicetus, Plato and similar teachers of virtue and honesty; since in them comparatively little error and superstition are to be found. 74

Montessori did not encourage reading fairy tales, imaginary stories, or fables to the young child. It was her belief that for the young child, fairy tales and fantasy are out of touch with reality and, therefore, are not proper fare. Instead she was all for a real world, an objective world, a world of things, seen, felt and experienced rather than an unreal world of make believe. "By offering the child the story of the universe, we give him something a thousand times more wonderful and mysterious to grasp with his imagination, in a cosmic drama no fable can rival," 75 opines Montessori. Montessori believed,

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73 Montessori Method, p. 369.
74 Great Didactic, p. 397.
75 As quoted by E. M. Standing, p. 346.
however, that for the older child fairy tales might be acceptable as evidenced by the fact that Hans Christian Andersen's *Fairy Tales* are number one on her list of books for children.\(^7\)

The comparison and contrasts have thus far been delineated in the areas of aims, curricula, methods, environment, discipline, and moral training. Therefore, as this chapter comes to a close in order to move on to specific evaluations in critical summary and conclusions, a partial summation is necessary at this point.

John Amos Comenius facilitated the wider application of sense realism in the eighteenth and nineteenth centuries. Comenius tried to apply the methods of science, as he understood them, to educational theory, curriculum, and method. All instruction should be carefully graded and arranged to follow the order of nature as reflected in a child's development. Throughout all instruction, the understanding of the child should be approached through the media of the senses. All teaching should proceed from the simple to the complex, from the known to the unknown. Comenius urged teaching in the vernacular and the association of the names of things with objects, pictures, and representations of things. Through pansophism, would be accomplished social reform, by teaching all knowledge to all children.

Montessori stressed realistic methods of learning through sense experience. She emphasized freedom of the child and infused a spirit of respect for the child and his individuality. Her system of scientific

pedagogy enabled the child to pursue activities that interested and challenged him. The whole effort of teaching was to develop a love of learning in the child rather than requiring him to acquire knowledge through formal education.

Thus Montessori and Comenius blazed the trail for modern educational methods and outlook.
Although Comenius' style is cumbersome and repetitious, the freshness of his ideas remains. His idea of pansophism to cure the ills of the world by means of a universal language and ultimate universal understanding is but one example of his remarkable foresight. The importance of this idea was recognized already in his day by prominent writers, scientists and teachers. John Adolph Tassius, a celebrated professor of mathematics in Hamburg, wrote to Samuel Hartlib, a gentleman of scholarly interest, about Comenius' pansophic scheme, the *Prodromus*:

In all corners of Europe shall the study of pansophy and of the improved didactics be pursued with zeal. Had Comenius done nothing more than sown the seed of such motives into souls, every man must confess that he had done enough. 2

His idea of universal education was indeed centuries ahead. Not until recently has his idea come to fruition. Harold Taylor reports the success of a recent experiment in global education. 3 Twenty-four United Nations Countries each sent a student to the world college held on Long Island, which welcomed Communist, non-Communist, Western and Eastern, Jew and Arab, Christian and Moslem, colored and white, and cherished him because of the difference. The purpose of the college was to develop a new concept of the world and of education, and to act as a source of ideas and actions for the achievement of world understanding and a peaceful world order.

The results of the experiment exceeded the hope of the college, for they showed that although the problems of organization and finance for a full-

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2Ibid., p. 153.

fledged world college are enormously complicated, the idea is not only feasible but generates a kind of understanding never experienced before. Although the students were aware of their own culture in the perspective of a world society—which surprised even themselves—they began before long to think and speak in terms of 'our' point of view—the world point of view when referring to international issues. One student pointed out that here in the world college was a place to inquire, not to argue political issues, through scholarly analysis which was free of all political propaganda. This was particularly noticeable in the conventional ideological conflict of the East and West, for Taylor goes on to say:

The presence in the student body of young people who had been born and raised under Communist educational systems meant that the rest of the students were presented with a clear expression of the world as seen by the Communist countries. This was also true in reverse for the Communist students. They listened for the first time, in a completely open situation, to students and scholars educated in a system different from their own.4

The consensus of those present was that the experiment was very successful, for the implications for future programs of world education and for eventual development of a world university, was striking. Not only is a world college possible but also necessary for development of a curriculum based on world understanding of a world culture.

Certainly to be numbered as another great contribution was his effort to unite all Christians during a period of religious wars and denominational jealousy and strife. Comenius will be remembered by future generations as one of the early prophets of ecumenicity. This is no small distinction for the

4Tbid., p. 64.
age in which Comenius lived -- an era notorious for its acrimonious denomina-
tional strife. Now three hundred years later this dream of ecumenicity has
some possibilities of being realized by recent papal approaches; but Comenius
in his humble way, prayed for it to come about in his lifetime.

Not only are his religious ideals but also his democratic ideals are
being realized in that education is now free and compulsory almost throughout
the civilized world. Even Comenius' protest against the neglect to instruct
girls was well-taken, when he contended that mother becomes man's first
teacher. He could not justify this discrimination when he logicized:

No satisfactory reason can be given why the weaker sex ought to be entirely excluded from the study of Wisdom, whether treated in Latin or in the vernacular, for they are equally in the image of God, are equally participants in His grace and His future kingdom. They are endowed with minds quick and capable of wisdom, often beyond our own sex. . . . Why, therefore, should we admit them to the alphabet indeed, but afterwards drive them away from books? Do we fear their folly? The more we occupy their thoughts, so much less will the folly that arises from emptiness of mind find a place.5

Although it is a well-known fact that his accomplishments in educational endeavor were varied and many, still no summary would be complete without a critical analysis of his writings and educational thought as a result of this research. Hence, a critical evaluation follows:

1. In his aims of education, knowledge, virtue and piety, Comenius hopes that through learning, man will become knowledgeable.
Knowledge is too intellectualistic a term and although an ethic seems implied, knowledge is not so easily minted into virtue.

Wisdom, on the other hand, would have been better semantically, since it connotes power of discrimination, judgment and reasoning rather than the mere accumulation of facts.

2. Comenius was too opposed to humanistic education, which definitely has its place in the history and culture of the world. Laurie regretfully wrote:

   It might be urged in opposition to this view of the anti-Humanism of Comenius, that he contemplated the good style of Latin in the higher stages of instruction; true, but insofar as he did so, it was merely with a practical aim... the more effective and if need be, oratorical enforcement of moral and religious truth.6

3. The mere acquisition of the ordered facts of nature and man's relation to it was for Comenius the basis of purely intellectual instruction. If education is to take place it must follow the order of nature; choose a suitable time, observe readiness, proper order and suitability of materials, and others. It was Comenius' conviction that only through the imitation of nature could learning be achieved.7

Pedram's observations here seem especially relevant as he comments on Comenius' theory of nature as a guide to learning as opposed to John Dewey's interpretation:

   Comenius, realistic in his belief, could not escape the idea of reality in its pure naturalistic sense. Nature with its self-evident reality and universality was adequate for an explanation

6Ibid., p. 217.
7Ibid., p. 263.
of order in education. Unchangeability and universality of nature was an abiding factor and should constitute the frems of reference in our attempt to educate children. As Comenius expressed confidence in nature and its dependability, to Dewey on the contrary, nature progressively changes, hence leaving everything to nature is like trusting to the 'accidents of circumstance.'

4. His metaphysical connotations in the Great Didactic seem to overshadow its earthy significance. Furthermore, on the flagrant use of analogy and oratory in this work the writer agrees with Spinka that:

The modern reader may be left merely bored by Comenius' host of parables and parallels; he is certainly left unconvinced by this arbitrary and often fanciful method of exposition and proof, because fashions in thinking have changed and authority has shifted to other manipulations of fact and fancy. Many seventeenth century readers, however, were receptive to this sort of argument and considered it with utmost seriousness. The strict logicians of course insisted on the old rule, 'Similia nihil probant'; but Comenius, who termed his method 'symbolic logic' countered with 'Similia plus quam probant' for he believed that argument from similarity excels mere logical proof.

However, one must take into consideration that Comenius wrote the Didactica Magna in 1628, some three hundred and thirty-six years ago and that rhetorical and logical style have changed.

5. In regard to his pansophic aspirations, this must be said in defense of his theologic--scientific assumptions: The time seemed right

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9 Spinka, p. 12.
and the idea plausible in the period of Francis Bacon and Thomas Browne. However, valiant as this effort was, the preoccupation with this monumental program caused Comenius to have a conflict of interests. The imaginative and inventive qualities of his earlier works for which he became renowned, seem to have been lost in his later works because Comenius became ensnared in his own planning of pansophism. His later works lack the vigor, the penetrating thought, and the vision of discovery.  

6. Comenius is idealistic to the point that at times his writings become unrealistic. Unfortunately, many of his educational writings were far too Utopian and not attuned to reality. The master mind of Comenius attempted to fashion the master key of universal education, or to create the art of teaching all things to all men. Like all the realists he was an optimist, and his Great Didactic was an unconscious utopia, although an inspiring one.

7. His ambivalence of view in teaching from dependence on reflection and reason, to dependence on the senses and empirical observation leads to difficulties.

8. Comenius was not consistent in his concept of the mind as soft wax. Again analogy may cause more problems than it solves. On the basis of Comenius' sensory learning theory, sensation creates knowledge, and the mind is a passive factor on which these sense impressions are made— as if on soft wax. A dual interpretation of minds can

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10 Ibid., p. 13.

be seen when later he maintains that not all things are to be brought to the mind from the external world, but according to the innate faculty theory, from the internal world, since the seeds of knowledge are already implanted in the mind, waiting to be brought out. According to Comenius:

It is not necessary, therefore, that anything be brought to a man from without, but only that which he possesses rolled up within himself to be unfolded and disclosed, and that stress be laid on each separate element.\textsuperscript{12}

9. In Comenius’ excessive use of analogy in offering proof, he commits fallacies by his Baconian insistence on the need for induction in scientific studies. In regard to Bacon and induction, Comenius himself wrote this commentary:

We need standards to which we may bring things and dogmas concerning them, so that necessary truths may be readily separated from contingent, useful from useless, true from false. Such a standard the illustrious Veralum seems to have discovered for scrutinizing Nature, a certain ingenious induction, which is in truth an open road by which to penetrate into the hidden things of Nature. But this induction demands the incessant industry of many men and ages and seems so laborious, and keeps certainty so long in suspense, that notables as the invention is, it is contemned by many as useless. And indeed it brings small help to me in building pansophia, because (as I have said) it is addressed solely to the revelation of Nature’s secrets, whilst I look to the whole Scheme of Things (rerun universitas). (Op. Did. Omn. Part i, Col. 432).\textsuperscript{13}

On this issue, Adamson offers this explanation of the deductiveness of the Great Didactic:

\textsuperscript{12}Keatinge, p. 194.

\textsuperscript{13}Refer to John William Adamson, Pioneers of Modern Education, 1600-1700 (Cambridge, 1905), p. 51.
In conception and in execution, Comenius' book (Great Didactic) is deductive, and, persistent advocate of induction in the pursuit of knowledge as Bacon was, he himself preferred, as the Novum Organum shows, to develop his own theses in that deductive manner which was the more familiar logical instrument.14

Thus in teaching science, Comenius advocated the inductive method but in his own writings, he was deductive.

There is no intention here to minimize the achievements of a great educator but rather the point is to keep them in perspective. Nevertheless in spite of some gaps in his reasoning, he was a giant among men.

In her own unique way, Montessori also stands out. As a physician, Montessori had been influenced in her own education by the discipline of science to a greater degree than most educators of her time or prior to it. Her study of science and her experience in using the scientific methods in medical college significantly affected her approach to educational philosophy and methodology. She must be commended for her determination to improve education by the application of scientific methods to its advancement. She was in the forefront of those who encouraged, indeed expected teachers to develop a scientific attitude toward their profession. As previously pointed out in this study, the Montessori method is itself essentially an expression of her own scientific background.

Through the explosion in research, science has advanced knowledge far beyond what it was in Montessori's day. Educators since her time have applied scientific methods to the study of education and to teaching techniques. As a result, it is known that her actual techniques were not always sound. A

14 Ibid., pp. 49-51.
critical analysis of her scientific pedagogy is necessary, therefore, at this point.

1. An apparent inconsistency between freedom and self-expression exists in the Montessori system for self-expression should have free reign in a free environment. Montessori's didactic apparatus, however, is restrictive. The limited series of precise activities does not relate to social interests. Play is fundamental to child development, but playing with the apparatus is forbidden in the Montessori system.

On the other hand, the foregoing criticism is partially countered by the "practical life" activities provided by Montessori. Children like to play, but they also like to participate in real life. Such opportunities certainly help the child develop to his full potential.

2. Ideally in the Montessori system, the child teaches himself through use of didactic apparatus. When a child learns through experience, without instruction from the teacher, the knowledge he acquires is truly his own. In application, however, the Montessori apparatus in its narrow range of mechanical manipulation restricts opportunities for self-education which, to be really effective, should be filled with many and various opportunities. It is questionable whether a restricted program for auto-education will result in adequate transfer of knowledge and training. Actually much auto-education occurs in real life situations, and the Montessori system would be enriched if auto-education were less confined to restricted exercises with didactic apparatus.

3. Dr. Montessori was convinced that at birth each child is already endowed with the potentials of what he could become. She likewise firmly
believed that education should be scientifically designed and managed to make
certain that his potential qualities would guide their own full realization.
The danger in this philosophy is that it is open to extremes, such as
Rousseau's rejection of institutional life. Montessori's doctrine suggests
rejection or at least depreciation of man's long-established solutions to
social problems. Her basic tenet tends to overlook or underestimate the
importance and value of a man's adaptation to his ever-changing environment.

4. Dr. Montessori planned an eight to ten hour school day partly
because her tenement school in Rome cared for the children of the poor for
most of the day as an assistance to the parents. Within such a long day, she
was not limited to short periods of instruction which were standard in her
day. It was possible, therefore, to let children take as much time as they
wished in doing what they wanted to do. They could continue with an activity
they enjoyed instead of being frustrated by the "period" schedule.

In addition, this long day and the needs of the children gave her an
opportunity to include practical life exercises. In her school children
learned how to care for their bodies and their clothes. Such activities as
washing hands, combing hair, brushing and rinsing teeth, keeping the school
room in order, and serving lunch were an integral part of the training given
to her pupils.

Such practical life exercises gave the children knowledge and skill they
probably would not have received in their slum homes. In addition, the
exercises had an additional value in that they stressed learning by doing.
Obviously, many of the exercises would not be needed or wanted in school
attended by children of wealthy parents. They would need to be adapted to the
locality served by a school. The value of gaining self-reliance and developing intelligence by attempting to meet one's needs should be recognized. Montessori long ago understood the importance of the school as a social institution that should use real life problems in its teaching content and technique and that it should adapt its program and methods to the area where it is located.

In spite of some of the shortcomings of her method, she was a far-sighted innovator in her insistence that traditional educational philosophies and methods needed considerable revision in the light of science and of scientific study of teaching procedures. Montessori deserves recognition for her pioneering attempt to establish educational methods on a scientific basis in the period of time in which she lived. In looking at the present and future, what do present trends indicate for the success of the Montessori school?

Some forty years after the rise and decline of the Montessori movement in the United States, it reappeared when Nancy McCormick Rambusch opened her "pure Montessori" school in Greenwich, Connecticut in 1958. Since then, schools have opened all over the United States. Some are "pure Montessori" schools while others are deviations, some are denominational; others are non-denominational. A recent survey of thirty-eight Montessori schools showed that thirteen are Catholic, one is Presbyterian, and the rest are non-denominational. That Montessori schools are definitely on the increase is demonstrated by the fact that since 1958, over one hundred Montessori schools have opened all over the United States. According to the American Montessori Society, about thirty were opened this fall and another forty are in the
planning stage.

As various writers have indicated, modernizing and updating of Montessori is needed to take into account the scientific development in education and child study, which have taken place since the first main impacts before World War I of Montessori's writings.

Montessori schools of today are usually for the culturally advantaged children rather than for those for whom the education and methods were originally started in the slum area of Rome, although schools in just such areas are being founded here in the United States.15

Thus Montessori's fame has been established, for she founded an educational theory and technique directly upon the laws and facts of child life as revealed by empirical science. Her theory is that there is in each child a definite, active, purposive drive to engage in activities which have a developmental value. These activities are either actions upon or reactions to the environment. The environment is secondary in importance -- it can help or it can hinder, but it can never create -- only life makes itself manifest -- life creates. In sum, it is on this theory of innate development in a harmonious environment for learning and development that she builds or structures her teaching. The child is a body which grows, and a soul which develops; these two forms, have one eternal font, life itself.

In order to clarify and crystallize the comparison of the philosophy of Comenius and Montessori more specifically the conclusions drawn must be

presented in the light of Comenius' seventeenth century sectarian school and of
Montessori's Casa dei Bambini. Comenius's school had its origin in the
Moravian Church. Clauser documents this further:

Two significant educational developments in the seventeenth and
eighteenth centuries had their origins in the religious faith and
practice of the Moravian and Bohemian followers of John Hus. The
first was the Union of the leading pedagogical theories of the seven-
teenth century with religious tenets which were basic to the Ancient
Moravian Church. This was the contribution of John Amos Comenius,
bishop and educator.

The second educational development which had its origin in the
religious faith of the early Moravians was the formation of
sectarian school systems which were organized in Europe, in North
America and in other parts of the world. This was the contribution
of the Renewed Moravian Church.16

Comenius' school was organized for a religious purpose as a means of serving
the people of the Moravian church.

Montessori's school, on the other hand, was created out of a child
welfare need in the San Lorenzo slum quarter of Rome, when the responsibility
of looking after the very young children of working parents was entrusted to
her. Here was the beginning of the Montessori school system. Coincidentally
neither Comenius nor Montessori had trained originally to teach. Comenius
studied for the ministry but when he was too young to be ordained, turned to
teaching as a profession; Montessori, who graduated from the University of
Rome as the first woman physician in Italy in 1896, turned to teaching as her
life's work when the need arose.

Both felt that reform in school was necessary and that particularly in

16Jerome Kachline Clauser, "Comenian Pedagogy in the Moravian School
State University, 1961).
methodology was reform important. Montessori observed the child more from the 
viewpoint of a scientist; Comenius, as a servant of God. Comenius' religious 
aims encompassed his basic teaching principles while Montessori's scientific 
observations gave her a key to basic educational principles. Although their 
basic aims differed, the ultimate objective was the same. Comenius' education 
of the young children was for a "preparation for eternity"; Montessori's 
actually was not so far removed in that she was a spiritual realist and 
strve for the ultimate development of the child—mentally, physically, 
socially, and of course, spiritually. Both endorsed a solid, basic curriculum— 
since both believed in practicality and reality in education. For example, 
Montessori included in her curriculum in addition to those subjects mentioned 
earlier, numeration, geometry (the observation of form), music and even basic 
science. Both Comenius and Montessori put emphasis on the teaching of music 
and gave prominence to it in their curricula.

Both advocated the education of the very young child as is borne out by 
the fact that Comenius devoted much of his time and energy to this realization 
when he wrote the Orbic Pictus and A School for Infancy (Die Mutterschule) a 
handbook for parents on the education of the very young child. Montessori's 
interest in this endeavor is evidenced by her materials in which she 
ceouraged the education of the young child because she, too, realized great 
merit in this early training. In fact both adapted materials for very young 
children.

In the area of methodology, they concurred on the importance of the 
senses in learning and retention. They employed repetition, memory and 
imitation as a means of reinforcement of learning. They were in complete
agreement on the use of the association of words with objects and used analogy in their explanations. Both were sense-realistic and yet spiritually realistic, too, in their teaching and philosophy. They were proponents of the innate faculty theory since both firmly held to the theory that through proper education would come the unfolding of all that is good in man. Nature offered its guiding hand and principles for teaching, which they accepted wholeheartedly.

Although lacking a psychological background, Comenius in his perceptiveness recognized individual differences in children. Montessori arrived at this significant factor in education as a result of her medical training and working with deficient children. How they arrived at this important fact is not so noteworthy, however, as the fact that they both used this basic tenet as a starting-point of their pedagogy and in their materials to implement it.

It is evident from the presentation of the foregoing statements that they were very much in agreement rather than disagreement. Their differences were not as numerous as their similarities.

Although they were several centuries apart, had Comenius walked into the Casa dei Bambini, he would have approved of what he saw except that he would have been accustomed to an authoritarian classroom—a teacher-centered school rather than a child-centered one. He would have favored a classroom environment with a mild discipline rather than a free discipline, although he strove for self-control and self-direction even in his day. He would have employed dramatization as an aid in teaching. He would have been pleased with the emphasis on good literature and the exclusion of fairy tales for the very young child for he too recognized the merit of reading about nature rather
than fable. Auto-education would have intrigued him as would the apparatus itself; but believing profoundly in sensory learning, he would have been eager to know the results of this training of the senses which develops from the use of the didactic materials.

The idea that a child has complete freedom would have seemed incredible to Comenius since in his classroom the student remained passive most of the time, mainly, because of the large number of students and the fact that they were expected to listen to the lecture. He would have been impressed with the individual learning without the help of a teacher but with a silent directress present instead. He would have been awed by the determination to learn on the part of the children in activities of their own choosing. He would have approved of the scientific pedagogy because he was working toward that goal two centuries earlier.

Although their methodology was similar in many respects, the implementation was not always the same; Comenius' instruction was teacher-directed, traditional seventeenth century classroom learning consisting of lecture, memorization, and recitation. Montessori's was more modern in scope, child-centered, with learning accomplished through self-education. Nevertheless, they were in close alliance in their philosophies for each believed firmly in:

I. A democratic and free educational system.

II. Early and systematic training of the very young child.

III. Discipline stemming from within, structured on good rapport and proper motivation.

IV. Observance and use of Nature in the education of children.

V. The importance of moral training in the school.

VI. The innate potentialities theory.
VII. The child as an individual, to be treated with dignity.

VIII. The importance of method in teaching and learning.

IX. The importance of the senses in effective learning and retention.

X. Learning through doing.

XI. Graded instruction and adaptation of materials to meet individual needs.

XII. Education as a science as far as possible within their different perspectives.

XIII. The recognition of individual differences.

XIV. An attractive and pleasant school atmosphere--conducive to good learning.

XV. The ultimate aim of education: the maximum development of the child.

Therefore, their educational philosophies were congruent to a considerable degree, yet also diverse.

Comenius and Montessori left their impress on education for future generations to come. Comenius' teachings were, an expression of the movement away from authority of the day to a spirit of freedom; Montessori's awareness of the child and his tremendous untapped potential, represent but one important example of their contribution. Comenius' proposal of a universal college to promote universal understanding has not been truly realized but man is already moving toward that universally beneficent end to make his far- visioned dream a reality. Thus their energies, dreams and philosophies were united when these two pioneers in education broke a trail for a more modern outlook on the education of children. Comenius called
his classroom the workshop of humanity; Montessori called hers, the laboratory for living.

As a final tribute to both Comenius and Montessori, the following quotation from Standing would be a most fitting comment on their discovery of the child:

This, in the realm of the human spirit, can be set over against the discovery of those terrible energies latent in the atom. And just as these physical energies are being used to prepare the armaments of war between nations, so should these newly-released spiritual energies be used to create the Armament of Peace. What a splendid hope for the future is the growth of these natural virtues in the child—precious preparation for those supernatural virtues that transform each individual into the likeness of Christ!

It is along this path that the nations of the world will progress most surely towards that harmony foretold by the prophet, when 'the wolf shall dwell with the lamb, and the leopard lie down with the kid, and the calf and the young lion and the fatling together—and a little child shall lead them.'

Standing, pp. 348-349.
APPENDIX A

AXIOMS OF THE ANALYTICAL DIDACTIC

1. General Didactics

I. There is no knowledge without an idea or original image.
II. There is no knowledge except through the transformation of ideas into images.
III. There is no knowledge without an instrument of representation or means of image-making.
IV. We do not learn what we already know.
V. We learn the unknown only through the known.
VI. We learn the unknown only by learning.
VII. A student must always beware of learning anything badly.
IX. A student can become proficient only by degrees.
X. Therefore, a student always needs someone to guide him, admonish him, and correct him.
XI. Where no one teaches, nothing is taught.
XII. Where no one learns, nothing is learned.
XIII. Where there is no instruction, there is no transplanting of knowledge.
XIV. Teacher and student are complemental; neither can be absent from the act of teaching.
XV. The bond between teacher and student is instruction, as it passes from one to the other.
XVI. A good teacher, a good student, and good instruction increase knowledge mightily.
XVII. A teacher should be competent to teach (a learned teacher).

XVIII. A teacher should be skillful in teaching (a capable teacher).

XIX. A teacher should be zealous in teaching (a teacher to whom indolence and distaste are unknown).

XX. You will teach nothing to one who is incapable of being taught.

XXI. You will find it difficult to teach one who is unripe for instruction.

XXII. You will teach in vain one who is uninterested, unless you first make him eager for learning.

XXIII. Aptitude, discernment, and diligence, if present together, make for remarkable progress.

XXIV. Lack of aptitude or discernment must be compensated for by diligence.

XXV. Where there is neither aptitude nor discernment nor diligence, teaching and learning prosper little or not at all.

XXVI. Where nothing is taught, there nothing is learned.

XXVII. Where teaching is confused, there learning is confused.

XXVIII. Where teaching is careless, there learning is careless.

XXIX. Do not undertake to teach one who is not ready to be taught.

XXX. Do not postpone the instruction of one who is ready to receive it.

XXXI. Do not undertake to give instruction unless it commends itself to the pupil.

XXXII. Do not undertake to instruct a pupil unless his appetite has been keenly whetted.

XXXIII. Do not undertake instruction unless the pupil is equipped for the task.

XXXIV. The student should work and the teacher should direct.

XXXV. Where there is nothing to imitate (i.e., a model), there is no imitation.

XXXVI. Where there is no guidance (i.e., precept), imitation is neither easy nor certain.
XXVII. Where there is no imitation (i.e., use, practice, exercises),
guidance for imitation and even models are useless.

XXXVIII. The task of the teacher is to present the model, explain it, and
show how to imitate it; the task of the student is to pay attention,
comprehend, and imitate.

XXXIX. Without examples, precepts, and exercises, nothing is taught or
learned unless it be incorrectly.

XL. All things are taught and learned through examples, precepts, and
exercises.

XLI. The exemplar should always come first, the precept should always
follow, and imitation should always be insisted upon.

XLII. We can best demonstrate how to do a thing by doing it.

XLIII. The virtue of a rule is that it be brief in words, clear in meaning,
and full of truth.

XLIV. Rules are more useful if we employ them in conjunction with a task
rather than apart from it, because in this way the student's errors
give us an opportunity to repeat the rules and insculcate them anew.

XLV. Teacher and student should be mutually attentive.

XLVI. The student should follow the teacher at every turn, and the teacher
should ever lead the way.

XLVII. Whenever the teacher sees the student deviating into error, he should
admonish and instruct the student to follow in his footsteps more heedfully.

XLVIII. All parts of instruction should be coherent.

XLIX. One topic should not be abandoned for another unless the first has
been mastered.

L. Later topics should be an occasion for the review of earlier ones.

LI. Without discipline one learns nothing or at least nothing correctly.

LII. Discipline should be constant, never slackening; it should always be
treated seriously, never in jest.

LIII. Discipline should never be harsh.

LIV. Discipline should be of various levels.
LV. The bad is learned more easily than the good.

LVI. To learn is easier than to unlearn.

LVII. It is (likewise) easier to teach than to unteach.

LVIII. Teach nothing that a pupil must unlearn.

LIX. If a pupil has acquired any wrong knowledge, he should unlearn it as soon as possible.

LX. Since all things are more difficult to unlearn than to learn, we should see to it that there is no need to unlearn anything; we can achieve this in no other way than by taking the precaution not to add bad things to our knowledge or not to learn good things badly.

LXI. We learn easy things more easily, difficult ones with greater difficulty.

LXII. In the mass of subjects to be learned, some are always easier than others.

LXIII. Therefore (in the mass of subjects to be learned) we should always begin with the easier and proceed to the more difficult.

LXIV. We must always begin with the few, the brief, the simple, the general, the near, the regular, and proceed gradually to the more numerous, the more extensive, the more complex, the more particular, the more remote, the more irregular.

LXV. The few before the many.

LXVI. The brief before the long.

LXVII. The simple before the complex.

LXVIII. The general before the particular.

LXIX. The nearer before the more remote.

LXX. The regular before the irregular (or the analogous before the anomalous).

LXXI. Whatever can be taught and learned in one procedure should never be subdivided.

LXXII. Whatever is numerous should be gathered into wholes; the larger wholes should be analyzed first, then the smaller ones.
LXXIII. Whatever is long should be broken up into well-defined parts, and each part should be taken up in due order.

LXXIV. Whatever is complex should be resolved into its elements, and these should be learned first (in practice they should be performed first).

LXXV. Individual members should be gathered into kinds, kinds into classes, and classes into a general class. Then, whatever is equally true of all members we may assert about the whole class; on the other hand, whatever differences arise among the various kinds we may indicate for each kind separately, until we come (if need be) to the individual members.

LXXVI. Whatever is remote must be approached by steps so carefully chosen that the last step is clearly related to the first by an uninterrupted connection.

LXXVII. Every anomaly should be referred to some analogy by way of subordination.

LXXVIII. To know a thing, we must understand it.

LXXIX. To esteem a thing, we must understand it and choose it.

LXXX. To accomplish a thing, we must understand it, choose it, and perform it.¹

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APPROVAL SHEET

The dissertation submitted by Irene Beatrice Lang has been read and approved by five members of the Department of Education.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the dissertation is now given final approval with reference to content, form, and mechanical accuracy.

The dissertation is therefore accepted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

Date

Signature of Adviser