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Study Outlines
of
Tyler's "Growth and Education"

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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston.

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

President Mirabeau B. Lamar.

STUDY OUTLINES OF TYLER'S "GROWTH AND EDUCATION"¹

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LESSON I, pp. 1-24

THE PHYSICAL FOUNDATION OF EDUCATION

1. There are two general classes of educational philosophers. One class, in some form or other, makes it the primary aim of education to prepare the child to meet the demands which society will make upon him, and to bring him into accord with the civilization about him. The other makes it the primary aim of education to give the child opportunity to develop from within outward his own natural powers, in the belief that man is still in the process of evolution and has in him better possibilities than our present civilization expresses.

(a) To which class of philosophers does Tyler belong? (Pp. 1-2.)

(b) Why would either of these classes of philosophers find it advisable to study the processes of development in children as a help in guiding education? (Pp. 21-24.)

2. (a) According to Tyler, what factors in our environment have changed sufficiently in the past century to demand readjustment on the part of the school in order to meet the new demands? (Pp. 3-10.)

(b) What changes in this community have brought new demands on education in the past generation?

(c) Show in what way your school is meeting these new demands, and in what way failing to meet them.

(d) What should be done now to enable this school to prepare children to meet the demands which life will soon make upon them?

(e) Explain the processes through which the sedentary life works injury to children and adults. (Pp. 10-13.)

3. (a) What are the physical sources of power in man. (Pp. 15-17.)

¹Growth and Education, by J. M. Tyler; Houghton Mifflin Co., New York, price \$1.50.

(b) How are these related to mental and moral power?

(c) What is your school and home doing to develop these sources of power? Examine the school and home from the following standpoints:

(1) Is the school building properly lighted to protect the eyes and nerves of the children and teacher? All light in the classroom should come from the left. No light should be in front of either children or teacher. The windows should extend to within six inches of the ceiling, should be grouped, and there should be between one-fourth and one-sixth as much window space as there is floor space in the room.

(2) Is the heat properly regulated? Far more injury is done in Texas by overheating than by underheating. Five-sixths of the cases of pneumonia studied in an Austin school were of children sitting directly exposed to the stoves. Not a single case of pneumonia occurred among the children in the central parts of the room. The temperature should be held automatically at about 68 degrees. It has been proved that teachers and janitors can not keep up with the temperature, but that an automatic machine can.

(3) Is the air kept properly moistened? When air is heated, it immediately becomes capable of absorbing more water. Saturated air at 30 degrees, when heated to 70 degrees, will take up four times the amount of water it contained at 30 degrees. Therefore, whenever air is heated for a building, moisture should be added to it. If this is not done, the air takes the moisture from the skin and mucous membranes of those in the room, thus producing irritation, and tending to produce headaches and cause catarrh.

(4) Is the building kept sanitary? Do the blackboards have a sanitary chalk rail? Is sweeping done by a vacuum cleaner, or is a sweeping compound used with a broom? Are floors smooth and properly oiled? Is an oiled dust cloth used? What is the condition of the toilet rooms? What is the arrangement for drinking water?

(5) Is proper exercise required and at the proper intervals?

(6) Are the lesson periods and the daily program so arranged for each age as not to strain the children by too constant study?

(7) In your home do you require proper hours of sleep?

(8) Do you feed your children a diet which provides for their daily needs, as follows: (a) Some starchy foods, always thoroughly cooked; (b) protein foods cooked at a low temperature so as not to be indigestible; (c) no foods fried in grease at a high temperature so as to render them indigestible; (d) some raw food and some green bulky vegetables and fruits that help to furnish needed mineral matter and keep the bowels active?

4. According to Tyler, what must a parent or teacher know before he can properly guide the education of a child? (Pp. 21-23.)

LESSON II, pp. 25-62

THE DEVELOPMENT OF THE RACE AND ITS BEARING
ON EDUCATION

1. (a) The muscular system stimulated the development of which of the organs in animals? How did it do this? (Pp. 25, 28, 43-44.)

(b) To what extent is this same thing true now in the development of each child?

(c) What suggestion does this offer to parents and teachers? Criticize our present school and home life in the light of this fact. (P. 39.)

2. What stage of animal life does each of the main groups of muscles in man represent? (P. 29.)

3. (a) For what use was the nervous system developed in the animal kingdom? (Pp. 29-31.)

(b) What two other sets of organs served constantly to stimulate the development of the nervous system? (Pp. 31-33.)

(c) What stimulates now the undeveloped brain and nervous system of the child to make its development?

(d) What does this suggest to parents? (P. 39.)

(e) What does this suggest to teachers? (P. 39.)

4. (a) What are the "fundamental" muscles and nerves, and when and why should they be developed? (Pp. 40-41; 45.) (Probably the terms "fundamental" and "accessory" are best defined by saying that those organs and parts that man has in common with the lower animals are termed "fundamental," such as trunk, leg and arm muscles, and the sense organs. Those which are peculiar to man, such as the delicate facial and finger muscles, and the reasoning power and refined feelings, are termed "accessory.")

(b) When was the intellect developed in the race, and what does Tyler believe that this suggests for education? (Pp. 45-48.)

5. (a) How do all animals begin their development and in what general order does development proceed?

(b) Name some provisional stages through which the chick and man alike pass.

(c) What purposes do the provisional stages of growth serve? (Pp. 49-56.)

(d) Name some provisional mental and provisional physical activities through which children pass during the first ten years of life, and state what permanent service is done by these temporary activities. (Pp. 49-56.)

6. (a) Through what three stages of growth do all organs pass and what should be done during each stage? (Pp. 56-57.)

(b) State three things that the school and three things that the home does that violate this principle of growth.

(c) Why is precocity dangerous? (Pp. 58-59.)

7. (a) What way, if not his own way, should your child follow? (P. 62.)

(b) When should we begin rather to direct nature than to follow it? Why so? (P. 59.)

8. (a) What does an interest on the part of the child mean?

(b) What is the effect of putting a study before a child too soon or too late? (P. 61.)

(c) What studies are given children in school too soon and what too late according to the above?

(d) How can the school remedy this? How can the home help?

LESSON III, pp. 63-114

IMPORTANT FACTS OF BODY DEVELOPMENT

No one but an expert should try to learn and carry in mind the numerous detailed facts about the growth of the body and its several organs given in chapters four to eight. It is, however, very desirable that every parent and teacher should read these chapters carefully to secure the background of detail necessary to make clear the general facts of growth discussed below, which may easily be held in memory.

1. What are the best criteria of health and vigor? (P. 63.) Is this true always? If not, how can these be determined more accurately?

2. Summarize the facts of growth in height and weight, and state what these suggest to us. (Pp. 67-68.)

3. State the general order in which the nervous system develops, and show how the higher association center can not develop till the lower motor and sensory centers are first developed. (Pp. 73-74.) Give cases in which this fact is overlooked in education: (1) in the home, (2) in the school, (3) in the church.

4. Do all parts of the brain get ready for exercise uniformly together and keep developing continuously? If not, what is our best way of judging when a certain part of the brain or nervous system is ready for stimulation and exercise? (P. 75.)

5. How do higher and lower parts of the nervous system help to exercise and build up each other? (Pp. 74-75.) What does this show that school and home life must have in them?

6. Why is the digestive apparatus so much larger in proportion in infancy and childhood than in mature years? (P. 81.)

7. What is the probable explanation of the great amount of food and oxygen required in childhood in proportion to size? (Pp. 86-87.)

8. What very notable change takes place about the pubertal period in the size of the heart and in the relation of the size of the heart to the size of the blood vessels? What would be the natural physical and mental effects of this change? (Pp. 82-83.)

9. What is the probable effect of the slackened growth of the lungs from 10 to 13, and what does it suggest to us? (P. 83.)

10. To what extent does ill health increase as we pass up the grades? (P. 98.) Are such records kept in your school that you can tell anything about the illness in the several grades each year? Make a study for one year and report the amount in each grade and compare with those given by Tyler.

11. What ought education to do for the body? (P. 106.)

12. If every child varies somewhat from the average and is a special problem in himself, what is the value in studying averages and learning about the general types and characteristics of children? (Pp. 107-108.)

13. What two things may save the children of weak parents from the weakness of their parents? (P. 111.)

14. What are the main characteristics of the four distinct periods of growth? (P. 111.)

LESSON IV, pp. 114-163

THE CHILD IN THE ELEMENTARY SCHOOL

1. Why has the infant less power of resisting cold than the adult? What criticism does this offer to our style of dress for little children? (P. 117.)

2. What are the facts as to advantages of breast-fed babies? What food elements do babies especially need and what additional ones do children need and why? (Pp. 119-122.)

3. What are the two other fundamental needs of children besides food? What are you doing about these? (Pp. 122-123.)

4. Name some of the ways in which nervous instability is produced or increased in children? Examine your home habits and school habits and see if you are not doing this. If so, how? (P. 128.)

5. State the general facts about the condition of the brain at the kindergarten age and see what parts of kindergarten and primary school life meet the needs of growth at the age and what do not. (Pp. 131-136.)

6. How do the sensory and motor activities of this age have any bearing upon the higher activities of intellectual association later on in life? (P. 137.)

7. How does the primary child at 8 to 10 differ from the kindergarten child? (Pp. 143-144.) What is the proper aim in education at this age? Does the school work meet the demands of his nature? If not, what does the school life need? (Pp. 140-148.)

8. If this be a period for building habits and attitudes of mind, how can the school accomplish much without the co-operation of the home? Let teachers and mothers each state definite ways in which the home can co-operate now.

LESSON V, pp. 162-178

THE PERIOD OF CHANGE

1. Show how the rapid growth just before puberty produces weakness. (Pp. 158-161.) What should we do about it?
2. How are the early period and this period related to the pubertal period? (P. 163.)
3. To what cause is the illness of pubescent girls due? (Pp. 164-165.) What can remedy this? Why? (Pp. 166-169.)
4. What do Miss Foster's measurements show? (Pp. 165-166.) What do Dr. Anderson's results show? (P. 167.) Is a little mathematics or chemistry worth a lifetime of backache or nervousness? Then what should parents and teachers do about it?
5. Is the picture of the home and school life of the young girl given on pages 168-174 true of your home and school? If so, what are you going to do about it?
6. Are the pubertal changes less decided for boys than for girls? Why are they not so hard on boys? (Pp. 177-178.)

LESSON VI, pp. 178-197

THE ADOLESCENT

1. What change in general blood pressure occurs, and in what areas of the brain is there growth especially during adolescence? (P. 180.)

2. How would these effect the following:

A. Emotional intensity.

B. Tendency to perform his own mental associations and resent others forming judgments for him about conduct and other things.

C. Feeling of self-confidence and desire to run things.

3. Adolescence is said by psychologists to be a period in which the thousands of hereditary tendencies of the youth are struggling to get expression, and that first one and then the other gets the dominance. By these varied efforts at expression the youth or maiden learns himself or herself and gains opportunity to find out some of the best as well as the worst possibilities of his or her nature. In the light of these facts and of other facts brought out in Chapter 13, consider the following:

A. Can we expect the adolescent not to be fickle, unstable, and inconsistent?

B. Can we expect the adolescent not to be at times self-confident and self-assertive and at others, diffident and shrinking; at times communicative and confidential, at others non-communicative and sulky?

C. Should it not be the business of the home and school to help the adolescent try out his various tendencies in such ways that he can learn the danger and sorrow of certain tendencies and the joys and splendid possibilities of others?

D. To what extent and how do you help your adolescents to try themselves out and make it sure that they will come out with the right attitude toward the trivial or immoral and toward the noble and beautiful of which they are capable? In what ways does the home fail most in this? How could it make an improvement?

E. To what extent and how does your high school help the adolescents to try out their welling possibilities and to fix the good ones? In what ways does the school fail most in this? (1) What studies in the course of study helps here (illustrate); (2) in what respects are the method of discipline and the relation between pupils and teachers a help to this, in what ways a hindrance; (3) to what extent are the social, literary, civic, and athletic organizations in your high school effective in this? Discuss each.

4. Suggest in each of the above and in each school study ways of bettering conditions in the light of the facts and suggestions offered by Tyler.

5. What is the need at this age for athletics and gymnastics? (P. 181.) What are to be the aims in these? What must be avoided? How can this be done? Is your school meeting the need?

LESSON VII, pp. 198-227

PHYSICAL TRAINING

1. What is it our business to discover before prescribing exercises for any period of life? (P, 198.)

2. What parts of the body need exercise especially at each of these periods: (1) infancy; (2) from infancy till six years of age; (3) from six till ten; (4) the pubertal period? (Pp. 198-200.)

3. What provision is made in your school to insure proper physical training at each period of life? How much time and how much money are spent in school on physical education as compared with mental education? (Get the exact figures.) How much playground have you?

4. What is the relation between physical condition and intellectual condition? (Pp. 201-202.)

5. What types of plays are especially popular with children, (1) at the kindergarten age, (2) from seven to twelve, (3) after twelve? What is developed in the child at each of these ages by the plays of the period? (Pp. 205-211.)

6. Why are children usually eager for school in the first grade, but generally equally eager to get out of it by the time they reach the third grade? Why do school children have such poor power of application? (P. 213.)

7. Is it true that a healthy child that starts to school several years late, if ambitious, usually catches up with those of his age who started school several years younger? If true, what does this suggest?

8. How did Colonel Parker define play? How did Froebel?

9. What can school and home do now and here to make use of the ideas about play brought out in this lesson?

10. What is the purpose of gymnastics as distinct from play? (Pp. 218-219.)

11. What special organs and parts of the child's body are put into bad shape by the positions and work in the school room, and what special gymnastics does your school use to correct these tendencies to injury? What can be done about this now?

12. What physical records are kept in your school. Why don't you have medical inspection and proper physical records?

LESSON VIII, pp. 228-241

MANUAL TRAINING

1. What are the differences between "manual training" and "industrial training?" (P. 239.)

2. What does President Eliot say about the relation between mind and body? What experiences of Dr. Wey and others confirm this statement? (Pp. 228-229.)

3. According to President Walker, what effect is produced upon the will by constant learning and thinking without acting? (Ex-President Roosevelt has made the same charge.) (P. 231.) Is this true?

4. Give the mental processes involved in each of three typical manual training projects for boys and three domestic economy projects for girls.

5. Count the approximate manual cost to your town of the lack of training of the women in domestic economy, and compare this with the cost of supporting this subject in the school thoroughly. Count the cost under the following heads and under such others as you can show are proper:

- (1) Food wasted in.....families by improper cooking.\$.....
- (2) Food wasted in.....families by improperly balanc-
ing the family diet.....
- (3) Money wasted on food from ignorance of proper
system and method in purchasing in.....families
- (4) Money wasted on shoddy clothes and textiles by
.....families from lack of cultivated tastes in
dress and lack of knowledge of textiles and their
uses and adulterations.....
- (5) Cost of medicine and doctors' bills from illness
caused by ignorance about feeding and clothing
in.....families
- (6) Cost of drunkenness due to efforts made to relieve
discomfort and depression caused by bad feeding
in.....families

- (7) Cost of days lost from work and of lowered working capacity when at work caused by improper feeding of.....families.....
- Total approximate annual cost to this community of ignorance of domestic science.....\$.....
- Total cost of complete system of instruction in domestic science for this town.....
6. Make the same estimates for manual training.
7. Give the reasons offered by Tyler for putting manual training into the schools. Are these valid? What other valid reasons are there? What valid objections are there, if any? (Pp. 228-241.)
8. Why can not manual and domestic training be given in the homes by the parents?
9. Is your manual training so conducted in the school here as to secure all the values mentioned in answer to question seven above? If not, why not?
10. What per cent of the children get the manual and domestic training? Why should it not be placed lower in the grades and be given to all children before the period of compulsory education is passed?
11. What can you do now to improve the quality or enlarge the quantity of this work in the school?
12. What types of industrial training would be possible in your school? How can this work be carried on? Directly in the school? In co-operation with factories, business enterprises and homes? As continuation school work?