

**STUDIES
IN PEDAGOGY
NEET**



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STUDIES IN PEDAGOGY

REVISED AND ENLARGED

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PREFACE.

It is fully appreciated that there are many books written during the present times for which there not only is no demand, but for which there is no excuse. The present little volume is not born of any desire to produce a book on pedagogy better than any yet written. It is, however, prompted by a desire to choose from the field of pedagogical science material well adapted to a special class of students, with which the writer has to deal in his daily teaching.

The field of pedagogy is so large that material must be selected from it for those students who are just beginning the study of pedagogy. So it has been the aim in this little volume to select from this broad field and organize such material as is best adapted to students beginning this line of work. At the same time material has been selected whose study, it is believed, will be of substantial worth to teachers in giving them an insight into the nature of the teacher's profession as well as knowledge valuable for guidance in teaching. While simplicity has been aimed at as much as possible, no effort has been made to avoid the most fundamental problems of pedagogy.

This book is prepared for the special purpose of use as a text-book in my own classes. Much which is the result of the most recent investigations along pedagogical lines is here arranged in a teachable and convenient form. Thus the study is brought up to date.

An effort has been made to show where the present studies articulate with psychology, child-study and methods.

G. W. N.

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INTRODUCTION.

Pedagogy.—This term is sometimes thought to name some particular school subject, the study of which will enable those who wish to teach school to do their work better than they could do it without such study. It is thought by some who have not been special students of it to name a subject as definite, with regard to the truth it teaches, as grammar, geometry, or physiology. Such, however, is a wrong notion of the meaning of the term, *pedagogy*, as well as a wrong idea of the nature of the subject, *pedagogy*. Pedagogy is a term which names a group of subjects that have to do with both the science and art of education, and is not correctly to be thought as naming any one particular subject.

The term, *pedagogy*, is from the Latin term, *pædagogus*, which means a boy-leader or a child-leader. Thus from its literal meaning pedagogy should be something which has to do with leading children from a condition in which their unpreparedness for living is the greatest to one in which they live intensive and fruitful lives. And this is the correct use of the term, for it indicates the nature of the subject. Used in this sense pedagogy names a group of subjects which are called *professional subjects*. That is to say, they

are subjects which the teacher should study with the special view of becoming more skillful in the art of teaching. Pedagogy thus embraces the group of professional subjects, *psychology, child-study, or paidology, methods, history of education, and philosophy of education.*

Guyau, a French educational writer of note defines pedagogy as follows: "Pedagogy might be defined as the art of adapting new generations to those conditions of life which are the most intensive and fruitful for the individual and the species." This definition emphasizes the art side of pedagogy, but it also has an important science aspect.

It thus appears that two views of pedagogy may be found in the minds of teachers, as follows:

1. The view that pedagogy is a definite subject, such as history, etc. This view is not the correct one.

2. The view that pedagogy is a group of subjects—the *professional subjects* for the teacher.

Paraphrasing Guyau's definition and adding a little to it, we have the following definition for pedagogy: *Pedagogy is the science and the art of adapting new generations to those conditions of life most intensive and fruitful to the individual and the race.*

It will thus appear that the field of study in pedagogy which offers itself to teachers is a broad one, and one from which material especially suited must be chosen. It further appears that to become

to any great extent proficient in the pursuit of pedagogy will require considerable time. Educational ideas have grown till it is no longer believed that one can become proficient in pedagogy by studying it for one or two school terms. This becomes evident when one thinks that to know pedagogy to any great extent is to know psychology, child-study, methodology, history of education, and philosophy of education.

CHAPTER I.

THE SCHOOL.

The Beginning Point.—From the teacher's point of view all study of pedagogy centers around and is connected with the school. The term, *pedagogy*, is so closely connected with the school, and they have been associated together to such an extent that this term always suggests the school in some of its various aspects. For this reason pedagogy has come to be regarded a strictly professional line of work, and a more or less extended study of it is the teacher's distinctly professional preparation. So, as a starting place in the study of pedagogy, it seems eminently fitting to begin with the study of *the school as a whole*, since it is the institution in which the learner and the teacher meet in the educating process.

The Nature of the School.—Among the ancients the school was a place of leisure, but it can scarcely be called such now. In its development it has become one of the fundamental organizations of society. The school is thus an organization, but it gives little or no help to know this unless the idea of an organization is well understood.

The study of the human body as a type of an organization will reveal pretty well the thought sought for here. A somewhat careful study will show that the following points are to be found in the human body as an example of an organization:

1. A complex whole.
2. Individual parts.
3. The harmonious working relation of the parts.
4. A common purpose for which all the parts work.
5. Self-activity and self-adjustment of the whole and the parts.

The body as one thing is a complex whole, since it may be analyzed into parts some of which are of more importance than others. The individual parts in this case are the organs of the body—the hands, the feet, the skin, the heart, the stomach, etc. They are *individual* parts because each one has some marks about it which distinguish it from everything else. All these organs work so as to help one another. Thus the hands help to care for the feet; the feet help to carry the hands from place to place; the feet and hands help to secure food to nourish the skin, heart, and stomach as well as themselves; the stomach helps to digest the food, and the heart pumps the blood enriched by the digested food to all parts of the body. All these parts do their work in such a way that, while each one does its own particular

work well, it in no way hinders any other part but also facilitates its work. If any part should work against another for a time, the organization would become impaired; if continued, the organization would be destroyed by breaking down the unity of its parts. The common end for which all the parts here work is the maintenance of the body as a whole, which is also the maintenance of the life of each part. The human body is self-adjusting in that, when out of order, it tends to adjust itself, and in most cases actually does so. It is self-active in that it has the power of originating its own activities—of causing itself to act. The analysis of the human body as an example of an organization reveals the essential ideas of any organization as we wish in our work to think it.

Then, when we say the school is an *organization*, we say it is a collection of individual parts, self-adjusting and self-acting, working harmoniously together for one common purpose. Thus the pupils, the teacher, the school curriculum, the school officers, the patrons, etc., are the individual parts; and the common purpose toward which they are harmoniously working is the *education of the learner physically, intellectually, aesthetically, socially, morally, and religiously*.

The school, the church, the family, the state, and business society are organizations which are called the institutions of civilized life. These five institutions are the lines along which civilization has grown.

A further study of the institution, the school, leads into a discussion of the origin of the institutions, and particularly the origin of the school.

Origin of the School.—The school had its origin in the *differentiation of institutions*. But this statement gives no help unless the meaning of differentiation is well understood. Differentiation has been called the law of all progress. That is to say, progress consists in the division of structure or of labor or of both, and when there is no differentiation of these there is no progress.

Differentiation may be defined as *a differencing, or division, of structure or labor to the end of more efficient work*.

Illustration.—The lowest forms of life are small animals and plants each consisting of but one small cell of protoplasm which does in a way the work that all the organs of higher living forms do for them. Thus this one cell performs all the functions of digestion, circulation, assimilation, muscular action, etc., that are performed by the organs of higher forms of life. In these little living beings there is almost no differentiation of structure or function. But a little higher form of plant or animal life has many cells, some rudimentary digestive organs, and circulatory organs; and also rudimentary nervous, muscular, and supporting systems. The higher up in the scale of plant or animal life the being is, the more definite are the separate organs,

and the more is their labor divided. For instance the robin or the geranium each has a definite set of organs for the performance of a definite set of functions. That is to say, they have a high degree of differentiation, while the one celled forms have none or nearly none. This means progress; for when an organ has but one kind of work to do, it can do that better than it can do many kinds of work. This is true because there is more time and energy to be spent upon this particular work.

Differentiation of Institutions.—There was a time in primitive society during the childhood of the race when only one of these fundamental institutions of civilization was in existence. This institution was the family. It then had much work to do. It had to protect the children from enemies, both wild beasts and men, to furnish food, clothing and shelter. It had to educate the children in so far as they were educated; to furnish religious services, and provide means of enjoyment for leisure hours. With these manifold duties to perform the family could not be expected to do any of them very well, and we know that they were not well done. The protection furnished was poor; the food, clothing, and shelter were poor; the religion was crude and frequently degrading; the right education of the children could not be given, and the pleasures were gross and debasing. It could be no other way under such conditions.

That there was first a felt-need for the organi-

zation, *the church*, after the family may seem strange, but history shows it is the truth. And when there is a strong felt-need for any thing, the thing is thus produced which will satisfy the need. Thus the second institution of society which came into existence was the church as a product differentiated from the family. To say that the church had its origin in the thought that it as an institution could furnish gratification for man's religious impulses better than the family could is a true statement. If such had not been the case, the church would have had no reason for coming into existence.

The next institution to differentiate was doubtless the school. It grew out of the thought that it as an institution could educate the children better than could be done by the family or the church, or by both. *So the school had its origin in the thought that it as an institution could do the work of educating the children better than any other institution in existence.*

This is the thought that created it, and it is the sole purpose of the school to realize this thought; for it is the function of everything to realize the idea that created it, and the school accords to this law.

Illustration.—It may be truly said that the idea which created the cotton-gin was the idea of some machine to separate the fiber of the cotton from the seed. And it is the purpose, or function, of the cotton-gin to realize this idea; that is, to do the work of separating the fiber of the cotton from the seed.

This we know it does well, and its doing this well is what has kept the cotton-gin in existence.

The origin of the state, and business life may be accounted for in the same way as the origin of the school; that is, they arose in the process of differentiation of the institutions. It is, however, our purpose here to study the origin of the school only.

Differentiation in the School.—The first school was, doubtless, a very simple and primitive affair. It probably consisted of a few students congregated under the shade of some friendly tree to receive instruction from one who occupied the place of teacher. Within the memory of men now living the school was very simple. The house was a log cabin containing almost no furniture; the curriculum was reading, writing, spelling, and arithmetic. The country school was Primary school, High school, Academy, Normal school, Technical school, College, and University. But from this simple beginning by differentiation our schools have become quite complex and elaborate. There has been differentiation at any rate along four lines as follows:

1. In the school as a whole.
2. In the work of the teacher.
3. In the curriculum.
4. In the grading.

Once there was nothing but the primary schools, but now there are Primary schools, High schools, Technical schools, Colleges, and Universities, each

with its own special work to do. Once a teacher taught everything in the school course, but now in many places there is a special teacher for each subject. The curriculum once consisting of only reading, writing, spelling, and arithmetic is now changed by differentiation to one consisting of the following groups: 1. The language group. 2. The science group. 3. The history group. 4. The mathematical group. 5. The art group. Now the curriculum is quite complex and extensive. And lastly differentiation has brought about grading in our schools. The teacher in the first schools taught all grades, while the tendency is now towards but one or two grades for a teacher.

This differentiation in all lines of school work means progress. It means a saving of time and energy. Division of labor, or differentiation, in the school means progress just as truly as it means progress in any kind of life.

Illustration.—Suppose the farmer, in addition to producing products of the farm, had to make his own machinery, grind his wheat and corn for flour and meal, tan the skins and make his boots and shoes, do his own carpenter work, saw his lumber, produce cotton, wool, and flax, weave them into cloth for clothing, be his own doctor, dentist, lawyer, teacher, and preacher, none of these lines of work could be so well done as they now are when this labor is divided up among many persons. Time and energy would

be lacking the farmer to do so many kinds of work well. Also, there is not only more energy to put on any one kind of work when labor is differentiated, but any one doing just one or two lines of work becomes more skillful than he could become when doing many lines of work, and, thus, will do his work much better.

The origin of the school thus being seen in the study of the differentiation of institutions, the next topic to invite study is *the elements of the school*.

The Elements of the School.—It has been seen that the school is a complex whole; that is a whole made up of many parts, or elements, some of which are of less importance than others. These elements may be divided into two classes, and these classes may appropriately be called:

1. The *necessary* elements.
2. The *supplementary* elements.

The necessary elements are those without which the school can not exist. The school is wholly for the learner, and without the learner there can be no school. So the learner is the *first* and *most important* of the necessary elements of the school. The learner makes necessary a teacher. While a school can not exist without the learner, no more can it exist without the teacher. The school finds the thought that created it in the process of fulfillment in the teaching act, but to have the teaching act requires a teacher. So the teacher is the second one of the necessary

elements of the school. While the life of the learner is the thing to be developed always in teaching, it can not be developed without some subject or subjects for it to exercise upon. So a third element, the subjects of the school course, is also an absolute necessity. The term used to designate the school subjects,—reading, writing, spelling, geography, history, etc.,—taken as a whole, is the school *curriculum*. With these three elements, the *learner*, the *teacher*, and the *curriculum*, a school may exist, but take away any one or more of them and the school can not exist.

Every school possesses other elements, which contribute to the efficiency of the work the school has to do, but which are not absolutely necessary to the existence of the school. These are the elements which have been called the *supplementary elements* of the school. They are the school *officials*, the *parents*, and the *material equipments*. The school officers are the directors, trustees, members of the school boards, superintendents of county, city, and state, the commissioner of education, and, in a sense, the legislators, governors, and the president of the country. The material equipments are school houses, school furniture, laboratories, library, apparatus, and school premises.

Both of these classes of elements may exist, however, and there still be no school. In order that there may be a school these elements, whether

necessary or supplementary, few or many, must be *organized*, that is they must work in harmony with the law of the organization. *This law is the law of unity.* In order to understand this truth well, two words, *law* and *unity*, need special study.

Law.—A law is a truth which is true of a large number of particular cases. Thus it is a law that plants require sunshine, moisture, and air for their growth. This is a truth which is true of a large number of particular plants, and these plants are the particular cases. Again it is a law that all material objects are drawn toward the center of the earth. This is a truth which is true of all material objects, and these objects are the particular cases.

Unity.—Unity as used here means oneness in *thought, purpose, and effort.* It means harmony in work and means. It is the harmonious working relation in the organization. Thus there is unity between the student and the teacher when they are both working with the same thought in mind to accomplish the same end by the use of harmonious means. There is unity between parent and teacher when they are agreed as to the end to be attained in school work, and are also agreed on the means and are working to reach the desired end.

The law of unity is the fundamental law of the school. This appears from the fact that when all the elements of the school are examined at the time at which the school is doing its best work, it is found

that it is when there is most unity; also, it is found that when the school is doing its poorest work, is when there is least unity. With the law of unity intact the school moves forward without a jar toward the accomplishment of its work—the education of the pupil. When the law is broken there always results discord and friction. Any one connected with the school, the teacher, the parent, the school officers, or the student may break the law of the school—the law of unity. When any one does so, he breaks a rule of the school, since the rules of the school are but different aspects of the law of unity. And he who breaks the law of unity in the school either intentionally or unintentionally has committed an educational sin.

Further Material for Study.—After studying the school as an institution of civilization, there remain to be studied the purpose, or aim, of the school; the necessary elements of the school; school management, the recitation, etc. These will be studied in succeeding chapters.

The purpose of the school is one with the end, or aim, of education; so a study of this leads to a study of the nature and purpose of education.

The *nature and purpose of education* will constitute the subject-matter of study in the next chapter.

CHAPTER II.

THE PURPOSE OF THE SCHOOL.

The Problem.—The purpose of the school is to educate the pupil. But what does it mean to educate the pupil? What sort of condition is the pupil to be in when he is educated? What is the meaning of what is called an education? These are some of the questions which suggest themselves at the outset of the study. The real problem is, What is the purpose of the school? and, since the purpose of the school is the same as the purpose of education, the problem is, What is the end to be reached in the educating process? That is to say, the question to be answered is, What is the aim, or purpose, of education?

The Problem Answered.—There is scarcely an educational writer of note to be found who has not dealt with this problem and who has not answered it in some way. This fact, that educators everywhere have been thinking and writing upon this question, is evidence of the importance which school men think it to possess.

It will prove helpful to study some of the answers to this very important question.

Complete Living.—Mr. Herbert Spencer, doubtless the greatest living thinker, says the purpose of

education is *complete living*. This when analyzed means:

1. Treating the body right.
2. Treating the mind right.
3. Managing one's affairs right.
4. Rearing a family right.
5. Behaving right as a citizen.
6. Spending one's leisure time right.

This seems a broad and comprehensive view of the purpose of education. There is no kind of human activity that this view of the aim of education does not touch. Granting that this is the true aim of education, then instruction in our schools, if in harmony with this aim, must give the pupil knowledge which will furnish guidance in these six kinds of activities. There must be knowledge gained which will furnish guidance in *treating the body right*; in *treating the mind right*; in *managing one's affairs right*; in *rearing a family right*; in *behaving right as a citizen*; in *spending one's leisure time right*.

The schools in their present condition fall far short of realizing this comprehensive aim. There is scarcely anything in many of our school courses that has as its specific aim to furnish knowledge which gives guidance in treating the mind right. The school curriculum is also almost entirely devoid of work which gives knowledge to furnish guidance in rearing a family. Doubtless much in the average school course has such a remote connection with

knowledge that gives guidance in any of these six lines of human activities indicated, that the time spent upon it could be spent much more profitably some other way. That is to say, in the light of the above indicated purpose, the school curriculum is *inadequate* to a high degree. This point will be studied at length, however, in Chapter VI. under the head of **The School Curriculum.**

Rational Freedom.—Dr. Arnold Tompkins says that the aim of education is *rational freedom*. And by rational freedom is meant *the power to choose and live in the highest good*. This means the power to choose and do that which will in every instance lift one to a higher plane of life as opposed to doing as one pleases regardless of the effect it has upon his own life and the lives of his fellowmen. Some fancy their freedom taken away from them when they are prohibited from doing those things which by degrees bring upon them habits constantly degrading to their lives. In such cases it is not rational freedom that is taken away; in fact, it is not freedom at all, but the opportunity of placing themselves in bondage which is restricted.

Illustration.—A man claims freedom gives him the right to partake of intoxicants to the extent that he becomes drunken. He objects, if one says the law against drunkenness should be enforced, and says his freedom is restricted. It seems evident that the restriction is not upon his freedom, but that

the license to make a slave of himself is the thing upon which the restriction falls. If he were free, he would know the evil of intemperance, he would choose to be temperate, and would have the force of character to realize his choice.

Thus, since *rational freedom* means the power to choose and live in the highest good, it means the same thing as *complete living*.

Strong Moral Character.—Dr. Charles A. McMurry discusses the question, What is the main aim of education? in his work on "General Method," and comes to the conclusion that it is *strong moral character*. Some have objected to strong moral character as the main aim of education on the ground that it slights the value of knowledge in education. The objection, however, does not seem to be a good one. In order to have *strong moral character* one must have knowledge sufficient to enable him to know to a high degree the right and wrong in human activity. One is not likely as a rule to do better than he knows. He may do so, however, by accident, but to be able to act right, presupposes the development of the thinking and knowing powers to the extent that judgments of right and wrong may be formed. So to say that *strong moral character* is the main aim of education does not mean that knowledge getting and the ability to think are to be slighted at all. On the other hand, it does mean that one must possess a store of useful knowledge and the power of ready, accurate thought,

but it further means that this power must be regulated and directed to righteous ends.

To say that a man always has good motives is not equivalent to saying that a man has a strong moral character. The Fijian considers murder an action of the highest honor, and feels that his life has been more or less a failure till he has killed some one. Although some would say the act of killing on the part of the Fijian is a moral act because the motive is good to the Fijian, none probably, would say the act is the result of strong moral character. Similarly, the Turcoman regards theft as meritorious, as shown by the fact that he makes pilgrimages to the tombs of noted robbers to make offerings to their departed spirits. In the same manner the Egyptian thinks it praiseworthy to lie without any further object than that he may become skillful in the art of lying. According to a class of thinkers on moral questions these acts, *murder*, *theft*, and *lying*, are moral acts since the agent performs them with what he considers a good motive. However, the common sense of any school boy tells him that these acts do not grow out of strong moral character.

A person to have strong moral character must be *a good thinker; a lover of truth, beauty, and goodness; and must have well formed habits to the end of acting truthfully, beautifully, and righteously.*

Wise and Virtuous Men and Women.—Another way of stating the purpose of education which means

substantially the same as the purpose stated above is to say the purpose of education is *to make wise and virtuous men and women*. Wisdom consists in knowing what is the best thing to be done next under any set of circumstances, and virtue consists in doing it. Thus a man or woman is wise just to the degree that he or she knows what is best to do next, and virtuous just to the degree that he or she does it.

Harmony of the Four Views.—*Complete living, rational freedom, strong moral character, and wisdom and virtue* as the purpose of education all mean in substance the same thing. Each one emphasizes the truth that it is the function of education to make worthy, honorable men and women of unsullied integrity and virtue.

Importance of the Right View.—Purpose is beginning and end in every kind of process. Purpose as mere idea is the beginning, and it moves forward guiding the process to its realization, the end. Thus it determines the end reached and the character of the process in reaching the end. It also determines the means used in carrying on the process.

Illustration.—A man wishes to beautify his lawn, the purpose, which exists only as an idea. But it is the beginning of the process of making the lawn beautiful. He sets out shrubbery, makes flower beds and plants flowers, plans walks orderly arranged, and constructs a fountain in some suitable place. All this constitutes the process, which the

purpose guides. In the light of the purpose the work must be neatly, orderly, and artistically done, or the beauty will be marred. The purpose also determines the kind of shrubbery, flowers, walks, and fountain selected; that is, the means. All this work well done, the lawn is beautiful, which is the realization of the purpose. Thus the purpose was beginning as idea, and end as its realization.

From the foregoing the importance of having the right purpose of education fixed in the mind of each student and teacher may be seen. It will determine:

1. The character of the educational process.
2. The means used in the educational process.
3. The end reached by the educational process.

Of all the educational questions which enlist the intellect and appeal to the interests of the people, no other is more important than this; no other is more vital and determining in its effects; no other is more far-reaching in its influence. Upon the appreciation of its importance, its correct solution, the faith in it, and the force of it in the form of living principles in the lives of students and teachers depend not only the success and happiness of individuals, but even the perpetuity of national life.

Man's Aim in Life.—In general it may be said that man aims at two things in life:

1. "Animal happiness."
2. "Spiritual worthiness."

Animal happiness means a condition in life

resulting from the satisfying of one's physical needs. It means the possession of the material things of life to the extent that one may have an adequate supply of food, clothing, and shelter for himself and family. It is somewhat relative, meaning different things to different people, but in all cases it refers to the possession of money, property, etc., to the end of bodily comfort. It is the practical set over against culture; the physical set over against the spiritual.

Spiritual worthiness means all that has been discussed under moral character, rational freedom, wisdom and virtue, and complete living from the spiritual side.

Relation of These Aims.—These aims are both worthy ones, but which one holds the dominant place in the consciousness and affections of an individual makes a mighty difference in his life. It will change the whole current of his character and actions. If one subordinates spiritual worthiness to animal happiness, he subordinates the higher to the lower, the animal-like to the human-like, and will be governed more in his actions by the animal-like than by the human-like. Thus the proper relation of these aims is that spiritual worthiness must always occupy the leading place in consciousness and affections, and if there ever be conflict between them, animal happiness must be subordinated to spiritual worthiness. One may attain to both by aiming at

the higher, but he is not likely to attain to both, if he allows his life to be dominated by the lower.

What the Main Aim of Education Is Not.—The predominant aim of education then is not animal happiness, if it were man would be no better than the lower animals in so far as his aim in life is concerned. There is, nevertheless a strong and wide-spread belief that the purpose of education is primarily to furnish a means for obtaining a livelihood. Evidence of this is found in the ideas of a majority of the students who first enter the work in our universities, normal schools, and colleges. It is probably not an exaggeration to say that nine-tenths of the students entering these schools hold in mind as their predominant aim the money-making purpose. Further evidence of this is found in the ideas that parents generally have in sending their children to school. It is common for parents to say, in reply to the question, Why are you sending your children to school? something like the following: "I want my child to be educated that he may not have so hard a time in life as I have had."

What the Primary Aim of Education Is.—The primary aim of education is *strong moral character*. In our civilization there is a need for strong moral character above all other things. There can be no doubt of a need for a better manhood and womanhood among the masses of our people, when the following sad truths are so evident:

1. Ignorance, vice, and poverty go hand in hand with human misery.

2. There is scarcely a court in the land in which one can feel *absolutely* sure of justice.

3. No attempt is made to conceal the fact that to corrupt the right of suffrage is regarded as fair play.

4. So many men in the common affairs of life will not deal honestly with one another.

5. Legislators are susceptible to the influence of lobbyists and bribery.

6. Men have not the moral courage to crush out of existence the curse of intemperance, which fills the jails, penitentiaries, and alms houses, and causes the premature death of eighty thousand citizens yearly in our country, which causes the loss of fortunes, and makes homes desolate.

One can assert without fear of exaggeration that the most pressing need of the nation, and humanity is a better type of moral manhood and womanhood. John G. Holland's "Prayer of the Nation" is as true now as it ever was. He says:

"God give us men! A time like this demands
Strong minds, great hearts, true faith and ready hands,
Men whom the lust of office does not kill;
Men whom the spoils of office can not buy.
Men who possess opinions and a will;
Men who have honor and will not lie;
Men who can stand before a demagogue
And scorn his treacherous flattery without winking,

Tall men, sun-crowned, who live above the fog
In public duty and private thinking."

Hints from Nature.—Education as a process is living rather than mere preparation for living, and human life will of necessity in the process of education conform with the unfolding of life wherever found. Then when the *universal law of the unfolding life process* has been found out, the real purpose of education has been discovered. This is always an upward striving to accomplish the end prompted by inherent self-urgency. Thus the acorn develops into the very best oak tree possible under the circumstances, true to the self-urgency inherently in it. The grain of corn grows into the mature stalk and ear, also true to the self-urgency in it. Everything in nature has an upward tendency because of the self-urgency in it.

The poet idealizes it thus:

"Every clod feels a stir of might,
An instinct within it that reaches and towers,
And groping blindly above it for light,
Climbs to a soul in grass and flowers."

The animal world feels this self-urgency, content to accomplish the work nature has given it to do. The larva develops into the beautiful butterfly, true to this principle. Within the egg is potentially the songster of woodland and field, and its life consists in making the potential that to which its self-urgency points.

Tennyson idealizes it thus:

“To-day I saw a dragon-fly
 Come from the wells where he did lie.
 An *inner impulse* rent the veil
 Of his old husk: from head to tail
 Came out clear plates of sapphire mail.
 He dried his wings: like gauze they grew:
 Thro’ crofts and pastures wet with dew
 A living flash of light he flew.”

The human being comes into the world the most in bondage to his limitations of all animals. His most evident characteristic is his *unpreparedness for life*, his inability to take care of himself. But no one can tell what he will become; that is, his potential freedom is greater than any one knows. It is confidently believed that, while he is actually in bondage in almost every way, he is potentially absolutely free.

Education as a process is the growth from what the individual is to what freedom is in him potentially, and to which his self-urgency points him. And the purpose of education from the hint given by nature is to make of each individual the best man or woman he is capable of becoming; that is, one who has the physical, intellectual, æsthetic, social, moral, and religious aspects of his life harmoniously developed to the end of scrupulous honesty and integrity, strong moral character, and whatever else makes the even current of life run full and strong.

The poet Holmes puts the idealized purpose of education thus:

“Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life’s unresting sea.”

By way of emphasis it may be said that, if a man is dishonest, untruthful, or immoral in any way, he is not educated, though he be a Spencer in thinking ability, and possesses a profound knowledge of all the arts and sciences known to man.

It has been seen that the necessary elements of the school are *the learner, the teacher, and the school-curriculum.*

The learner presents himself to us for study as to (1) his *physical nature*, and (2) his *spiritual nature*.

Our study in the next chapter will deal with *the physical nature of the learner.*

CHAPTER III.

THE PHYSICAL NATURE OF THE CHILD.

Importance of Its Study.—Few people are to be found who have reached middle or later life and who are not afflicted with some sort of disease which more or less all the time is a handicap to them in their pursuit of success and happiness. Together with catarrh, rheumatism, etc., more than ninety men and women in a hundred are thus afflicted. In fact, it is extremely difficult to find a person who is habitually perfectly well. This fact, that so few men and women are to be found who in middle or later life are thoroughly well is evidence of the need of a better understanding of the laws of life by parents, teachers, and all other persons. This knowledge is needed by each one that he may guard his own health and the health of those intrusted to his care.

The Misfortune of Bad Health.—No greater misfortune can come to one than to be afflicted with bad health. This truth is evident from the following facts:

1. Bad health causes natural pain, weariness, gloom, and the loss of time, and money.
2. It hinders the performance of all duties,

often makes business impossible, and always makes it much more difficult.

3. It produces an irritability fatal to the right management of children, makes one's duties in the social institutions impossible, and the spending of one's leisure time a misery.

"To all of which add the fact, that life, besides being thus immensely deteriorated, is also cut short. It is not true, as we commonly suppose, that a disorder or a disease from which we have recovered leaves us as before. No disturbance of the normal course of the functions can pass away and leave things exactly as they were. In all cases a permanent damage is done, not immediately appreciable, it may be, but still there; and along with other such items which Nature in her strict account keeping never drops; will tell against us to the inevitable shortening of our days. Through the accumulation of small injuries it is that constitutions are commonly undermined, and break down long before their time. And if we call to mind how far the average duration of life falls below the possible duration, we see how immense is the loss. When to the numerous partial deductions which bad health entails, we add this great final deduction, it results that ordinarily more than one-half of life is thrown away."

Three potent factors which have to do with the health of all persons and with the health of children in particular are *food, clothing, and shelter.*

Food.—It is well known that there is a thought current in the minds of some people to the effect that the child should not be allowed to eat animal food. It is thought by many people that a strictly vegetable diet is the one most suitable for children; they have joined in with this belief without thinking very much whether it is true or not, or if true, why it is true. Some believe this so strongly that they will permit their children to have little or no meat to eat, while many who eat meat themselves and permit their children to do so still believe it would be better for all parties concerned, if they would not eat it.

When such questions as this come up to be solved, the solution can be found by applying the truths of modern science to it, in so far as it can be solved at all. Accordingly the thing for the parent and teacher to find out is what the truths of modern science show when applied to this question. Then, let us study this question in the light of the truths of modern science.

Three reasons are given in support of the theory that children should live on an exclusively vegetable diet:

1. It is claimed that the health of the child is better promoted by a vegetable dietary.

2. It is claimed that the child whose dietary is vegetable has a better disposition than the one whose food is mixed.

3. And lastly it is claimed that it is wrong to kill animals for food.

Let us study each of these points. The maintenance of the health of the child demands food for three things: 1. To make up for the waste of the body. 2. To supply fuel to keep up the temperature of the body. 3. To furnish material for building up new tissue—for growth. These three demands may be met in three ways: 1. By small quantities of concentrated food. 2. By moderate quantities of moderately rich food. 3. By large quantities of dilute food. Small quantities of concentrated food are not desirable, because it is a well known fact that an effort to supply the needs of the body by too concentrated food leads to disease of the digestive organs.

Large quantities of dilute food are undesirable, because too great a task is imposed upon the digestive organs to promote their health, and the system requires an economy of digestion that energy may not be drawn away from other work of the body to the work of digestion unduly.

As a rule vegetable food is too dilute to supply the needs of the body unless it is taken in too large quantities for the best results to the digestive organs. One of two things is likely to result: 1. There may be an abnormal development in size of the digestive organs. 2. Or there may result disease of the digestive organs by overwork.

Thus for the purpose of keeping the digestive organs healthy by giving them enough work to do and yet not overworking them a diet of mixed vegetable and animal food seems the best.

The body demands three kinds of organic foods: *proteids*, *sugars*, and *fats*. The proteids are muscular tissue builders and must be supplied the body to enable it to maintain its strength. Meats and milk are rich in proteids, but vegetables are not rich in these. On the other hand few of them contain any considerable quantities of proteids. Thus since the body must have proteids, it seems the most natural way to supply them with animal food.

Our teeth indicate that the natural food of the human race is one mixed of vegetables and meats.

And lastly our first food is animal food.

From the above it is seen that the verdict of science is that under natural conditions a dietary mixed of vegetable food and animal food is the natural one and the best one for children in order to promote health.

In regard to the assertion that animal food gives children bad dispositions, it is perfectly true to say that this assertion has never been proven. It is a mere assertion without proof. On the other hand good feeding and good dispositions go together throughout the whole animal world. The Esquimau and the Laplander are not distinguished for their bad dispositions, but for just the opposite characteristics.

They are both easy-going sort of fellows that can not easily be provoked into a fight, yet they and their ancestors for ages have lived almost wholly on meat.

With respect to the third reason urged, it may be truly said that it is difficult to see why it is wrong to kill animals for food any more than it is to kill plants, or any more than it is to kill them when they become pests.

The mass of scientific evidence seems to be entirely against a strictly vegetable diet for children and in favor of a mixed one.

Clothing.—There are some ideas in regard to clothing more or less generally held which are the source of evil and human misery. These ideas are the following:

1. It is held that children's health may be better preserved by dressing them in clothing insufficient in quantity and quality and thus hardening them.

2. Fashion is given the precedence of comfort in children's clothing.

The child needs clothing for three things: 1. To protect him from cold. 2. To protect him from heat. 3. To protect him from substances which might otherwise injure him.

In the process of hardening children the first purpose of clothing is violated in that the child is not protected from cold. "The common notion about 'hardening' children is a grievous delusion. Children are not infrequently 'hardened' out of the world;

and those who survive, permanently suffer either in growth or constitution." The reason for this is that a constant quantity of heat is necessary to the health and growth of the body. If this quantity of heat is lessened for any considerable time because of a lack of clothing or because of exposure, one of two things will result:

1. The health will be impaired. 2. Or merely retarded, or stunted, growth will result. If the constitution is not strong enough to bear the loss of heat, the result will be sickness, disease, and premature death. However, if the constitution be sturdy enough to bear the loss of heat, no further injury may result than stunted growth.

"This truth is displayed alike in animals and man. The Shetland pony bears greater inclemencies than the horses of the south, but is dwarfed. Highland sheep and cattle, living in a colder climate, are stunted in comparison with English breeds. In both the arctic and the ant-arctic regions the human race falls much below its ordinary height: the Laplander and Esquimau are very short; and the Terra del Fuegians, who go naked in a cold latitude, are described by Darwin as so stunted and hideous, that one can hardly make one's self believe that they are fellow-creatures."

The only safe rule is, *children must wear clothes sufficient in quantity and quality to protect the body from any abiding sensation of cold, however slight.*

Children are also frequently required to wear clothing which makes them uncomfortable in order to conform to fashion; also, clothing made of such unsubstantial material that their freedom of play and activity is restricted that the clothing may not be soiled or torn. This freedom of activity is very necessary to the child's growth and development.

From the standpoint of the child's welfare, the following rules should be strictly adhered to in clothing children:

1. *While clothing should not be in excess, it should always be sufficient in quantity and quality to prevent any abiding feeling of cold.*

2. *It should be made of non-conductive material, and strong enough to stand the wear and tear of childish sports with little damage, and of color well adapted to use and exposure.*

The Pedagogy of Food and Clothing.—But what is the pedagogical bearing of food and clothing? Two thoughts here suggest themselves:

1. Excellent opportunities often present themselves for bringing these facts, that the child's welfare demands that he have plenty of wholesome, nutritious food, and plenty of clothing of the right quality, before parents and people in general. There is opportunity in this respect for great improvement in the conditions which affect the education of children, and it is the duty of each teacher to do what he can to improve these conditions. The teacher

must understand and be impressed with the importance of improvement of these conditions to do effectively his part toward bettering them.

2. The teacher who understands the relation of food and clothing to the child's life will not expect the same quality or quantity of work from the poorly fed and poorly clad child that he will expect from his more fortunate companions. Not all children can be treated alike in teaching. The teaching must conform to the needs of the child, and the needs of no two children are the same. The knowledge of food and clothing in their relation to the education of the child will give the teacher more charity and more sympathy in teaching those children who are poorly fed and poorly clad. *And the charity and sympathy of the teacher for his children is of the highest importance to them.*

Schoolroom Conditions.—There are several points concerning the condition of the schoolroom which are properly to be discussed in pedagogy work; and because of their relation to the child's physical nature, it, from one viewpoint, is proper to discuss them here. These points are: 1. Ventilation. 2. Temperature. 3. Lighting. 4. Seating. 5. Cleanliness.

Ventilation.—The general well-being of the body depends upon the quantity and quality of the blood. If the blood be not properly aerated, the whole body suffers at once from the effects of the blood upon it. There is drowsiness, stupor, fatigue, headache, and a

general ill-feeling and the lack of vivacity. These conditions continued lead to bad colds, catarrh, neuralgia, pneumonia, tuberculosis of the lungs and death. From the standpoint of the child's physical welfare, proper ventilation is of the highest importance. It is not an uncommon thing to find seventy-five per cent. of the students in a schoolroom suffering with colds at one time, the teacher oftentimes attributing this condition of things to circumstances over which he has no control when it often happens that he is largely to blame for it in neglecting proper ventilation. The child's success in life will depend to such a large extent upon his physical excellence that it becomes of the highest importance to the teacher to do his part in giving him a sound body.

The Difficulty of Proper Ventilation.—Proper ventilation in ninety-nine school houses in a hundred is an absolute impossibility. Each person in a mixed audience should have not less than 3000 cubic feet of fresh air per hour; or to say it in another way, each person should be provided with from 40 to 50 cubic feet of air per minute, and this should be distributed without producing draughts. These conditions simply can not be provided in most schoolrooms.

A system of ventilation called the *plenum* system will provide these conditions. According to this "the fresh air is forced into the schoolroom by means of a fan, and the foul air is pushed out through any openings in the rooms, and passes away through

a stack. The air in the rooms in such a system as this is under constant pressure. All spaces are filled with air and all leakage is toward the outside. Thus the entrance of contaminated air from any outside source is absolutely prevented."

The plenum system is the best system because the air in the room is under constant pressure toward the outside, thus pushing the bad air out all the time and preventing any bad air from coming in from the outside.

But not many of our schoolrooms have an engine to drive the fan, and most school officers think they can not afford such expensive ventilating apparatus.

Important Points on Ventilation.—Our plan of study does not permit a detailed discussion of the technique of ventilation, though it is a profitable study for the teacher.

There are two things which must be efficiently provided for in a properly ventilated schoolroom:

1. All parts of the room must be furnished with an adequate amount of fresh air at all times.

2. The air must be got into the room in such a way that the pupils and teacher may not be exposed to draughts at any time. Draughts are the source of colds, sore throat, earache, neuralgia, catarrh, rheumatism, etc.

The two following points also need emphasis:

1. *Air may be cold and at the same time be impure and unfit to breathe.*

2. It is an important duty of every teacher to acquaint himself with the technique of ventilation in order that he may do as much as possible toward ventilating properly both his schoolroom and his living rooms.

That air may be cold and at the same time be impure is a truth that janitors as a rule seem entirely incapable of getting into their heads. Nearly every one has had the exasperating experience of sitting at some public gathering suffering intensely from cold and bad air at the same time. That the thermometer in the room shows the temperature to be 68° is no guarantee of the purity of the air in the room.

Temperature.—No schoolroom is conducive to health, which is either too warm or too cold. If it is too cold, it will bring on a sensation of chilliness that is not only extremely uncomfortable, but dangerous to the health. All the evils which result from clothing deficient in quantity and quality may likewise result from sitting, working, and living in an atmosphere of too low temperature. Colds, sore throat, neuralgia, earache, catarrh, pneumonia, tuberculosis, rheumatism, stunted constitution, and arrested physical growth, and even death may be traced to this source in many cases.

The results are almost as bad if the schoolroom is constantly kept too warm. Two undesirable things grow out of constantly keeping the schoolroom

too warm, as follows:

1. The enervating effect a too high temperature produces upon one's life. There is nothing which more quickly takes the energy, vivacity, and vitality out of students and teacher than a school atmosphere habitually kept too warm.

2. The diseases which result from leaving a room too warm and going out into the open air. The sudden change of temperature brought about in this way is a constant source of pulmonary troubles.

A temperature of 70° Fahrenheit is, all things considered, the temperature which should as nearly as possible be maintained in the schoolroom. Any variation from this of more than two degrees should be avoided; for if the temperature be more than 72° some one will be suffering with heat; if it be below 68°, some one will be too cold.

Every schoolroom should be provided with a thermometer, if not by the school board, by the teacher, in order that approximately the proper temperature may be maintained. A good thermometer with a scale from 40° below zero to 240° above mounted on a metal frame costs only 25 cts., and should be owned by every teacher as an aid in his school work.

It is worthy of note in this connection that temperament, clothing, and food of children have a direct bearing upon the question of temperature that no really earnest, sympathetic teacher will ignore.

Some children are comfortable in an atmosphere at 68°, some at 70°, and others at 72°. Some are clothed too warmly, some about right, and some are too scantily clothed. Again some have an abundance of food of good quality, while others have food deficient both in quantity and quality. No teacher can afford to overlook these various conditions, and no sympathetic, loving teacher will want to do so.

Lighting.—The facilities for lighting our school houses are as a rule very bad. They are very much worse than people generally suppose, so bad that a school house is hardly to be found well enough lighted to prevent diseases of the eyes from being contracted where students habitually study in them. Light insufficient in quantity is admitted to the room, and what is admitted comes into the room in such a way that it hurts the eyes. In fact nine hundred and ninety-nine school rooms in a thousand do not conform in their facilities for lighting to the truths which modern science teaches on this subject.

The defects in facilities for lighting our school houses are so universal that some diseases of the eyes caused thereby have come to be known as *school diseases*. Myopia (short-sightedness) and Asthenopia (weakness of the eyes) are the most prevalent of these.

Recent studies show that our school houses have been and are veritable factories for producing myopia. Large numbers of school children have

been studied in Germany, France, Sweeden, Russia, and America for the purpose of getting helpful information on the subject of myopia among school children. Dr. Hermann Cohn examined the eyes of 10,060 school children and found myopia gradually increasing from 1.4 per cent. in the village schools to 26.2 per cent. in the gymnasia. Those children who had been in the village schools six months or less showed no myopia.

Dr. Motias examined in France the eyes of 6,680 students with similar results; he found that in some colleges the percentage of myopic students was as high as 80.

Dr. Dowling examined the eyes of 1,000 school children in Cincinnati and found that a little more than 30 per cent. of them were short-sighted. All the cases examined showed a gradual increase of myopia from the first grade on through the schools.

Causes of Myopia.—It is generally agreed among school authorities that the causes of myopia among school children are as follows:

1. Too little light in the schoolroom, which requires habitually holding the work too close to the eyes.
2. Too much written work in the lower grades in the preparation and reciting of the lessons.
3. Too long periods of eye work.
4. The reading of books printed with too small

type on glistening paper and with the lines crowded too closely together; that is, poorly leaded.

5. Bad seats which cause stooping postures favorable to congestion of the eyes.

The question, What is to be the test of the proper amount of light in the schoolroom? is pertinent. Authorities are quite generally agreed that, when there are no outside obstructions to keep the light away from the windows, there will be enough light in the room if the windowpane surface is one-fourth of the floor surface; that is to say, there should be 1 square foot of windowpane surface to every 4 square feet of floor surface.

Undesirability of Myopia.—Myopia is a disease. It is undesirable and is to be carefully avoided for the following reasons:

1. It is disagreeable, painful oftentimes, and always inconvenient.

2. It is unnatural and places the one afflicted at a disadvantage in life in the struggle for success and happiness.

3. It is so closely connected with the nervous system that it tends to bring on other nervous diseases.

Rules for Prevention.—Schoolrooms should never be more than 33 feet in length and 24 feet in width. There should be an abundance of windows so arranged as to admit the light from the left and the

rear of the students. Blackboards should be at the front and at the right.

Dr. A. G. Young, secretary of the State Board of Health in Maine, and an eminent authority on school hygiene, gives the following rules for the prevention of myopia in school:

1. The schoolroom should have an abundance of light in every part. The principal source of light should be at the pupil's left.

2. The periods of eye work should not be too long.

3. A large part of the instruction should be communicated orally during school hours, and the eyestraining and timerobbing preparation of written lessons should be reduced to the lowest possible point.

4. The school work to be done at home should be limited to a very small amount, and in the younger classes to none.

5. The desks and seats should be of the proper pattern and size, otherwise stooping or other postures favoring congestion of the eye and production of myopia will be assumed by the pupil.

6. The demand for written work should be moderate.

7. The type of all school books and other books for children should be large and distinct.

8. Blackboards should be of a dead black, not

glossy. They should be placed where they will be well lighted.

If these rules be well observed, other school diseases of the eye, as well as myopia, will be reduced to the minimum.

Seating.—This subject will be studied from a different viewpoint in the chapter on *The Management of the School* so will receive but brief study here.

From the standpoint of the child's health, the proper seating of a room is much more important than usually appreciated.

Eulenberg studied 1000 cases of spinal curvature and found that 95.8 per cent. of this 1000 cases originated between the ages of four and twenty, and that 92 per cent. originated between the ages of five and fourteen.

Posterior curvature, "round shoulders," and lateral curvature are to be avoided as great misfortunes. Besides detracting much from one's personal appearance, they impede respiration and other functions.

Then seats and desks should be of proper size and pattern for the following reasons:

1. That spinal curvatures and other physical deformities may be guarded against.

2. That postures favoring congestion of the eyes may be guarded against.

The demand for proper seats in the schoolroom

will sooner or later bring the adjustable seats and desks into common use.

“Adjustable desks are among the important improvements of school furniture. There are several forms on the market, and the main objection to all of them is the price, making it almost an impossibility to supply whole schoolrooms with them. From the hygienic standpoint, each child should have his desk adjusted to himself; but where this is impossible, it has been found of advantage to have two rows of desks and seats, usually the outer ones, adjustable. Extreme cases can thus be accommodated.”

Cleanliness.—It is a maxim that “cleanliness is next to godliness.” A better statement of the fact is, *cleanliness is godliness.*

Every school house should be kept scrupulously neat and clean. No paper, bread crumbs, chalk, nutshells, etc., should be allowed upon the floor. The abominable habit that some students and even teachers have of expectorating upon the school house floor should not under any circumstances be tolerated. It should be regarded a criminal offense.

“The reason for this care is that dust and dirt in a schoolroom is a serious sanitary evil. Dust itself is an irritant to the eyes and the air passages. Dust is known to be a bearer of disease germs. Tuberculosis is certainly transmitted thus, and it is very probable that many other infectious diseases are spread in the same way. An infectious inflammation

of the eyes is sometimes very prevalent in schools, and it is believed that the germs of this disease are spread by means of the dust in schoolrooms as well as in other ways."

This dust evil could be much reduced, if all school houses had hard wood floors well painted, or even soft wood floors well filled and painted. It was not long since popular to oil the floors of school houses, but two good coats of floor paint have been made to answer all the purposes of oiled floors and found not to have their objectionable features.

The school house should be swept daily at the close of the afternoon session after all the students have left the room. The windows should be thrown wide open, and the floor sprinkled with damp saw-dust before sweeping.

The teacher who is thoroughly in earnest with respect to cleanliness will not be afraid to take the broom and duster and set things to rights, even though the janitor does slight his work somewhat. As a rule one can tell a great deal about the quality of the teacher by the condition of his schoolroom.

The Senses and the Sense Organs.—A sense is the mental power to get sensations. Thus sight is the mental power to get sensations of light; smell, the mental power to get sensations of odor, and so on.

The sense organs are those organs which bring stimulus in such connection with the nervous system as to urge the mind to action. There are two general

classes of senses: 1. General, or organic. 2. Special. Authorities recognize seven special senses, as follows in the order of importance: 1. Sight. 2. Hearing. 3. Touch. 4. Smell. 5. Taste. 6. Temperature. 7. Muscular sense.

The general, or organic, sense is that sense which gives us a knowledge of the general well-being or ill-being of our bodies and has no special sense organ. Pain, hunger, thirst, and fatigue are sensations got through the general sense.

The special senses are those senses which give us a knowledge mainly of objects around us and have special sense organs.

The sense organs are of the highest importance to one throughout his whole life. Through them the child first awakens to conscious life. Without the sense organs the mind would never grow. It would remain nothing more than a bundle of undeveloped capacities. Without the sense organs all intellectual growth as well as all the pleasures of living would be denied one.

Since the sense organs are of the highest importance in education, the maintenance of their health and their growth become from a pedagogical point of view one of the most practical questions with which the teacher has to deal. All of the special sense organs are subject to diseased conditions which may demand constant attention, but in this brief study space is lacking for the consideration of more than

two. Of special importance to the teacher are the following: 1. The sense organ of hearing. 2. The sense organ of sight.

Hearing.—Diseases of the ear almost always produce partial or entire deafness. And too few people fully realize what a sad misfortune partial or entire deafness is, and how many people are more or less deaf.

“Authorities estimate that from fifty to sixty per cent. of the children are more or less defective in hearing. It is also claimed that by judicious treatment the percentage can be reduced to fifteen or twenty.”

“There are too many partially deaf people in every community. Every such one is badly handicapped in his business and social relations. How many men lose good positions because of defective hearing! How many sad and fatal accidents are due to the same cause! The new education can do no better service to oncoming generations than to preserve and perfect this sense in children.”

Children have been accused of *dullness*, *stupidity*, *sullenness*, and *obstinacy* when the only difficulty was they could not hear what was going on in their school work. In order to avoid misunderstanding his children, every teacher should test the hearing of his children; also, that he may do something towards seating them so as to favor the unfortunate ones. A teacher can not depend upon the students to in-

form him of any defects of hearing for two reasons: first, students themselves are often not aware of the defects; secondly, people generally are very sensitive concerning any physical defects they may have, and do not desire to call attention to them.

The following is an easy and practical schoolroom test: "The pupil is placed at one end of the schoolroom with his back turned toward the teacher, who dictates in a clear, but not loud voice, while the student writes. The teacher should begin by standing at the farther end of the room. If, at that distance, the pupil has any difficulty in hearing, the teacher gradually approaches until the pupil understands perfectly, which will be shown by his writing the dictated matter perfectly and without hesitation. According to the distance at which the scholar hears readily, he is ranked and placed in the schoolroom. If, for instance, he hears at a distance of fifteen feet only, he is placed within that distance from the teacher's desk."

Seeing.—Myopia has already been discussed as a school disease. Few persons, teachers included, are aware of the number of cases of headache, and other nervous diseases caused by myopic eyes. Astigmatism, resulting from irregularity of curvature of the lenses of the eye, is a disease which is frequent among students, and causes many nervous headaches.

"There seems to be no remedy for these defects save in glasses properly fitted. It is quite common

and is a prolific source of headache. Thousands of cases of chronic headache have been promptly cured by the use of glasses."

"A ministerial friend tells me that a teacher forced his son, who was afflicted with myopia to hold his book at the regulation distance, and in the regulation position as he read or studied, and that the headache resulting threw him into such nervous disorders that at least once a fortnight he was obliged to keep him out of school for three or four days. A lady friend tells me that her little daughter had been coming home every day for months with a bad headache, and that she was losing all interest in school, when the writer visited the city and urged the teachers to test the sight and hearing of their pupils. This girl was found defective in eyesight and given a front seat. In two weeks her headache was all gone, and her interest in school had returned."

A large number of similar cases might be given, but these will suffice.

It is the duty of every teacher to test the eyesight of his children. Every teacher can procure a set of Snellin's test cards of almost any jeweler or optician for ten cents, and can learn to use them correctly in tests in five minutes. They are as good test cards as can be secured. Having found the defectives, the teacher's duty is to inform the parents or guardians and do what may be done by seating the students so far as possible so as to favor the defective

ones. Any earnest, sympathetic teacher will be willing to do so much for his pupils.

CHAPTER IV.

THE MENTAL NATURE OF THE CHILD.

An Attribute.—An attempt to study anything to the end of knowing it well always consists in seeking out the attributes of that thing, and an object is well known only when many of its attributes have been discovered and learned. Thus all learning consists in grasping with the mind the attributes of things. If one sees all the attributes of any object, he knows all there is to know about that object. Then to know all the attributes there are in the universe to know means entire freedom of the knowing power, *the intellect*.

An attribute is perhaps undefinable, but the following statement will characterize it: **An attribute is any mark of an object which helps the mind in knowing it.**

Classes of Attributes.—There are some attributes belonging to objects which enable the mind to know an object from everything else in the universe. Such an attribute is called a *particular attribute*. There are again some attributes which belong to every object in a class. Such attributes are called *common attributes*. Of the common attributes some belong

alike to each object of a class of objects, but do not extend beyond the class. These are *class common* attributes. Also of the common attributes some belong alike to each object of a class of objects, and extend to things beyond, thus connecting the class out with other things in the universe. These are *universal common attributes*. From the above the classes of attributes are *particular*, and *common*; and the classes of the common are *class common*, and *universal common*.

The definitions for these are as follows:

A particular attribute *is an attribute which distinguishes its object from all other objects.*

A common attribute *is an attribute which belongs alike to each object of a class of objects.*

A class common attribute *is a common attribute which does not extend beyond the class of objects to which it belongs.*

A universal common attribute *is a common attribute which connects a class of objects with other objects in the universe.*

Illustrations.—If one knows a table well, he knows its use, form, color, material, length, height, width, weight, and decorations; also, the form, length, width, height, use, color, material, make, condition and decoration of the parts; also, how the parts are connected with the table as a whole and with one another. But all these are the attributes of the table. So to know the table is to know its attributes.

The table, no doubt, has marks not possessed by anything else. These are the particular attributes.

The use is a common attribute and is also a class common, since it belongs to all the class, tables, and to nothing else. Possessing weight is a universal common attribute, since it belongs to other things than tables.

Attributes of Mind.—The first step in studying the spiritual, or mental, nature of the child is the study of the attributes of the mind. Some might think it would consist of the study of the substance of which the mind is made, but this can not be done. There is absolutely no way to study what the mind is made of, but its attributes can be studied. The following are important common, or general, attributes of mind:

1. Consciousness.
2. Attention.
3. Apperception.
4. Self-activity.
5. Iterativeness.
6. Rhythm.

Consciousness.—If you are asked a question, you either know the answer to it or you do not do so, and you further know that you know the answer or do not know it. That is to say, you know the condition of your own mind. It is because of the attribute of *consciousness* that the mind is able to do this. Thus through consciousness the mind knows itself, and is

thus both the knower and the thing known. If without provocation some one should strike you in the face, you know, without any difficulty, your state of mind toward that person. If the question, *How do you know your own mental states?* were asked you, you could answer correctly only by saying, *I know them through consciousness.* One gets some idea of consciousness, if he compares his state of mind when he is sound asleep with his state of mind when he is awake. In the first state he is more or less unconscious while in the second state consciousness is at work.

Consciousness is considered undefinable by some psychologists, but it surely can be defined as nearly as many other things which are considered definable. The following is the definition for it:

Consciousness is that attribute of mind by virtue of which the mind knows its own conditions and activities.

Function of Consciousness.—Consciousness is the most fundamental attribute of the mind. Without consciousness the mind, as we know it, could not exist. Consciousness has the following three functions:

1. It enables us to know one mental experience from another.
2. It enables us to know the value of mental experiences to ourselves.
3. It enables us to direct our mental activities to the accomplishment of mental work.

Attention.—The mind is constantly having experiences. Mental life, and physical life, too, are a succession of experiences. An experience is a *change of any kind*, and a mental experience is then a *mental change of any kind*. Thus mental life is a succession of mental changes.

Most of our mental experiences are carried on without the mind's being *fully* conscious of them, but the mind has the ability of bringing any experience *fully* into consciousness and focusing its energy upon it. It is able to do this through the *attribute of attention*.

From the study so far it may be seen that there are two steps in the process of attending:

1. The bringing of some experience *fully* into consciousness.

2. The focusing of the mind's energy upon it.

At first thought it seems that the mind's energy is focused upon something outside of the mind, but a careful study shows that the mind's energy is always focused upon some mental experience.

From the above study the definition of attention is as follows:

Attention is that attribute of the mind by virtue of which the mind brings some experience *fully* into consciousness and focuses its energy upon it.

Illustration.—One is sitting in his room studying his lesson in arithmetic. The clock is sitting on the mantel shelf ticking away as loudly as usual, but he

does not hear it clearly, though he has a sort of dim consciousness of its ticking. Suppose some one says, "How loudly the clock ticks!" Immediately he hears it plainly. That is to say, the mind brings fully into consciousness the experience corresponding to the ticking of the clock and focuses its energy upon it. The focusing element in attending is analogous to the action of a lens in focusing the rays of light.

Classes of Attention.—On the basis of the effort involved there are two classes of attention: 1. Non-voluntary. 2. Voluntary. If the mind gives attention to a thing because it is so attractive that there is no seeming effort, the attention is non-voluntary. If on the other hand an appreciable effort is required in order to give attention, the attention is of the voluntary kind. The following are the definitions:

Non-voluntary attention is that kind of attention in which no appreciable effort is involved.

Voluntary attention is that kind of attention in which an appreciable effort is involved.

Interest.—Interest is the basis of attention; that is, the mind must be interested in a thing to pay attention to it. The following is a definition for interest:

Interest is any feeling for an object which the mind regards as the cause of the feeling. If an object is so attractive in itself as to hold the mind's interest, the interest is said to be *direct*; if, however, the interest is not in the thing itself, but in something else to

which the thing is a means, the interest is *indirect*. Thus one sometimes studies a subject not because he is interested in the subject but because he thinks he needs it. Thus the classes of interest are: 1. Direct. 2. Indirect.

Direct interest is that kind of interest in which no appreciable effort is involved.

Indirect interest is that kind of interest in which an appreciable effort is involved.

Apperception.—All learning is the mind's process of getting meaning. But this statement does not give much help unless we see what *meaning* is, and what has the meaning. It seems at first thought that objects in the outside world possess the meaning, but a closer study shows that this is not the case. The mind in learning a thing gets meaning from it just to the extent to which it can connect its past experiences with the present experiences and grasp the likeness and difference between them. And from the above it is seen that *meaning is the relation between present and past mental experiences* and is in the mind.

It is because of the attribute of apperception that the mind is enabled to connect the past mental experience with the present in knowing, willing and feeling. But this is not all apperception enables the mind to do. Apperception enables the mind to change itself permanently with each experience. Certainly every experience the mind has leaves a

permanent effect upon it. The mind never is again after an experience just what it was before the experience. Psychologists say experiences are *organized into the mind*, but it seems easier to say *experiences leave their effects upon the mind*.

From the above study it is seen that there are two parts to apperceiving:

1. Bringing past experiences to bear upon the present experiences.

2. Organizing the present experiences into the self.

By making a synthesis of these points the following definition for apperception is reached:

Apperception is that attribute of mind by virtue of which it brings its past experience to bear upon the present experience in getting its meaning, and by virtue of which the present experience is organized into the mind.

The last part of apperceiving may very appropriately be called *mental assimilation*.

Illustrations.—If one who knows nothing of geology were walking down a valley and should find a rock almost round, but having a plane surface as if it were worn off by holding it on a grindstone, he would probably get much the same meaning as he would by looking at any other rock. But if a geologist should find it, he would connect his past experience with that aroused by the rock and say it called to his mind an ice age, when tremendous ice fields covered all the northern part of Indiana. The difference in these

two men would be in the experience they brought to bear upon the experience aroused by the rock.

A child called a jardiniere of ferns "a pot of green feathers."

A small boy called a locomotive "a big bow-wow."

The south sea islanders called Captain Cook's goats "horned hogs."

In each of the above cases the present experience was connected with the past in trying to get meaning, and the mind was able to do this because of the attribute of apperception.

Self-activity.—Some idea of self-activity may be had by comparing objects which possess it with those which do not. A sewing machine acts in sewing, but always from a power without itself. A threshing machine acts, but the cause of its activity is not within it. All machines act in a manner similar to the threshing machine or sewing machine; that is, from a cause not in themselves. A horse acts from a cause within himself in taking food and changing it into horse flesh; and, also, by moving from place to place, he acts. A plant acts in growing by taking its food from the soil and air and making it into plant tissue. The action of the horse and plant are caused from within while the action of the machine is caused from without. The horse and the plant possess self-activity but the machine does not. The mind possesses this attribute by which it causes its own activities, and thus is self-active. The definition from the above is as follows:

Self-activity is that attribute of mind by virtue of which it causes itself to act.

Iterativeness.—When the muscles of the arm and fingers perform the movements in making any character in writing for the first time, the activity is done with difficulty and very unskillfully, but repeated attempts give more skill and success. Each act makes the performance a little more easily accomplished. What was it that remained with the muscles after each activity that caused them to perform the act again with more ease? This can be answered only by saying it is a tendency left in the muscle. *By tendency is meant a disposition to perform some activity.* Thus the plumule of a plant has a tendency to grow upward, and the radix has a tendency to grow downward. We fold a piece of paper, and then say it has a tendency to fold in the same place again. The mind possesses this attribute by virtue of which it has a tendency to act as it has acted, and this is what is called *iterativeness*. Conclusions from the above study give the following definition:

Iterativeness is that attribute of mind by virtue of which it tends to act again as it has acted.

Without iterativeness one could not learn to walk, to talk, to write, nor could he learn any art whatever. He could not remember anything nor make progress in mental growth. In short, human life as we know it would be an impossibility.

Rhythm.—When the word, *rhythm*, is spoken, the average person probably thinks of poetry and music. But rhythm is an attribute that belongs to almost everything in the world. Everything from a dew-drop to an ocean, from a pebble to a continent, possesses rhythm. Every leaf, every flower, and every blade of grass possesses rhythm. Rhythm in its broadest sense is *a thing, the departure from that thing, and a return to it.* The following is rhythmical:

“The day is cold and dark and dreary;
It rains and the wind is never weary.”

In this there is the sound symbolized by *eary* in the word, “*dreary.*” This is the thing, and “It rains, and the wind is never w” is the departure from it. The return to the thing is *eary* in the word “*weary.*”

In the maple leaf rhythm is manifested by a portion on the right half always having a corresponding like portion on the left half, the part between the like parts being different. One of the like parts is the thing, that between them is the departure from it, and the other like part is the return to it. The human mind possesses this tendency to act, to depart from it, and to return to it, and this is called the attribute of rhythm. Since the mind is rhythmical it likes rhythm in anything and dislikes that which is not rhythmical. The world is full of rhythm, and the human mind longs for it.

The following is a definition for rhythm as an attribute of the mind: **Rhythm** is that attribute of

the mind by virtue of which the mind acts an activity, departs from it, and tends to return to it at regularly recurring periods.

Activities of the Mind.—If we will examine our mental activities by looking within our minds, we will find that we are sometimes almost wholly occupied in thinking, again we are depressed with sorrow, and at other times we are almost wholly occupied in directing our muscular or mental activities in doing something. These distinctions among the mind's activities give grounds for the classification of them into:

1. Knowing.
2. Feeling.
3. Willing.

Thus *knowing*, *feeling*, and *willing* are the three large classes into which all mental activities are divided.

Knowing.—An accurate statement for knowing is, *knowing is the mind's process of getting meaning.* But this statement does not give sufficient help unless the term, *meaning*, is well understood. Most persons, at first thought, would probably say that meaning is something which belongs to objects in the external world. But careful thinking reveals the fact that things very unlike what the mind has ever known have very little meaning to it. And this thought carried out shows that, if it were possible to find anything entirely different from anything the mind has

ever known, it would suggest absolutely no meaning to the mind. Again, two persons look at the word, *obliviscor*, and while one gets no meaning from it, to the other it means *I forget*. So scarcely any two persons get the same meaning from an object or event which they see. An object or event stimulates to an activity of the mind, and, if the mind has past mental activities of a similar character to connect the present activity with, it is said the mind gets meaning. From this it may be seen that meaning is a thing which is in the mind. That is to say, *meaning is relation*; and further, it is the relation between present mental experiences and past mental experiences. But even here there are two terms whose meaning must be understood. The first, *experience*, explained in a former paragraph, is any *change*, or *activity*, and any mental experience is any mental change, or activity. The second, *relation*, is the likeness between mental experiences. Relation means in this connection what it means wherever used; namely, the connection the mind sees between its experiences because of their likeness.

We are now in a position to give the following definitions for knowing:

Knowing is the mind's process in getting meaning.

Knowing is the mind's process in grasping the relation between its present and past experiences.

Discriminating and Unifying.—Discriminating is seeing differences and unifying is seeing likenesses.

The mind in knowing sees likenesses and differences between its experiences and thus discriminates and unifies. Thus knowing is both *discriminating and unifying*. One thing necessary in knowing a maple tree is to see the difference in the mental activity it arouses and in the mental activity aroused by an oak tree; and a second thing necessary is to see the likeness between the activity aroused by the maple tree and the activities aroused by maple trees in the past.

All Knowing Indirect.—There is no way for the mind to get meaning directly from an object. The past experience must always come in as a factor in knowing. This truth has led psychologists to say that *all knowing is indirect, or mediative*. That is to say the experience aroused by any object is always referred to the past experience, and *this act of referring to the past experience is the mediative element in all knowing*. It is this act of reference that makes the knowing indirect.

Feeling.—Every experience the mind has changes it both temporarily and permanently. It never is after an experience quite what it was before the experience. Some of these experiences change the mind for the better and some change it for the worse, but all must change the mind permanently in some way. *This change of the self by an experience both temporary and permanent is called the value of an experience* by psychologists. If the experience is in harmony with the growth toward self-realization, the

experience has a *positive* value to the self. If the experience is not in harmony with the growth toward self-realization, it has a *negative* value to the self.

The mind has the ability of being aware, to a greater or less extent, of the value of its experiences to itself. That is to say, the mind knows or thinks it knows, at least, when it has an experience, whether the experience is in harmony or conflict with its growth toward self-realization. It is no doubt true that experiences are unfavorable to the growth toward self-realization, even when the mind regards them as favorable. And it holds equally true that an experience may be favorable to the growth towards self-realization, yet the mind regard it as unfavorable.

When the mind has an experience, and becomes aware of the value of this experience to the self, the state of mind which arises as a result of this becoming aware is *feeling*.

Feeling is the state of mind which results from the mind's becoming aware of the value of an experience to the self.

An analysis of this definition reveals the following points:

1. A state of mind.
2. An experience.
3. The value of an experience.
4. Becoming aware.
5. The self.

By state of mind is meant the disturbed or agitated condition of consciousness. It is a deeper condition than what is ordinarily called mental activities. In the activity of a muscle, the whole muscle acts together, but the individual molecules in the muscle act, too. The activities of the mind are analogous to the activities of the muscle as a whole while the state of mind is analogous to the molecular action.

Feeling is always a *state*, or *condition*, of the mind, and is always *an accompaniment of an activity*.

An experience, as before said, is any *change*, or *activity*, whatever. It is the thing which feeling always accompanies.

The value of an experience is the *effect of the experience on the life of the person*. This effect is in part temporary and in part permanent. One thing is certain, one's experiences organize, build his character, for a higher or lower destiny.

Becoming aware is the recognition by the mind of the value of an experience. The thing become aware of is thus *the value of an experience*. The mind does not always consciously think out the value of an experience, but it either consciously or unconsciously recognizes it.

The self in the widest sense includes both the body and the mind. Thus there are the physical self and the mental self. *The mental self is the original capacity of the mind to know, feel, and will plus the effect of its experiences upon it.*

Love, Hate, and Indifference.—Love, hate, and indifference are called the three fundamental forms of feeling; that is, all feeling is one of the three: love, or hate, or indifference.

When the mind has an experience which it regards as having a positive value to the self the feeling which arises is *love*, or *like*. The definition is as follows: **Love** is the feeling which arises when the mind has an experience which it regards as having a positive value to the self.

If the mind has an experience which it regards as having a negative value to the self, the feeling which arises is *hate*, or *dislike*. The definition is as follows: **Hate** is the feeling that arises when the mind has an experience which it regards as having a negative value to the self.

If the mind regards the experience as having little or no value to the self, the state of mind which arises is *indifference*. The definition is as follows: **Indifference** is that state of mind which arises when the mind has an experience which it regards as having little or no positive or negative value to the self. There is perhaps no such thing as absolute indifference with respect to anything, for indifference is a state of mind in which there is an absence of feeling. We, however, have some feeling with respect to everything.

The Function of Feeling.—Feeling is a kind of safeguard which nature has given us. It urges us to

act; that is, feeling is a *spring* to action. It also urges us to avoid experiences which hinder our development.

Feeling *always accompanies activity*. If the activity causes growth in self-realization, a pleasant feeling accompanies it to urge us to repeat the activity for the self-development which it furnishes. If the activity hinders growth in self-realization, a disagreeable feeling accompanies it to urge us to avoid the activity because of its hindrance to our self-realization.

Everything which one voluntarily does, he does because of feeling. *Thus feeling is both a mainspring and a guide in human action*, and this is its function.

Willing.—Willing is a complex process involving both knowing and feeling, but characterized by striving to act in some way. The process of willing always begins with an impulse. Impulse is an *excess of energy*, or it is a *felt pressure to act* in some way. Impulse produces some sort of change. The impulse which urges the bird to build its nest is a good example of a typical impulse. There are, however, several kinds of impulse. The thing which causes the little child to throw his arms and legs about in any direction before he has control of himself is the impulse, or excess of energy. By a rather complex process impulse in the act of willing is changed into *desire*. Desire is a feeling directed toward something which it is thought will satisfy the feeling. And

desire in the process of willing is changed into *choice*. Then, lastly, the mind directs the activities toward the *realization of the choice*. From the above the definition for willing is as follows: **Willing** is the process in which the mind changes impulse into desire, desire into choice, and in which the mind seeks to realize the choice.

An analysis of the definition of willing shows the following points in it:

1. Impulse.
2. Desire.
3. Choice.
4. The process by which impulse becomes desire.
5. The process by which desire becomes choice.
6. The process by which choice seeks to realize itself.

Impulse and desire have been explained. Choice will be explained after the discussion of point five.

A careful analysis of the process by which impulse becomes desire will show the following points involved in it:

1. The mind sees its real condition.
2. The mind sees an ideal condition of itself.
3. The mind compares these two.
4. The mind decides that one is better or worse than the other.
5. A feeling of dissatisfaction arises.
6. This feeling becomes *desire*.

Illustration.—A student knows of a lecture, which arouses an impulse in him. He is at home—his real condition; he thinks of his being at the lecture—the ideal condition; he compares these two; he decides that to be at the lecture would be a better condition than to be at home; then he is dissatisfied to be at home, and so desires to have himself at the lecture.

The process in which the desire becomes choice involves what is called the *conflict of desires*. That is to say, there are more than one desire before the mind and from which the mind must select. In the illustration given the student probably desired to stay at home and study his lesson, but he also desired to go to the lecture. Since he could not both go to the lecture and stay at home, there was a conflict of the two desires. In this case he selects his desire to go to the lecture and drops the other out of mind, and this act of selecting is *the choice*. Thus the thing chosen is a *desire*. An analysis reveals the following in choice:

1. Two or more desires before the mind.
2. The mind compares these.
3. The mind decides which is preferable.
4. The selecting of the preferable one—the choice.

The process by which the mind seeks to realize the choice consists simply of the directing of the activities to perform the deed. *The directing is purely mental*, but the activities directed may be either

mental or physical. In the illustration above, the mind's directing the physical activities of going to the lecture was the process in which the mind was seeking to realize the choice.

The Functions of the Will.—Repeated acts of the will result in the formation of self-control and character. So it is the function of willing to give these two things: *character* and *self-control*.

Self-control is of three kinds: *physical, prudential, and moral*. Thus the function of the will is to give *physical control, prudential control, moral control, and character*.

The Study of the Will.—Since the will is the *power* by which the *process of willing* is carried on, and the power can be studied only by studying its activities, all study of the will, no matter how far pursued, consists only in elaborating the points begun here. That is to say, to make a profound and intensive study of the will would be nothing more than elaborating *impulse, desire, choice, self-control, and character*.

CHAPTER V.

THE MENTAL NATURE OF THE CHILD.

The Development of Knowing.—The best way to study knowing intensively is to study its development. But the question, What is development of knowing? at once suggests itself. To answer this question it is necessary to rethink that *knowing is grasping the relation between present and past mental experiences*. Then knowing which is developed only to a small extent is that knowing in which but few relations are grasped; and knowing which is highly developed is that knowing in which many relations are grasped. From which it appears that *development in knowing consists in grasping more and more relations*. To show then that one kind of knowing is more developed than another kind is to show that more relations are grasped in one kind than in another.

Illustration.—If one studies a butterfly but five minutes, he knows little about it because he has seen the butterfly in only a few relations; that is, he has grasped but few relations, and his knowledge of the butterfly is but little developed. Suppose now that he studies the butterfly five months; then he will

know much about it because he has seen it in many relations; that is, he has grasped many relations, and his knowledge of the butterfly is much developed. Thus the development of one's knowledge of a thing consists in grasping more and more relations. And we again reach the conclusion that *development in knowing is gaining in the number of relations grasped.*

Stages in the Development of Knowing.—As knowing develops it passes through various stages somewhat analogous to one's passing through stages on a journey. These stages have been given the following names by psychologists in the order of their development:

1. Sense-perception.
2. Memory.
3. Imagination.
4. Conception.
5. Definition.
6. Judgment.
7. Reasoning.
8. Systematization.
9. Intuition.

The Basis of Development.—The sensation is the basis of development in knowing; and it is likewise the basis of development in feeling and willing.

The sensation is the first, most primitive, and least developed mental activity which the mind ever has. It is the first conscious step in the mental

changes succeeding the physical changes. It helps to bridge across from the physical to the mental.

If one places his hand on a chestnut burr, it acts as a stimulus, which excites the outer, or peripheral, nerve ending. This disturbance of the peripheral nerve ending extends along the nerve fiber to the brain and there arouses a disturbance. This disturbance of the brain is followed by a change of the mind which causes a state of consciousness—*the sensation*.

From this it may be seen that the steps leading up to the sensation are the following:

1. Stimulus.
2. Excitation of the peripheral nerve ending.
3. Transmission of the impulse.
4. Brain change.
5. Corresponding mental change.
6. The state of consciousness—*the sensation*.

The stimulus is any form of motion which comes in contact with some part of the nervous system. Thus the stimulus of hearing is motion in the air; the stimulus of sight is motion of the ether; the stimulus of touch is the motion in the molecules of matter.

An impulse has been well defined as an *excess of energy*. Thus in the transmission of the impulse one particle of nervous matter has an excess of energy and strikes against another particle and transfers some of its energy to it; and it in turn strikes the next, transferring some of its energy to

the next, and so on till the impulse reaches the brain. Then the disturbance spreads and produces the brain change.

An induction from the above study gives the following definition for the sensation:

The sensation is a state of consciousness arising from a change in the mind corresponding to a change in the brain caused by some external stimulus.

Students sometimes get the wrong impression that the sensation is in part a physical thing. Four of the steps leading to the sensation are physical, but the sensation itself is a state of consciousness, and consciousness is purely a mental thing.

Classes of Sensations.—There are two classes of sensations: *general*, or *organic*, and *special*.

General, or organic, sensations are those which give us a knowledge of the ill-being or well-being of our bodies, and have no special sense organs. *Pain, fatigue, hunger, and thirst* are general sensations.

Special sensations are those which mainly give us a knowledge of objects around us, and have special sense organs. *Light, sound, odor, and flavor* are special sensations.

Characteristics of the Sensation.—The sensation has four characteristics as follows:

1. Quality.
2. Intensity.
3. Duration.
4. Local sign.

The quality of sensations is the main thing which enables the mind to tell the differences between things. The mind knows hot from cold, sweet from sour, rough from smooth, white from black, etc., because of a difference in the quality of its sensations.

The main thing which causes a difference in the quality of the sensation is a difference in the quality of the stimulus.

The intensity of sensations is very well illustrated by the difference in the sensation furnished by a light of ten candle power and one of seventy-five candle power; or by the difference in the sensation furnished by the light from a kerosene lamp and by that of an electric light.

The main cause of the difference in the intensity of sensations is the difference in the intensity of the stimulus.

The duration of the sensation is indicated by the time during which it lasts. Thus the difference between a half note and a whole note of the same pitch, intensity, and quality, is in their duration. Again, some tastes endure for a long time while others disappear quickly.

The mind is able through the sensation to tell the point of application of the stimulus. Thus when the foot is touched the mind does not make the mistake of thinking it is the face which is touched. That characteristic of the sensation which enables the

mind to tell the point of application of the stimulus is the *local sign*.

The Aspects of the Sensation.—If one would put his hand on a hot stove, the sensation got would (1) enable him to know something, (2) give pain, (3) stimulate him to act. Thus the sensation has three aspects, and they are as follows:

1. Intellectual.
2. Emotional.
3. Volitional.

The intellectual aspect of the sensation is that one which enables the mind to get knowledge from the sensation. It furnishes the basis for the development of knowing.

The emotional aspect of the sensation is that aspect which is pleasurable or painful. It furnishes the basis for the development of feeling.

The volitional aspect of the sensation is that aspect which urges to action. It furnishes the basis for the development of willing.

Comparison of General and Special Sensations.—The following points in the comparison of general and special sensations are worthy of notice:

1. General sensations enable the mind to know the well-being or ill-being of the body, the special, mainly the outside world.
2. General sensations have no special sense organs, but the special have.

3. The knowledge got through general sensations is vague, while that obtained through special sensations is much more definite.

4. The emotional aspect predominates in the general sensations, the intellectual, in the special.

Sense-perception.—The sensation is not knowing, but *sense-perception*, the first stage in the development of knowing, is based upon and developed out of the sensation. As soon as the mind begins to connect its sensations, and see the likeness and difference between them, that is, relate them, it is *sense-perceiving*. The sensation itself is an isolated thing.

Thus sensations are the material which the mind works up into knowledge of external objects, as it were. They are analogous to the threads which are woven into cloth; the cloth is analogous to the knowledge, and the weaving process is analogous to sense-perceiving. In sense-perception the mind *interprets the sensations*; that is, gets meaning—sees the likeness and difference between them. We are now in a position to give the following definition for it:

Sense-perception *is the mental process of interpreting the sensation corresponding to some external object.*

The mind usually regards its sensations as attributes of objects. Thus the mind regards the sensation, *sour*, as an attribute of acid; the sensation, *sweet*, as an attribute of sugar; the sensations, *green*, *red*, etc., as attributes of objects. It is in this way

that the mind learns to interpret sensations and to know the corresponding objects. Thus the mind interprets a patch of red color as a strawberry; a patch of blue color as a bunch of grapes; a certain note as a bluebird, or a certain odor as a clover field.

Classes of Sense-perception.—There are two classes of sense-perception on the basis of development: *original sense-perception*, and *acquired sense-perception*.

If one learns that a piece of red-hot iron is hot by placing his hand upon it, he gets his knowledge through the temperature sense, the only way there is of directly getting such knowledge. At first, sight could not give such knowledge, but later the mind would know that the iron is hot through sight.

The perception of the iron as hot through the temperature sense is an example of *original sense-perception*; its perception through sight is an example of *acquired sense-perception*.

Original sense-perception is that kind of sense-perception in which the mind interprets the sensations from one sense without the aid of the sensations from any other sense.

Acquired sense-perception is that kind of sense-perception in which the mind interprets the sensation from one sense by the aid of the sensations from some other sense.

The Object of Sense-perception.—The object with which sense-perception deals is one which possesses

marks that distinguish it from all other things; one which is external to the mind; one which occupies space, and one present in time and space. Thus the object of sense-perception is:

1. Particular.
2. External.
3. Material.
4. Present in time and space.

By present in time is meant coexistent with the act of sense-perception. And by present in space is meant in such a position as to furnish a stimulus to the senses.

The Percept.—Every process produces some sort of a product. Thus the product of sense-perception is called a *percept*. The percept is the idea of the sense-perceived object with its characteristics just mentioned above. The definition is as follows:

The percept is an idea of a particular, external, material object present in time and space.

Memory.—Every experience the mind has leaves a tendency for the mind to act again a little more easily, as it acted in that experience. This tendency for the mind to act again as it acted before is called *retention* in psychology. Thus we learn the definition for the noun to-day, and to-morrow we are able to give it when called upon; and we say we retained it. But where was it in the meantime? It remained with the mind only as a tendency. That is to say, the mind keeps the disposition to act again as it acted

when the noun was learned. When the mind acts an experience it has before acted the process is called *reacting*, or *reproducing*. These two things, *retention* and *reacting*, are elements of memory. But there must also be another element. When the mind reacts an experience, if it is a complete process of memory, it must be aware that the present experience is one it has had before. This process of seeing that the present experience is not a new one, but one the mind has had before, is called *identifying*. *The present experience is identified with the past experience.* This act of identifying is the *third* element in memory. We are now in a position to give the following definition for memory:

Memory is the mental process of retaining, reacting, and identifying past mental experiences.

As before said, retention is the mind's tendency to act again as it has acted. Just what this tendency is in ultimate analysis, no one knows, but that the disposition to act again as it has acted is a mark of the mind is very evident.

The reacting is just the working of the mind as it has worked before. Thus if the mind thinks that *life is an intense struggle to-day* and to-morrow thinks the same thing, the mind has reacted a past experience.

When one reacts an experience and is conscious that he has had this experience before, he is identifying the present experience with the past. The

identifying element is absolutely necessary to memory. Without it the act could not be called one of memory.

The Classes of Memory.—On the basis of development there are four classes of memory, as follows:

1. Recognition.
2. Remembrance of the Particular.
3. Remembrance of the General.
4. Recollection.

Recognition is the least developed kind of memory and is most like sense-perception, but it is a little advance in development over sense-perception. In recognition the object is always present as it was in sense-perception, and the object is always particular. In addition to re-perceiving the object the mind always knows that it is reacting the activity corresponding to it at a different time from the former activity and usually at a different place.

Thus *the knowing that the mind has perceived the object before, the grasping of more time relations, and more place relations* constitute the advance in development of recognition over sense-perception.

Illustration.—As one passes down the street and meets his friends, he says he recognizes each one; he is using the term, *recognize*, just right, for in each case he is re-knowing his friend in an act of recognition. The object, his friend, is particular, present, and is known to have been known before.

Remembrance of the particular is the next higher kind of memory. In this kind of memory the object remembered is never present, but it is always a particular object. The process is as follows: the mind has an activity corresponding to some object some element of which is like some previously known object. From the suggestion of this like element the mind reacts the entire activity appropriate to the previously known object, and thus remembers it.

The main advance of remembrance of the particular over recognition is that it enables the mind to think of objects when they are not present. This is an immense advance, for to be able to think of objects only in their presence would detract tremendously from the mind's power of thought.

Illustration.—One sees a basket of fruit sitting in a show window. This makes him think of a particular fruit farm he has seen in Michigan. From the suggestion of the like element in the basket of fruit the mind goes ahead and finishes up the whole activity appropriate to the fruit farm previously known, and thus remembers it.

The next higher kind of memory is remembrance of the general. In this kind of memory the mind remembers a *general idea*, or general notion. If, when a child is given a piece of crayon and told to make triangles on the board, he is able to do so, it is because he remembers the general idea, *triangle*.

The process is as follows: the mind has an activity corresponding to something some element of which is like some element of the general idea. From the suggestion of the like element, the mind rethinks the general idea, and thus remembers it.

Illustration.—A teacher held up an overshoe and asked the students what it put them in mind of. A student said it put him in mind of a flatboat. The teacher asked what one and the student said no particular one. The student's act of memory was *remembrance of the general*. The advance of remembrance of the general over remembrance of the particular is that it enables the mind to think of things in classes or generals. This enables the mind to save much time and energy.

Recollection is the most developed kind of memory. It is characterized by a special effort of the will to get hold of some associated line which will suggest the thing to be remembered.

The process is as follows: the mind has an activity corresponding to some object some element of which is missing. The mind is aware that there is a missing element, and makes a special effort of the will to bring into consciousness some associated line to suggest the missing element. If it succeeds, the act is complete.

Illustration.—I see a flower, but can not remember its name—the missing element. I then try to think where I saw the flower before, how its name

looked on the page, etc., and thus succeed in recalling its name.

A gentleman stepped into a store and saw a man whose face seemed familiar, but could not remember his name or where he had seen him before. He then made an effort to get hold of some associated line to suggest the name and circumstances under which he had been known. He went back to the different places in which his life had been spent for five years and thus remembered the missing elements.

The advance of recollection over the other kinds of memory is in (1) *the effort involved*; (2) *the number of relations grasped*. In the effort to get hold of some associated line to suggest the missing element more relations are grasped than in any other kind of memory.

The Law of Memory.—There is but one law of memory, and it is as follows: *The mind remembers things wholly through their associations*. Thus, if when one sees a thistle, Scotland comes into mind, it is because the thistle and Scotland have been associated in that mind; if one remembers France when he sees the lily, it is because France and the lily have been associated.

Association.—But the question, What is association? at once suggests itself. When one looks at the word, *dog*, the idea, *dog*, comes into consciousness. This occurs because the idea of the word, *dog*, and the idea, *dog*, have been held in consciousness at the

same time; also, if two or more things have been held in consciousness in close succession, they will suggest each other. Thus it appears that association is nothing more than the process of holding two or more things in consciousness at the same time or in close succession. The following is the formal definition for it:

Association is the mental process of holding two or more things in consciousness at the same time or in close succession.

Laws of Association.—There are two classes of laws of association: *primary*, and *secondary*.

The primary law of association explains why ideas succeed one another at all in consciousness. The secondary laws explain why, when several ideas have been associated with an idea, it suggests one in preference to another. Thus, if ideas 1, 2, 3, 4, 5, 6, and 7 have been associated with idea x, when x comes into consciousness, why will idea 5 come into consciousness rather than 1, 2, 3, 4, 6, or 7? The secondary laws explain this.

The Primary Law Stated.—The following is the statement for the primary law of association: *When two or more things have been held in consciousness at the same time or in close succession and one is afterward presented, it is the tendency for the other or others to come into consciousness.*

The Secondary Laws Stated.—The secondary laws are five in number and are as follows:

1. The law of correlation: *Those things held together in consciousness with the most essential likeness are, other things equal, the most strongly associated.*

2. The law of repetition: *Those things held together in consciousness the most frequently are, other things equal, the most strongly associated.*

3. The law of emotional preference: *Those things held together in consciousness with the highest degree of feeling are, other things equal, the most strongly associated.*

4. The law of voluntary attention: *Those things held together in consciousness with the highest degree of attention are, other things equal, the most strongly associated.*

5. The law of recentness: *Those things held together in consciousness the most recently are, other things equal, the most strongly associated.*

The law of *correlation* may be illustrated as follows: if Bonaparte and Alexander have been associated at one time, and Bonaparte and Newton at another time, when Bonaparte comes into mind, according to the law of correlation, Alexander would come to mind in preference to Newton. This would be true, because there are more essential likenesses between Bonaparte and Alexander than there are between Bonaparte and Newton.

The law of *repetition* may be illustrated as follows: if the Declaration of Independence and Thomas Jefferson have been held together in consciousness

more often than the Louisiana Purchase and Thomas Jefferson, when Thomas Jefferson comes into consciousness the Declaration of Independence will appear in preference to the Louisiana Purchase.

The following will illustrate the law of *emotional preference*: a boy was crossing a bridge on horseback, when a broken board flew up at one end because of the horse's stepping upon it at the other end. The horse becoming frightened at this jumped and fell at full length off the end of the bridge into the mud and water some eight or ten feet below. Now when this boy sees a broken board in a bridge, he thinks of this incident in preference to other things, because of the high degree of feeling connected with it.

The following illustrates the law of *voluntary attention*: if a friend walks past one holding a vase in his hand and one gives him careful attention on one day and on a second day the same friend carrying a book passes one and is given only slight attention, when the friend comes into consciousness the vase will appear in consciousness in preference to the book.

The illustration of the law of *recentness* is as follows: if one has recently been reading of the numerous dogs of Constantinople, and before this has read the Mohammedan's call to prayer, according to the law of recentness, when Constantinople comes into consciousness its numerous dogs will appear in consciousness in preference to the call to prayer.

Imagination.—The mind has the ability of getting ideas and then of putting these ideas into mental images, or pictures. If one tells you to shut your eyes and look at the following described apple with the mind's eye, the process of forming the picture of it is imagining:

A large dark-red apple, three inches in diameter, almost spherical, with a rotten spot as large as a finger nail on one side, and a worm hole on the opposite side, is lying on a platter sitting on a stand in the center of a room.

The pictures formed by the imagination may be almost like objects which have been seen or they may be almost entirely changed; that is, highly idealized. It makes no difference how much they are idealized the imagination still depends upon the memory for the material for its images. The Ancients imagined a huge dog, Cerberus, with three immense heads, whose body bristled with snakes in the place of hairs, and whose barking resembled peals of thunder, as the guardian of Hades. There is nothing new in this picture but the *combination*. They were familiar with dogs, heads, snakes, and peals of thunder. The only new thing is the combination. What is true of this case is true of all cases of imagination. Imagination is thus dependent upon sense-perception and memory for the material which it builds into its images. The image made by imagination is always a particular thing; that is, the mind regards it as separate from all other things.

From the foregoing the definition of imagination is as follows: **Imagination** is the mental process of embodying an idea in a particular form, or image.

The Advance in Development of Imagination over Memory.—If one should study a vase for one hour and then go to another room and attempt to draw it, he would find many places which he would not quite remember. Imagination enables one to fill out these places in a picture where memory fails him. Thus imagination fills up the discrepancies of memory.

Sense-perception confines the mind strictly to the present time; memory enables the mind to know past time, but it is only the imagination which enables the mind to know future time and to project itself into the future. This enables the mind to set up ideals and to plan for the future.

The integrity of the act of memory depends upon the accuracy of the reproduction. Thus the mind regards itself as remembering well or poorly accordingly as it reproduces accurately or inaccurately. This is not the case with the imagination. In acts of imagination the mind knows its freedom in changing or idealizing. The imagination is thus a much freer activity of the mind than memory.

These three advances of imagination in development over memory may be summed up as follows:

1. The imagination fills out the incompleteness in acts of memory and thus enables the mind to think of objects as complete wholes.

2. The imagination enables the mind to grasp future time and thus to project itself into the future.

3. The imagination is much freer than memory in its idealizing activity.

Classes of Imagination.—On the basis of development there are three classes of imagination: *reproductive, mechanical, and creative.*

Reproductive imagination is the least developed kind of imagination. It is but a small advance in development over memory. If one should study a tree on the lawn for an hour, then go to his room and draw it the image produced would be as nearly literal as possible; that is, as nearly an accurate representation of the tree as possible. The kind of imagination employed would be the *reproductive.*

The definition is as follows: **Reproductive imagination** *is that kind of imagination which forms images as nearly literal as possible.*

The mechanical imagination is the next higher kind. It is that kind of imagination which makes images by arbitrarily separating or combining parts of images of the reproductive imagination. If the wings of birds are combined with the forms of cows, the image is the result of the mechanical imagination, or if the head of a man is imaged floating through space, it is the work of the mechanical imagination.

The following is the definition: **Mechanical imagination** *is that kind of imagination which forms*

images by arbitrarily separating or putting together images of the reproductive imagination.

The creative imagination is the highest kind. It is also called *constructive, inventive, and scientific* imagination. In this kind of imagination the mind fashions the material which it builds into an image to suit its purpose. It is the kind used in all the creations of man, as a bridge, a bicycle, an automobile, a house, a poem, etc. It is purposive to a high degree. The entire image in this kind of imagination is a product highly idealized and made up of smaller images which have also been idealized to suit the mind's purpose.

The definition is as follows: **Creative imagination** *is that kind of imagination which builds up complex images made by adapting the images of reproductive and mechanical imagination.*

Conception.—In order to know any object the mind must see it in both its particular and universal aspects—must see what distinguishes it from all other things and also what connects it with other things. Some of the stages of knowing emphasize one aspect of objects and some the other. Thus in *sense-perception, memory, and imagination* the mind emphasizes the particular aspects of objects, but in *conception, definition, judgment, reasoning, and systematization* the mind emphasizes the universal aspects of objects.

Sense-perception, memory, and imagination deal with *particular ideas*. Conception, too, deals with an idea, but not a particular idea. It deals with what is called a *general idea*, or *general notion*. But what is a general idea, or notion? If one should set out to examine triangles, he would find that every triangle: 1. Is a polygon. 2. Has just three sides. 3. Has just three angles. He would also find that each one has several attributes not found in all the others, and that each one has some attributes not found in any of the others. These last two kinds of attributes are necessary to the triangle, but do not enter into the general idea of the triangle. The general idea, *triangle*, is made up of ideas, *one*, *two*, and *three* above. That is to say, it is made up of those attributes that could be found in any triangle. The following is the definition for a general idea:

A general idea is an idea which corresponds to the common attributes of a class of objects.

The terms, *concept*, *general idea*, and *general notion*, all have the same meaning. This should be remembered. The process in which concepts are formed is *conception*, and the definition is as follows:

Conception *is the mind's process of forming an idea which corresponds to the common attributes of a class of objects.*

Method of Forming Concepts in Actual Life.—In actual life concepts are formed as follows: first, the mind perceives an object of a class for the first time

and gets a sort of tentative concept which usually contains attributes not possessed by all the objects of the class; secondly, the mind perceives other objects of this kind and begins to drop from the concept any attributes which are not common and perhaps to add some common attributes not at first perceived; this process of changing the concept because of further experience is continued until just those attributes which belong to every object of the class remain.

Illustration.—The mind naturally gets its general ideas from the study of particulars. Suppose the first barn a child sees is a square one, painted red, with roof sloping but one way, and containing only hay and corn. From this particular the mind's idea of barn will contain *square form, red color, this particular kind of roof, and filled with hay and corn.* To be brief, the mind from the study of particulars goes on correcting its idea of barn by dropping out elements, and possibly adding some, until just those attributes remain which are possessed in common by barns.

This is the way the mind naturally gets its concepts in life. When it examines the first particular, it forms a tentative, or trial, concept. But it goes on and examines other particulars to correct this tentative concept. It should be noted carefully that the mind naturally examines the real, particular object of which it forms its concepts.

The Logical Steps in Conception.—The following are the logical steps in an act of conception:

1. The mind acts an activity appropriate to a particular object by thinking several of its attributes.

2. The mind repeats this process with other similar objects.

3. The mind compares and contrasts these objects.

4. The mind abstracts the common attributes by holding them in consciousness and dropping more or less from consciousness the others.

5. The mind generalizes by extending the common attributes of the particulars studied out to all objects of the class.

6. The mind thinks the name of the class.

The first two steps may be put together, thus making but five steps as follows: (1) the examination of particulars; (2) comparison and contrast; (3) abstraction; (4) generalization; (5) denomination.

The Aspects of the Concept.—The concept has two aspects: *intension*, and *extension*, or *intent* and *extent*.

When the mind thinks the general idea, *triangle*, it thinks the common attributes which make up the idea, but it also thinks of the particular objects to which the concept applies. In the first case the mind is thinking of the *intension*, *intent*, or *content*—these terms all have the same meaning—of the concept. In the second case the mind is thinking of the *extension*, or *extent*, of the concept. The following are statements for these two aspects of the concept: *The intension of a concept is that aspect of the concept*

which refers to the number of common attributes in it. The extension of a concept is that aspect of the concept which refers to the number of particular objects to which it applies.

Definition.—The popular notion of definition is that it is some sort of formal statement, either oral or written, to be learned and remembered. But definition in its essential nature is a mental process, and sufficiently distinct to be regarded *a stage in the development of knowing.*

An examination of how the mind naturally forms a definition will reveal the nature of the process.

Let the thing to be defined be the triangle. The mind examines a particular triangle, noting its attributes; then it examines a second triangle, noting its attributes; then a third, and so on. The mind compares these various particular triangles and selects out their common attributes. It finds them as follows:

1. The triangle is a polygon.
2. It has three sides.
3. It has three angles.

The mind now makes a synthesis of these common truths of triangles in the form of a thought, which gives the following: *A triangle is a polygon having three sides and three angles.* This, it is evident, is a definition of the triangle, and the mind's process of arriving at this mental product is the mental process of definition.

From the above the following definition of definition is reached:

Definition *is the mind's process of making a synthesis of the common attributes of a class of objects in the form of a thought.*

For instance, the mind examines several particular nouns in sentences, and sees the following truths of each one:

1. It is a substantive word.
2. It names the object which it expresses.

The mind makes a synthesis of these truths as follows: *A noun is a substantive word which names its object.* But this defines the noun.

In making a definition the mind takes the following steps:

1. It thinks the name of the thing to be defined.
2. It puts the thing to be defined in the next larger known class.
3. It sets the thing to be defined off from all other things of this class.

For instance, in the definition of the sentence, "*The sentence is that language unit which expresses a thought,*" "*The sentence*" names what is to be defined; "*is that language unit*" puts the thing to be defined into the class, *language units*, the next known class larger than the sentence; and "*which expresses a thought*" sets the sentence off from the other things of the class, the *word* and *discourse*.

The thing defined is always a class. When the mind defines a prism, the definition is not for some

particular prism, but it is for the class, *prism*. Thus, a definition must include all the particulars of the class to be defined. That is to say, it must be *inclusive*. The definition must also exclude everything except the particulars of the class defined; that is, it must be *exclusive*.

The mind's natural mode of defining is thus as follows:

1¹. The mind examines particular objects of the class to be defined.

2¹. The mind selects out the common attributes of these particular objects.

3¹. The mind makes a synthesis of these common attributes in the form of a thought by:

1². Thinking the name of the class to be defined.

2². Putting the thing to be defined into the next larger known class.

3². Setting the thing to be defined off from all other things of that class.

Laws of Definition.—Thus to guide in making definitions the following laws may be formulated:

1. *Name the thing to be defined.*

2. *Put the thing to be defined into the next larger known class.*

3. *Set the thing to be defined off from all other things of that class.*

Judgment.—The mind gets particular ideas through sense-perception, and general ideas through

ception. In judgment the mind grasps and emphasizes the relation between ideas. For example, the mind of man had an idea, *coal*, and the idea, *fuel*, for years before it ever grasped the relation between those ideas. When at last it did, it asserted that *coal is a fuel*. This process of grasping the relation between the idea, *coal*, and the idea, *fuel*, and asserting it is the mind's process of judging. Thus the definition of judgment is as follows:

Judgment is the mind's process of grasping the relation between ideas and asserting it.

The product of an act of sense-perception is a *percept*; of an act of conception, a *concept*; of an act of definition, a *definition*; of an act of judgment, a *judgment*.

Every judgment is expressed by a sentence, if expressed at all. Thus the sentence is the *symbol* of the judgment. It is commonly said that the sentence expresses the *thought*, and this is right, because the thought and the judgment mean precisely the same thing.

The sentence, then, bears the relation to the judgment of *the symbol to the thing symbolized*. And the judgment bears the relation to the sentence of *the thing symbolized to the symbol*.

The act of judging is a triple activity of the mind; that is, a one act made up of three. The following are the steps in judging:

1. The mind acts some idea.

2. The mind acts a second idea related to the first.

3. The mind grasps and asserts the relation between these ideas.

The Elements of the Judgment.—Since there are three activities in making every judgment, there are three essential elements in every judgment: the *psychical subject*, the *psychical predicate*, and the *psychical copula*. The following are definitions for them:

The psychical subject is the idea of the object about which something is asserted.

The psychical predicate is the idea of that which is asserted about the object of which the subject of the judgment is the idea.

The psychical copula is the idea of the relation between the subject of the judgment and the predicate of the judgment.

The Two Aspects of Judgments.—Judgments have two aspects: *intension* and *extension*. The intension and extension of judgments are not so much two separate things as the two different aspects of the same thing. Thus every judgment is at one time both a judgment of intension and extension. If the mind thinks *man is an animal*, it may refer the subject, *the idea, man*, to the predicate, *the idea, animal*, with the idea of extending or universalizing the subject, for animal is a larger class than man. In this case the judgment is one of *extension*. But if the mind refers the predicate, *the idea, animal*, to the sub-

ject, *the idea, man*, with the idea of enriching the subject in meaning by adding the element of animal to it, the judgment is one of *intension*.

Reasoning.—In judgment the mind emphasizes the relation between ideas. In reasoning it emphasizes the relation among judgments. In every act of reasoning there are three judgments involved, so related that the last is reached because of its relation to the other two. Thus having the two judgments, “*Man is mortal*,” and “*William is a man*,” the mind reaches the third judgment, “*William is mortal*,” and this process of the mind is reasoning. The definition is as follows:

Reasoning is the mind's process of reaching a judgment because of its relation to two preceding judgments.

The Classes of Reasoning.—There are different classes of reasoning depending upon the basis chosen. Often the mind produces a judgment when it is not at all conscious that this judgment is reached because of its relation to two preceding judgments, but an analysis always shows that the two preceding judgments are implied, though not in consciousness. Thus there are two kinds of reasoning from the standpoint of whether all three of the judgments are in consciousness. Thus when the mind thinks *This day is rainy*, it has as a rule, in consciousness only this one judgment. An analysis shows that the two judgments, *rainy days have certain characteristics*; and *this day has these characteristics*; are implied, however.

Then again, the mind in reasoning examines particular objects and reasons that what is true of these is true of the whole class; that is, it goes from the examination of particulars to a general truth. Also the mind may start with a general truth and reason that what is true of the whole class must be true of the particular objects of that class. Thus from the standpoint of whether the mind goes from particulars to the general or from the general to particulars there are two classes of reasoning.

Implicit and Explicit Reasoning.—On the basis of whether the mind has in consciousness all three judgments there are two classes of reasoning: *implicit*, and *explicit*.

Implicit reasoning is the kind of reasoning in which one or more of the judgments are not in consciousness.

Explicit reasoning is the kind of reasoning in which the mind has all the judgments in consciousness.

Inductive and Deductive Reasoning.—On the basis of whether the mind goes from the particular to the general or from the general to the particular there are two classes of reasoning: *inductive* and *deductive*.

Inductive reasoning is that kind of reasoning in which the mind goes from truths of particular objects to general truths.

Ex.—This object is an animal.

This object has voluntary motion.

Animals have voluntary motion.

Deductive reasoning is that kind of reasoning in which the mind goes from general truths to truths of particular objects.

Ex.—Animals have voluntary motion.

This object is an animal.

This object has voluntary motion.

The Syllogism.—In every act of reasoning there are three judgments, or propositions. These three judgments, or propositions, taken together are called the *syllogism*. Thus the syllogism may be characterized as follows:

The syllogism is the formal act of reasoning consisting of three judgments, or propositions.

Of the three judgments which compose the syllogism the first two are called the *premises*, and the last one, the *conclusion*.

There are in each syllogism also three terms: the *major term*, the *minor term*, and the *middle term*. These may be known from their position in the judgments. The predicate of the conclusion is invariably the *major term*; the subject of the conclusion, the *minor term*, and the term found in both the premises but not found in the conclusion is the *middle term*.

The premises are called major or minor depending upon which term is found in them, the major term being always found in the major premise, and the minor term, in the minor premise.

Thus in the syllogism,—

This object is an animal.

This object has voluntary motion.

Animals have voluntary motion.

“have voluntary motion” is the major term; “Animals” is the minor term; and “This object” is the middle term. Also, “Animals have voluntary motion” is the conclusion. “This object has voluntary motion” is the major premise, and “This object is an animal” is the minor premise.

The arrangement of the judgments in a certain order is called a figure of the syllogism. There are said to be three figures of the syllogism, as follows:

I.

Animals have voluntary motion.

This object is an animal.

This object has voluntary motion.

II.

Animals have voluntary motion.

This object has voluntary motion.

This object is an animal.

III.

This object is an animal.

This object has voluntary motion.

Animals have voluntary motion.

The first figure of the syllogism is employed by the mind in *deduction*; the second, in *identification*; and the third, in *induction*.

Systematization.—In judgment the mind grasps the relation between ideas; in reasoning, between judgments; and in systematization, between complete acts of reasoning. Thus by systematization the

mind connects all the truths of plant life into a complete system—the science of botany; also, all the truths of animal life into the science, zoology.

Systematization *is the mind's process of grasping the relation between complete acts of reasoning.*

Intuition.—To know any object completely is to know it in both its *particular* and *universal* aspects; that is, (1) to know it as distinct from other objects, (2) as connected with other objects.

In the stages in the development of knowing from *sense-perception* to *imagination*, inclusive, the mind emphasizes the particular aspects of known objects; but in the development of knowing from *conception* to *systematization*, inclusive, the mind emphasizes the universal aspects of objects. Thus in no stage of knowing from sense-perception to systematization does the mind grasp an object with equal emphasis upon both its particular and universal aspects. This it does in the highest stage of knowing, *intuition*. Intuition in its fullness is thus knowing an object completely, and is thus the end of the development of knowing. It may be defined as follows:

Intuition *is the mind's process of implicitly grasping an object with equal emphasis upon both its particular and universal aspects.*

Intuition is *rational insight*.

The Distinguishing Element in the Stages of Knowing.—By the distinguishing element in the stages of

knowing is meant that element which makes any stage different from any other stage, and by which any stage may be known.

The distinguishing element in sense-perception is *the interpreting the sensations*; in memory, *the identifying activity*; in imagination, *the free imaging activity of the mind*; in conception, *the grasping the class common attributes*; in definition, *the synthesis of the common truths of a class*; in judgment, *the grasping the relation between ideas*; in reasoning, *the grasping the relation between judgments*; in systematization, *the grasping the relation among complete acts of reasoning*; in intuition, *the equality of emphasis on both aspects of an object, the particular and universal*.

The Advance in the Stages of Knowing.—The sensation in itself is an isolated thing. In sense-perception the mind relates the sensations and grasps the likeness and difference between them. Its advance over the sensation is in *grasping the relation between the sensations*. In *original sense-perception*, the least developed kind, the mind interprets the sensations from only one sense, that one which was evidently designed to give sensations of one particular kind. In the *acquired sense-perception*, the most developed kind, more than one sense is involved, and thus more relations are grasped and the process is more complex—more developed.

In memory, the second stage of knowing, the mind grasps more time and place relations than in

sense-perception. In sense-perception the mind can deal with only present, in time and space, objects. Thus it is a great advance to be able to *think of objects not present in either time or space*.

Recognition, the lowest kind of memory, is a very small advance over sense-perception, merely *more time relations grasped*.

Remembrance of the particular is an advance over recognition in that the object is never present—*more place relations grasped*.

In remembrance of the general the mind advances to *the grasping of general relations*. The mind deals with particular ideas in both recognition and remembrance of the particular, but with a general idea in remembrance of the general.

In recollection, the highest kind of memory, the advance is in the *effort of the will involved* and in the *grasping more relations* in the attempt to get hold of some associated line to suggest the missing element.

In imagination the mind advances over memory (1) in *grasping more time relations*; (2) in *filling out the discrepancies of memory* in its effort to remember a thing completely; and (3) in *the freedom of the activity*.

In reproductive imagination, the least developed kind, the mind advances just a little beyond memory. The advance is mainly that of *supplying the discrepancies of memory*.

In mechanical imagination the advance over the reproductive is *the greater freedom of the idealizing activity.*

In the creative imagination the advance is in *the greater number of relations grasped* because of the freedom of the idealizing activity of the mind.

The advance of conception over the stages of knowing below it is that of *shifting the mind's emphasis from the particular to the class common attributes* of objects. Sense-perception and imagination, the idea-forming stages of knowing below conception, give particular ideas; conception, also an idea-forming stage of knowing, advances to the general idea.

The advance in definition over conception is found in the mind's effort to make explicit what it only vaguely grasps in conception—*the distinct separation of the different classes of things.*

The advance in judgment is in *grasping and emphasizing the relation between ideas* of any kind whatever; that is, in reaching out for more relations.

The advance in reasoning is *grasping the relation between entire judgments*, a further broadening of the relations grasped.

The advance of systematization over reasoning is in *grasping the relations among complete acts of reasoning.*

In intuition the advance is in the *equal emphasis of the mind* in grasping an object in both its universal and particular aspects. This is the most complete

knowing of an object and with it the development of knowing ends.

CHAPTER VI.

THE SCHOOL CURRICULUM.

Meaning of the Term.—The curriculum is the school course of study. It is made up of the various subjects studied in school. Thus in the primary, or common, school the curriculum consists of reading, writing, spelling, arithmetic, grammar, primary language, history, geography, physiology, and in some places music, and drawing. In the secondary, or high, school it usually consists of algebra, and geometry; Latin, composition, rhetoric, and literature; botany, zoology, chemistry, physics, geology, and astronomy; ancient history, mediæval history, and modern history; drawing, and music.

It is easily seen that the school curriculum is not a fixed thing, but that it changes from time to time. The subjects in the school curriculum taken as a whole divide themselves into groups. There are at any rate the following groups:

1. The *language group* consisting of reading, writing, spelling, language, composition, rhetoric, grammar, Latin, literature, German, French, etc.

2. The *mathematical group* consisting of arithmetic, algebra, geometry, trigonometry, etc.

3. The *natural science group* consisting of physiology, geography, botany, zoology, psychology, chemistry, physics, astronomy, geology, etc.

4. The *history group* consisting of ancient history, mediæval history, and modern history.

5. The *art group* consisting of drawing, and music, at the least.

6. The *professional group* consisting of psychology, methodology, paidology, etc.

Origin of the Curriculum.—The function of the school is to educate the child. But the child must have something to study that he may get knowledge and discipline in the process of education. Thus there are two aspects of the thought which originated the school curriculum: the idea of getting useful knowledge, and the idea of getting mental discipline.

The foremost one of these ideas was the need for useful knowledge. So it may be said that the first felt-need which was instrumental in originating the school curriculum was the felt-need for useful knowledge. And by useful knowledge is meant knowledge which furnishes one guidance in right living.

The second felt-need which was instrumental in originating the school curriculum was the felt-need for discipline; that is, for mental exercise to the end of health and growth. It was recognized that the mind must have exercise to maintain its health, and also to grow.

The curriculum at one time consisted of nothing more than reading, writing, spelling, and arithmetic. It was called the "three r's," when it was thus simple,—“readin, ritin, rithmetic,” spelling being included in “ritin.”

There was a need for some subject in the curriculum the study of which would make the children skillful in the two following things:

1. Getting thought and feeling from pieces of discourse.
2. Communicating this thought and feeling orally in the author's own words.

This need was the origin of reading as a subject in the school curriculum. And the purpose of reading in the school course is to satisfy this need.

Again there was a need for something in the school course which would make the children skillful in the art of making the correct written forms by means of which thought and feeling are communicated. This need was the origin of spelling and writing in the curriculum. And the purpose of spelling and writing in the school course is to satisfy this need.

In dealing with the world of objects the mind needed to be skillful in measuring them. In carrying on business transactions the things exchanged had to be measured, and skill was needed. So there was a need for some subject in the school course the study of which would give the children skill in measuring.

This need brought arithmetic into the school curriculum, and was thus its origin. And the purpose of arithmetic in the schools is to make the children skillful in measuring.

In a similar way we could trace out the origin of every study in the school curriculum, but it will probably be more helpful to do that under the head of,—

The Growth of the Curriculum.—As stated above the school curriculum of the primary, or common, school, at one time consisted barely of reading, writing, spelling, and arithmetic. But it has not remained so. Many new subjects have been added. That is to say, the school curriculum has grown.

It is interesting to trace out the ideas which brought the subjects into the school curriculum as it grew, and to compare those ideas with what these subjects actually do for those who study them. That is, to see whether these subjects have realized in the lives of the children the things which they were expected to realize.

It was seen that some subject needed to be in the school curriculum whose study would give the pupils the habit of using good language in communicating their thoughts and feelings. So grammar was added to satisfy this need, and for a long time it was expected that the study of grammar would actually give the pupils the habit of using good language in writing and speaking. Finally it became evident that

grammar was not doing this well enough. The need for some subject to do this was still strongly felt. So the next attempt to satisfy this need brought primary language as a subject into the curriculum.

The question whether language lessons as usually taught will satisfy this want suggests itself.

It was also felt that, since so much of life's success and happiness depends upon the health of the physical being, something ought to be added to the curriculum, the study of which would give knowledge valuable for guidance in maintaining the health of the body. Thus physiology and hygiene were added to the school curriculum to satisfy this want.

Man learns by experience and by example; that is, by his own experiences and by the experiences of others. He must depend upon the experiences of the race for a large part of his knowledge. These experiences of the race have been preserved in recorded history; and these experiences thus recorded are the heritage left by the race to humanity.

There was felt a need for some subject in the school curriculum the study of which would bring the child into possession of the thought and feeling of the race as manifested in history, and this need caused history to be added to the school curriculum.

Life of all kinds is very dependent. Plant life depends upon heat, light, and moisture; animal life of all kinds is dependent upon plant life and other animal life; and the human being is dependent upon

all these things along with his dependence upon his fellow men. This mutual dependence of life, vegetable, animal, and human upon one another, and upon heat, light, and moisture has led to the wide distribution of life over the surface of the earth.

There was a need felt for some subject whose study would give the child a knowledge of the mutual distribution of heat, light, moisture, relief forms, plant life, animal life, and human life on the surface of the earth. Geography was added to the school curriculum to satisfy this want, and this was the origin of geography in the curriculum.

Enriching the Curriculum.—Within recent years there has been much discussion on *enriching* the school curriculum of the primary school. By enriching it, is meant the addition of new subjects to it and the bringing down some subjects which were formerly taught only in the advanced grades to the lower grades.

In line with this thought *literature, music, drawing, and nature study* have been introduced into many primary school curricula, and history, geography, etc. have been placed in the work of the first, second, third, and fourth years.

The main purpose in making this change has been to make a school curriculum better adapted to the child's mental development in the first three or four years of his school life than the one composed almost wholly of reading, writing, spelling, and

arithmetic. It was thought that the first work of the child in school was not well adapted to his stage of physical and mental development, and that, therefore, was not of a character to arouse an enduring, drawing interest in school work. So the need for work more interesting to the child than the formal work in reading, writing, spelling, and number, is largely the thing which has produced these changes in the curriculum.

A Rational Curriculum.—The school curriculum has been criticised on the ground that it is not *rational*; that is, it is not *reasonable*. The question, What is a *rational* school curriculum? at once suggests itself. Let us study this question systematically for a time.

All would no doubt agree that that school curriculum is the most reasonable which is best adapted to the needs of the learner's life. And all would also agree that that school curriculum which wastes the learner's time and breaks down his health is not a reasonable one. Then if in some way it can be determined what school curriculum is best adapted to the learner's life, it may be known what a rational school curriculum is.

In order to proceed in a systematic study of the curriculum it is necessary to rethink the purpose of the educating process.

The Purpose of Education.—Herbert Spencer, it will be remembered, says the purpose of education

is *complete living*. And there is unanimity of opinion among thinking people everywhere on this point. Certainly any work in the educating process is to be regarded as good or poor accordingly as it helps much or little in right living. The evidence that people generally estimate the value of any subject in the school curriculum in terms of living is, that when any one wants to show the value of any school subject, he attempts to show how it helps in life. Thus the teacher of French, when he wishes to show the value of the study of French, always does it in terms of life; the German teacher, and the Latin teacher endeavor to show the use of German and Latin in living.

It was previously seen that "complete living," means the following: 1. Treating the body right. 2. Treating the mind right. 3. Managing one's business right. 4. Rearing a family right. 5. Behaving right as a citizen. 6. Spending one's leisure time right.

The Test.—The only rational mode of judging the value of any school curriculum is to judge to what degree it discharges the function of preparing for right living. The test is as follows: *Any subject is valuable in the school curriculum just to the degree to which it helps in right living.*

The First Step in Applying the Test.—The first step in applying this test to the school curriculum is to *classify, in order of importance, the lines of activity*

which make up human life. These are as follows: 1. Those activities put forth in direct self-preservation. 2. Those activities put forth in indirect self-preservation. 3. Those activities put forth in rearing a family. 4. Those activities put forth in performing the duties of citizenship. 5. Those activities put forth in spending one's leisure time.

The Order of Importance of These Lines.—A little study shows that these lines of activities have been arranged in the order of decreasing importance. The activities put forth in direct self-preservation—those in getting out of the way of objects which would injure, avoiding danger, eating, drinking, protecting ourselves, etc.—are first in importance. If one were as ignorant as an infant of his environment, he would lose his life in less than a day, unless he had some one to care for him. And, since absolute ignorance of all other things would not bring death so quickly, those activities spent in direct self-preservation and that knowledge which furnishes guidance for these activities are of foremost importance.

The activities spent in indirect self-preservation—those activities in securing food, clothing, and shelter—are second in importance. That these activities precede in importance those put forth in rearing families may be seen from the fact that self-maintenance makes possible those activities employed in rearing families. Without self-maintenance first there could be no family life. Thus the activities put

forth in indirect self-preservation are second in importance only to those needful in direct self-preservation.

No social life would be possible without the family. The family is the most fundamental social institution, and the rearing of children alone makes possible the church, state, etc. Then those activities employed in bringing up children are more important than those spent in performing the duties of citizenship.

Again the goodness of society as a whole depends upon the goodness of those individuals who compose it, and the quality of the individuals depends largely upon the family training. Therefore those activities put forth in rearing a family are third in importance.

Fourth in importance are those activities put forth in fulfilling one's duties as a citizen. This appears from the fact that of all the lines of activities making up life, those used in spending leisure time could be best left out of life. Also, the various forms of pleasurable activities which fill up leisure hours presuppose social institutions. No great degree of development of these pleasurable occupations is possible without well established social institutions.

Fifth and last in the lines of activities which make human life are the activities spent in leisure time.

The Rational Order of Education.—From the foregoing, the following is seen to be the rational order

of education: 1. That education which prepares for direct self-preservation. 2. That education which prepares for indirect self-preservation. 3. That education which prepares for parenthood, and the bringing up of a family. 4. That education which prepares one for the duties of citizenship. 5. That education which prepares for spending right one's leisure time.

While there may be particular exceptions and modifications of this order in the lives of some individuals, yet there remain these marked divisions, and they subordinate one another substantially as indicated.

The Second Step in Applying the Test.—The second step in applying the test is to classify knowledge in the order of its importance.

Not all knowledge is of equal value to the human race. Some may have a vital bearing upon all human life for all time; some may touch the lives of only a few for only a brief time; and some may be so remotely related to human life as to have almost no bearing upon it. Accordingly knowledge has been classified as follows: 1. Knowledge of intrinsic value. 2. Knowledge of quasi-intrinsic value. 3. Knowledge of conventional value.

Knowledge of intrinsic value is that knowledge which bears upon the life of all mankind throughout all time. The knowledge that chlorine is a disinfectant; that tuberculosis is a disease caused by a

germ; that every thought or feeling one has burns away some of his brain material, and scientific knowledge in general, is knowledge of intrinsic value. These truths will have a bearing on human conduct for all time.

The extra knowledge of the English language which the study of Greek and Latin gives is knowledge of quasi-intrinsic value. It has a value to a part of humanity for a part of time, but is not of value to all mankind for all time.

Knowledge of conventional value is simply fashionable knowledge. Gossip, neighborhood and national, much of Greek and Latin taught in school, and some parts of history are knowledge of only conventional value. Much that is taught in the subjects above mentioned scarcely has the remotest bearing upon human activities. It is fashionable to learn such things, and so people go on studying them without ever having thought out what bearing they really have on human life.

Thus in estimating the value of knowledge, knowledge of intrinsic value is of *first* importance.

The Value of Learning.—The process of learning is valuable from two points of view. First, knowledge is obtained which furnishes guidance in human conduct. Secondly, the mind gets healthful exercise in its efforts to learn. The mind develops by exercise; that is, it learns to do by doing. The exercise of the mind to the end of maintaining its health, and develop-

ing its strength is what is called *mental discipline*. Thus any learning has two values: 1. A knowledge-giving value. 2. A disciplinary value.

Thoughts to Be Kept in Mind.—In the further study of the school curriculum, in order to systematize the study, the following thoughts should be kept in mind:

1. Life is divided into several lines of activity of decreasing importance.

2. Knowledge is of three kinds according to its worth: a. Knowledge of intrinsic value. b. Knowledge of quasi-intrinsic value. c. Knowledge of conventional value.

3. Learning always has two values: a. A knowledge-giving value. b. A disciplinary value.

Disciplinary Value and Knowledge-giving Value Not Antagonistic.—There is an error current to a large extent that some subjects are needed in the school curriculum because they have an excellent disciplinary value, even though their study does not give knowledge of much use in guiding one in right living; and another aspect of the same error is, that some subjects are needed in the school curriculum because of the useful knowledge their pursuit gives, even though their study does not furnish good mental discipline.

This error in its two aspects has entered entirely too largely into the considerations in making school curricula in the past. It is quite possible that those

subjects whose pursuit gives knowledge the most useful for guidance in right living are the very same ones whose pursuit gives the best discipline. And there is no lack of subjects to make a curriculum which will give the most valuable knowledge and at the same time give the very best discipline. Human life is too short to study one set of subjects for valuable knowledge alone, and to study another set of subjects for discipline alone.

In the solution of any educational problem hints usually may be had from nature. Everywhere in nature we find capacities developed by performing the functions which it is their office to perform, and not by some exercise artificially arranged to fit them for the performance of these duties. The hunter acquires the discipline which makes him a successful hunter only by the pursuit of game. *The highest development of a power always results from the exercise in the work which the conditions of life require of it.*

In the light of these truths, *the acquisition which gives the most valuable knowledge must at the same time furnish the very best discipline.*

Making discipline almost the entire object in teaching "is responsible for a sort of mediæval dialectics and fruitless beating of the air in teaching which passes as superfine method. It is Fichte's idealism and subjectivity run mad."

Direct Self-preservation.—The knowledge which gives guidance in direct self-preservation, too im-

portant to be left to be taught in school, Nature has taken into her own hands to teach. She is teaching the child his daily lessons in direct self-preservation by means of the falls, bruises, scratches, cuts, burns, and pains which befall him every day in his early life. Mother Nature teaches the lesson well that, when any of the laws of life are violated, pain and misery are the inevitable result.

Not being aware of all the safeguards which nature has furnished us, we often violate her laws. What subjects have we in the school curriculum whose pursuit will furnish knowledge for guidance in these activities? The answer to this question is, we have *physiology* and *hygiene*. The pursuit of these subjects gives the knowledge that one's physical sensations and desires—cold, heat, fatigue, hunger, thirst, etc.—are promptings which, if obeyed, would to a large extent provide for direct self-preservation. But so great an ignorance is there of the laws of life that men do not appreciate fully enough that the sensations are the natural guides in direct self-preservation.

Physiology and hygiene have it as their field of work to teach a better general knowledge of the laws of physical life and a fuller appreciation of the necessity and momentous importance of their obedience.

No one will doubt the value of physiology and hygiene in the school curriculum who will consider the pain, the weariness, the gloom, the waste of time

and money entailed, and "how greatly ill-health hinders the discharge of all duties, makes business often impossible and always more difficult; produces an irritability fatal to the right management of children; puts the function of citizenship out of the question; and makes amusement a bore. Is it not clear that the physical sins, partly our forefathers' and partly our own, which produce this ill-health, deduct more from complete living than any thing else, and to a great extent make life a failure and a burden instead of a benefaction and a pleasure?"

And it may further be added that the average length of human life is, by the violation of these physical laws, largely cut short.

Physiology and hygiene may thus be seen to occupy a dignified and exalted position in the school curriculum. And this is a fact which should be seen and appreciated by every teacher that these sciences may be taught *conscientiously* and *well*.

Indirect Self-preservation.—The knowledge which furnishes guidance in indirect self-preservation is that which guides in making a living—in obtaining food, clothing, and shelter. All persons are agreed upon the importance of such knowledge; and indeed, by too many it is regarded as the sole or main object of education. While every one is agreed that knowledge which furnishes guidance in making a living is of high importance, yet few have systematically thought out just what knowledge will best do this.

In order to study this question to the best advantage, it is necessary to notice the main things in which men who work are employed.

What Things Men Are Employed in.—The main lines in which men who work for a living are employed are as follows:

1. The production of commodities.
2. The preparation of commodities.
3. The distribution of commodities.

By the production of commodities is meant the production of corn, wheat, hay, oats, beef, pork, coal, iron, wool, flax, poultry, fruit, lumber, leather, silk, cotton, linen, hemp, and a large number of other similar things.

The preparation of commodities means changing them into a fit condition for consumption, or use. It refers mainly to manufacturing; as the manufacture of machinery, food, clothing, etc.

Distribution refers to sending such things to the points of consumption.

Now, the question is, What knowledge gives the greatest guidance in these three lines of activities?

It is evident that commodities could not be distributed without a knowledge of reading, writing, spelling, and arithmetic. Distribution requires railroads, canals, bridges, docks, and the dredging of rivers; locomotives, cars, steamboats, and steamships. But the knowledge which guides in the construction of these is a knowledge of mathematics,

physics, chemistry, and mechanics. Thus the knowledge which gives guidance in the distribution of commodities is, directly, mathematics, physics, chemistry, and mechanics; and indirectly, reading, writing, arithmetic, and spelling.

That knowledge which guides in the preparation of commodities is, again, directly, a knowledge of chemistry, physics, mathematics, and mechanics; and indirectly, reading, writing, spelling, and arithmetic.

That knowledge which gives guidance in the production of commodities is, directly, chemistry, physics, geology, zoology, botany, agriculture, horticulture, and bacteriology; and indirectly, reading, writing, spelling, and arithmetic.

Thus it is seen that subjects whose study furnishes knowledge which gives guidance in both direct and indirect self-preservation directly are almost wholly *science* subjects.

The Rearing of a Family.—One is led to wonder, when he thinks of our school curriculum, whether this division of human activities is to be considered of so little importance that no systematic knowledge is needed to furnish guidance for them.

“If by some strange chance not a vestige of us descended to the remote future save a pile of our school books or some college examination papers, we may imagine how puzzled an antiquary of the period would be on finding in them no indications that the

learners were ever likely to be parents. 'This must have been the curriculum for their celibates,' we may fancy him concluding. 'I perceive here an elaborate preparation for many things: especially for reading the books of extinct nations and coexisting nations—from which indeed it seems that these people had very little worth reading in their own tongue; but I find no reference whatever to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently then, this was the school course of one of their monastic orders.' "

There are however in the school curriculum physiology and hygiene whose pursuit will give knowledge which furnishes guidance in bringing up children, in so far as the laws of their bodies are concerned. But not enough emphasis is placed upon these subjects. The value of the knowledge furnished by their study has not yet been sufficiently appreciated.

"To tens of thousands that are killed, add hundreds of thousands that survive with feeble constitutions, and millions that grow up with constitutions not as strong as they should be; and you will have some idea of the curse inflicted on their offspring by parents ignorant of the laws of life."

The child not only has a physical nature, but he has also a moral and intellectual nature. For guidance in the moral and intellectual training of children

there is almost nothing in the average school curriculum whose study gives the requisite knowledge.

Psychology and child study are the subjects whose pursuit gives the knowledge most valuable for guidance in these activities. But few schools have these subjects in their curricula at present, and probably will not for many years yet.

“Be this as it may, however, here are the indisputable facts: that the development of children in mind and body rigorously obeys certain laws; that unless these laws are in some degree conformed to by parents, death is inevitable; that unless they are in a great degree conformed to, there must result serious physical and mental defects; and that only when they are completely conformed to, can a perfect maturity be reached.”

Man's Duties as a Citizen.—When one asks himself what subjects there are in the school curriculum the pursuit of which furnishes guidance in one's duties as a citizen, his mind turns to history, for it has been asserted over and over again that the study of history makes good citizens. But when one stops to think whether history, as usually taught, does especially make good citizens, it does not seem very clear.

It is safe to say that if history were properly taught, it would give a stock of knowledge valuable for guidance in citizenship. But in order that history may give this guidance it must not be taught merely

as a *record of events*; neither must it be taught as *isolated events*, nor must all the time of teaching be spent on the state as an institution of society. To accomplish this desired result history must be studied as *the struggle of the race in its effort for higher life*. This struggle must be seen to have been one in all the institutions of society—the family, the school, the church, industrial life, and the state. It must be seen, too, that in human action there is a seed-time, a period of growth, and a fruitage.

But as history is often taught it certainly is worth little for guidance in citizenship.

Literature, if well taught, is valuable for guidance in this line of activities.

The best interpretation of both history and literature requires a knowledge of psychology. This is evident from the following: If one knew absolutely nothing about the human mind, he could not interpret history or literature at all. And certainly one who has an organized, systematic knowledge of psychology will interpret better than one who has only a fragmentary, unorganized knowledge of it.

“Without an acquaintance with the general truths of biology and psychology, rational interpretation of social phenomena is impossible.” “All social phenomena are phenomena of life—are ultimately dependent upon the laws of life—and can be understood only when the laws of life are understood.”

Sociology is the best subject in the school curriculum to furnish knowledge valuable for guidance in the duties of citizenship, and an understanding of sociology is absolutely dependent upon a knowledge of psychology.

Thus, we see again that for knowledge to furnish guidance in this fourth division of human activities, we are largely dependent upon *science*.

Spending Leisure Time.—A life with no leisure time is not most to be desired, for it is almost sure to become one of drudgery. All should have some leisure time and should have proper habits of spending it. This time should be spent in such a way that it will furnish recreation and amusement, and at the same time be not degrading, but uplifting in its effects. If one must spend his leisure time in such a way as to degrade himself, he would be benefitted by not having any to spend.

This time could be spent in the enjoyment of Nature; in the enjoyment of literature; in the enjoyment of fine arts—architecture, sculpture, music, painting, and poetry— and in the companionship of one's friends, and so spent would be elevating, and ennobling.

Those subjects which will put one in the right attitude of mind for the enjoyment of nature are those subjects which treat of nature. That is to say, they are the natural sciences—botany, zoology, geology, astronomy, chemistry, and physics.

That subject which gives knowledge valuable for guidance in enjoying literature is directly the school subject, literature. And to this should be added psychology, which aids largely in the interpretation of literature.

Music, now in many school courses is the subject which gives ability to enjoy music.

In the average school curriculum there is nothing which directly prepares one to enjoy architecture, sculpture, and painting.

For the enjoyment of poetry, literature, reading, and psychology prepare one.

Greek and Latin.—From a systematic study of the school curriculum one wonders why so much time is still spent on Greek and Latin in our schools. It cannot be because they give knowledge valuable to any large extent for guidance in living. In fact, they have small claim to a place in the school curriculum because of the valuable knowledge their pursuit furnishes. Their claim to a place in the curriculum rests upon the idea that they are good disciplinary studies.

It has been shown that those subjects which furnish the most valuable knowledge also furnish the best discipline. Therefore, Greek and Latin are over-rated as disciplinary subjects, too. It has also been seen that it never pays best to study any subject merely for discipline when there are so many subjects the mastery of which furnishes the best discipline and valuable knowledge, too.

The Most Valuable Knowledge.—A systematic study of the school curriculum points indubitably to the fact that the most valuable group of subjects in the school curriculum is the *science group*; the most valuable from both the valuable knowledge standpoint, and the disciplinary standpoint.

Science has liberated humanity from the bondage of superstition to a large extent. Science has tunneled mountains, bridged rivers, and spanned continents. Science has harnessed waterfalls to do man's bidding. Science has tamed the lightning to minister to man's wants. Science has prevented plagues, stamped out zymotic diseases, and made it possible for man to inhabit almost every part of the earth. In short, science has been the vitalizing force which has done more to ameliorate the condition of mankind than all other influences combined. Science has enfranchised the human race physically, intellectually, æsthetically, socially, morally, and religiously.

Child Study and the Curriculum.—We will not lose sight of the fact that we started out to see whether our school curriculum is a rational one or not. And in the pursuit of the solution of this problem it has been found out that much time is wasted in school in the pursuit of subjects not the most valuable.

There is also another phase of this subject which has an important bearing upon the rationality of the school curriculum. The question is, Are the subjects

in the school course taught at the time in the child's life when they are best adapted to his stage of development? A curriculum can not truthfully be said to be rational, if the various subjects are not taught at the period in the life of the learner when they may best be taught. For instance, no one would say a school curriculum which provides the study of algebra, of psychology, or of logic for the child of six is rational.

Much systematic, painstaking, and exact study has recently been given to children in the search for the solution of this problem along with many others. The consensus of opinion on this question is pretty accurately stated in the following quotation:

Changes in the Curriculum Suggested by Child Study.—“Our increasing knowledge of the child's mind, his muscular and nervous system, and his special senses points indubitably to the conclusion that reading and writing are subjects which do not belong to the early years of school life, but to a later period, and that other subjects now studied later are better adapted to this early stage of development. What is thus indicated of reading and writing may be affirmed also of drawing and arithmetic.”

The physiological and psychological reasons for the above statement can not be discussed here. Suffice it to say that the study of these things early in school life produces nervous diseases, and arrested development; also, diseases of the sense organs,

particularly of the eyes. There is, too, thus a great loss of time and energy, and bad mental habits are formed.

Child study undoubtedly points to the fact that *nature study, oral history, oral literature*, and the free activity of the larger movements of the body, as in *manual training*, should constitute the school curriculum for about the first four years of the child's school life, and that reading, writing, spelling, drawing, and arithmetic should come later.

So the answer derived from our study of the school curriculum is, that we certainly have not yet a wholly rational school curriculum.

CHAPTER VII.

THE TEACHER.

Importance of the Teacher.—From the standpoint of the purpose of the school the learner is the most important element of the school. But from another point of view the teacher seems to be the most important element of the school. It is true that the school exists for the learner, and without him there would be no need for the teacher, school house, curriculum, or school officers. The development in the child's life is the end to be attained, and all parts and processes of school work are means to this end. The end is always more important than the means in all rational processes. Thus the teacher stands in relation to the development in the life of the learner as means to end.

When the teacher is considered as the element in the school upon which its successful operation most depends, he seems the most important element in the school.

There is much truth in the statement, "As the teacher is, so will be the school." He is the life-giving element in the school. If the teacher is properly qualified, loves his work, and has a sympathetic in-

sight into the lives of his pupils, hardly any thing can make his school a failure.

Duties of the Teacher.—The duties of the teacher are, indeed, many. He must poke the fire, sweep the floor, keep proper ventilation, oversee the care of school grounds, and vigilantly watch school property; tie up cut fingers, doctor bruised heads and limbs, soothe the sorrows of some, and rejoice in the joy of others; encourage the brave, generous, and true, and frown upon the cowardly, selfish, and deceitful. He must assign lessons, hear recitations, correct the wayward, and encourage the good of all kinds.

From such an inventory of the teacher's duties it seems at first sight that nothing can be got but confusion. A little thought, however, will show that these duties may readily be divided into two classes: 1. Governing. 2. Teaching.

Governing.—*Governing is the work of the teacher in keeping the organization running with the least possible friction.* A common error made by the teacher in school government is in thinking that he is a legislator as well as an executive. He thinks this and so acts as to lead his students to think it. No worse mistake than this can be made in school government. Instead of the teacher's thinking that he is a legislator and that the laws of the school originate in him, he should understand that the laws of the school are inherent in the organization itself. The pupils should be led by the conduct of the teacher to appreciate this fact, too, in so far as they are able to do so.

The teacher is governor in that it is his duty to call attention to the laws of the school, explain them, and execute them.

Teaching.—*Teaching is the work of the teacher in leading the learner into those experiences which constantly make him a little more wise and virtuous.*

From this study of teaching it is easy to deduce the following definition of a teacher:

A teacher is one who stimulates the learner to experiences which he would not have without that one's influence.

The teacher's duties in teaching are both positive and negative.

Positive Duties.—Every experience the learner has affects him permanently to some degree. Some organize him toward a higher destiny and some, toward a lower. While the child is naturally born with capacities for becoming good, he is also born with capacities for becoming bad.

“The child inherits not only the good proclivities and propensities of his long line of ancestors, but he inherits also bad feelings and emotions. His heart is not altogether a good heart; it overflows not only in goodness but also at times more or less frequent, in selfishness, rancor, bitterness, cowardliness; in short in excesses and defects of various kinds.”

From the positive side the teacher is to guide the child in the development of all that is good in his nature, and in the acquisition of knowledge which

will furnish guidance in right living. Thus the teacher's positive duties are to arouse the experiences in the life of the child which constantly lift him to a higher plane of living. Such experiences are along six lines: physical, intellectual, æsthetic, social, moral, and religious. And this is what it means to teach considered from the positive side. Thus, *teaching is arousing those experiences—physical, intellectual, æsthetic, social, moral, and religious—in the life of the learner to the end that he may continuously grow into a higher life.*

Negative Duties.—The teacher's negative duties in teaching consist in eliminating the evil tendencies from the child's nature. The teacher is not to lose sight of the fact that the tendencies, propensities, and proclivities for wrong doing born in the child, inherited from his long line of ancestors must be eliminated.

Some teachers make a mistake by thinking the child is naturally good. The child is not moral, neither is he immoral, but he is unmoral; but he may easily develop into an immoral individual, if surrounded by an immoral environment. Whatever immoral tendencies he has are to be suppressed. But these characteristics can not be effectively suppressed in the life of the child by simply attempting to root them out without supplying their places with something. That is to say, education can not be alone negative nor even largely negative. The only safe

plan is to eliminate the bad by building up the good in its place. No teacher or parent will succeed well in educating his children, who always has his eye fixed on the things which the children ought not to do. He should supply the good to take the place of the bad. In teaching, as in algebra, a good way to get rid of the undesirable element is to eliminate it by substitution.

Characteristics of the Teacher.—In studying the characteristics of a teacher one is impressed, at the start, with the fact that there are some qualities which the teacher must have, if he teaches successfully at all, and that there are other desirable qualities which not all can possess. Of the first class *scholarship* is an example, and of the second class *good health* and *fine native ability* are examples. The first class of characteristics may be called *necessary characteristics*; the second may be called *supplementary characteristics*.

Without the first set the teacher must be a failure. The second set, while not absolutely necessary to the success of a teacher, are desirable and facilitate the ease with which success is attained.

Necessary Characteristics.—As above stated, these are absolutely necessary to any marked degree of success on the part of the teacher, and are as follows: 1. Strong moral character. 2. Scholarship. 3. Professional preparation. 4. Energetic, student's habits. 5. The habit of daily preparation. 6. Love

of occupation. 7. Sympathy with children. We will study these somewhat in detail.

Strong Moral Character.—“The teacher should be an example, in person and conduct, of what he requires of his pupils.” This is just as true to-day as when said by Comenius two hundred and fifty years ago. Since the purpose of the school and the aim of education is to make *wise and virtuous men and women*, no influence which does not contribute to that end should ever be brought to bear upon the child. And since we are better understanding the power of suggestion, we are beginning to realize what a powerful influence on the life of the children the example of the teacher has. Slovenly habits of thought; slang, impure English, profanity, by-words; smoking, chewing tobacco; dishonesty, injustice, and selfishness all impress the life of the child and tend to reproduce themselves in him. No teacher who uses tobacco—smokes or chews—who is careless of his English, or who in any way shows himself dishonest or cowardly can be as good a man as he would be without those traits, and since anything which detracts from manhood detracts from the teacher, it is equally true that he can not be as good a teacher as he would be without those traits.

But while all can agree on the desirability of strong moral character for the teacher, to talk of it in the abstract without knowing very definitely what it means is not sufficiently helpful. An analysis will

show that, at the least, the following elements enter into moral character: 1. Knowledge of right and wrong. 2. Truthfulness. 3. Honesty. 4. Justness. 5. Habits of activity. 6. Self-control.

Knowledge of Right and Wrong.—In order for one to have strong moral character, he must have the ability to think out the right and wrong in human activity. A man's motive may be good and the activity prompted by that motive be very bad. To say that a man may have strong moral character and be at the same time ignorant concerning the common laws of life and daily human actions is to place a premium on ignorance. An ignoramus can not be a man of strong moral character.

To hold that an act is good provided it is done with good intentions, notwithstanding much human misery and unhappiness result from it is certainly a doctrine very pernicious and baneful in its results.

Truthfulness.—It seems so evident that truthfulness is an element of morality that no study is needed to prove it. There is one aspect of this question which enters largely into the work of the teacher. Teachers have feared to say "I don't know," lest pupils would lose confidence in their ability. It does not necessarily follow that, if the teacher honestly acknowledges that he does not know, when such is the case, the pupils will lose confidence in his ability. If it were so, it would still be a question whether it is not preferable for students to lose confidence in one's

ability than to lose confidence in one's truthfulness. But students are, as a rule, reasonable. They do not expect that the teacher will never make a mistake, nor that he will know the correct answer to every question that arises. They further know that they have no right to expect so much, but they also know that they have a right to expect the teacher to be perfectly truthful.

Honesty.—Honesty and truthfulness seem much the same thing, as elements of character. They however emphasize different aspects of moral character. Truthfulness refers to the representation of things as they are, and so refers to one's representing things thus. Honesty refers to uprightness in the actions of one person to another. In honesty questions of advantage and disadvantage are involved. There are many ways in which a teacher's honesty is involved in school work. The student's instinct for truth and honesty will assert itself to the extent that he will appreciate these qualities in the teacher. And pupils are quick to detect these characteristics as well as their opposites.

It is a great misfortune for students to be under the influence of a teacher who is untruthful and dishonest. Their opportunities for receiving good from such a teacher are greatly lessened. Even when the teacher endeavors honestly to benefit his students, his influence will lack force and effectiveness. Students will not hear what he says when they know what he is.

“How can I hear what you say, when what you are is thundering in my ear.”

“The teacher can not be a signboard. He must go the way he points.”

Justness.—In school work, justness does not mean that all students must be treated alike. That all students must be treated alike is a traditional maxim of school which has been pernicious and evil in its effects. This maxim usually refers to corrections and rewards. Scarcely any one would think that in teaching all are to be taught in the same way, but in the matter of corrections and rewards the idea prevails to a greater or less extent that all students are to be treated in the same way. In the matter of being just in rewards and corrections the individual differences of children must be taken into consideration as well as in the teaching act. No two children respond to stimulus just in the same way nor in the same degree.

It requires some firmness on the part of the teacher to be just. The teacher may err in two ways in matters of justness: 1. He may err because of kindness. 2. He may err from a hypercritical spirit.

Too often the teacher because of kindness fails to have the student see just what his paper or recitation is worth. A paper graded on the scale of a hundred is marked seventy-five per cent. when justice would show it to be worth no more than thirty or forty per

cent. A recitation worth little or nothing is smoothed over and patched up by the teacher till the pupil is deceived into believing that he has really done something creditable.

Justice may at times seem severe, but its very severity is educative in a high degree. Justice after a period of growth always brings a fruitage much to be desired. The teacher's profession is in need of teachers with courage to give children credit for just what they merit, no more and no less.

Habits of Activity.—No one can be a sluggard and be a moral man. Morality means activity. There are people who think that if one does no active harm he is entitled to be called good. That is to say, some hold that activity is not a necessary element of goodness in a man. A little study, however, shows the fallacy of this view. If one asks himself the question, "What is a good lead pencil?" or "What is a good knife?" and stops to think out the answer, he will find that he will reach the conclusion that the lead pencil or knife is good which does its work well. That is, goodness refers to the ability or adaptability of a thing to do its work. And this is the meaning of goodness as generally understood concerning all things except man. That men are an exception to this general truth is not reasonable.

Also, if a man who does neither active good nor bad and so does nothing is good, the question, "What is he good for?" suggests at once the answer, "good-for-nothing."

Under normal circumstances, a strong moral character means a life of intense activity.

The teacher's profession has no need of teachers who find nothing to do after 4:00 P. M. and before 8:30 A. M., and least of all have our children need for such teachers.

Self-control.—It seems unnecessary to emphasize the fact that self-control is an element of morality. A brief study of the lines of self-control is, however, of some help.

For our purpose here, self-control may be divided into the following aspects:

1. Control of the appetites.
2. Control of one's actions.
3. Control of one's language.

No person who lets his appetites go without restraint can be a moral person. "No heart is so pure, no soul is so noble, that physical appetite long unrestrained does not corrupt. Every mother has it in her power to *form* the tastes and appetites of her children. They are always *formed*, but the process of *re-forming* is frequently a heart-breaking failure." The teacher may have an influence in this forming of tastes and appetites, but not with much effect until he has correctly formed his own.

No teacher succeeds well who has not learned to control his actions in all aspects of school work. Many a teacher has lost his opportunities for doing good in a school by lack of ability to act calmly and

reasonably under trying circumstances. A successful teacher must guard his actions not only under trying circumstances, but all the time, even under the most usual circumstances.

Controlling one's language is certainly an element of moral character under any consideration, but the control of the teacher's language is an element of great importance in successful teaching. A word of encouragement here, a kind word there; a word of approval for this effort, a word of disapproval for lack of effort; a mild, pleasing tone at all times; such, other things equal, are among the important elements that go to make the ideal teacher. Sarcasm, irony, blustering, boisterous tones keyed to a high pitch are among the most disorganizing attributes a teacher can possess.

Scholarship.—That a teacher must possess scholarship to teach at all is unquestioned. No one can teach what he does not know, and it is equally true that no one can teach *well* what he does not know well. Nothing gives more confidence to the teacher, and nothing is more inspiring to the pupils than to know that the teacher is *master* of his subject.

A school subject is a group of facts, these facts having a relation peculiar to that subject alone. The teacher who is master of his subject not only sees these facts, but he sees the relation of these facts to each other and to the subject as a whole. With such a knowledge of his subject the teacher sees the end from the be-

ginning; he is able to distinguish the important from the unimportant, and to organize his work. A lack of scholarship makes the teacher a slave to the textbook, instead of being, as he should be, a source of self-directive energy in the subject.

It is a very deplorable set of conditions which compels teachers to teach subjects about which they know barely enough to make a grade for license. First class teaching can never be done under such circumstances.

Professional Preparation.—Professional preparation from the teacher's point of view means a mastery to a greater or less extent of those subjects which will furnish peculiar guidance to the teacher in his actual work in the schoolroom. Everyone who enters the profession of medicine, law, or the ministry recognizes the need of study which will give guidance in his special work. That is to say, men of those professions recognize the need of special preparation for professional work. This is not less true in the teacher's work than in the other professions. A brief study shows that the teacher's professional preparation consists in general of the following:

1. A systematic knowledge of the laws of life, both physical and mental.
 2. A knowledge of the purpose of education.
 3. A knowledge of current, approved methods.
 4. Practice in the art of teaching.
- A short study of each of these is beneficial.

A Knowledge of the Laws of Life.—The laws of life are those truths of the body and the mind which all physical and mental growth obeys during life. They are of two general classes: physical and mental. The teacher learns physical laws in the study of physiology and hygiene; and the mental laws are to be learned in the study of psychology.

The question before us for study is, *Must the most successful teacher have a scientific knowledge of psychology, physiology, and hygiene?* We can study this question in the two following ways:

1. We can depend upon our own ability to think it out correctly.

2. We can study what our foremost educational thinkers have thought about it.

What Our Own Study Shows.—If the teacher knew absolutely nothing of the laws of life, he could not teach school a day, an hour, or even a minute. He could not tell whether beef or arsenic would be food; whether a child would be comfortable in an atmosphere at the freezing point or at the boiling point; whether he would be more comfortable sitting down, running, or standing on his head; nor could he decide on any hygienic or physiological question whatever concerning the child's welfare. Neither could he tell how, when, or why to teach any point of knowledge. He would not know whether to begin the study of algebra, logic, or reading with the child of six or with the child of sixteen. Without some

knowledge of the laws of life, the teacher could not (1) provide a suitable course of study; (2) arrange his school into classes; (3) assign lessons suitable to his classes; (4) interpret his pupils' conduct; (5) know whether his pupils grasp the meaning of the lesson. In short, he could not teach at all.

Therefore, to teach school at all a teacher must know something of *physiology*, *hygiene*, and *psychology*. Everyone of course knows something of these subjects, but the knowledge of most is what is called *ordinary knowledge*, and not *scientific knowledge*. An examination of ordinary knowledge shows it to be possessed of the following qualities: it is *incomplete*, *fragmentary*, *unorganized*, *contains many partial truths*, *has error intermingled with the truth*, and is not usable to as high degree as it should be.

Scientific knowledge is found to be possessed of the following qualities: it is more complete, more connected, better organized, contains more whole truths, has the error eliminated to a large degree, and is usable to a large extent.

Now, the question is, Which will help the teacher more in teaching, the ordinary knowledge or the scientific knowledge of physiology, hygiene, and psychology?

Everyone knows something of science, the knowledge having been picked up in fragments from experience, but it is not this knowledge which has most caused the progress of the world. The knowledge

which has caused civilization to move forward with such strides in the present century has been that which was scientific.

Thus the question we started out to study reduces itself to the following: First, a teacher must have some knowledge of physiology, hygiene, and psychology to teach at all. Secondly, the teacher through everyday experience may acquire an ordinary knowledge of these subjects. Thirdly, the teacher may acquire through study a scientific knowledge of these subjects. Fourthly, scientific knowledge is the most valuable for guidance. Fifthly, the teacher should have the *scientific* knowledge of physiology, hygiene, and psychology. Sixthly, *the most successful teacher must be an earnest student of physiology, hygiene, and psychology.*

Thoughts of Teachers.—There are two classes of teachers who oppose the study of psychology as a part of the teacher's professional preparation. Those of the first class know something of psychology only as an abstract science, not as an applied science. This class sees nothing in psychology but discipline, because to them there is no such a thing as educational psychology. There are but few of this class, the most of them having belonged to an older school.

Those of the second class, a very large class, know little or no scientific psychology, and so oppose it, because to acknowledge the need for it is to ac-

knowledge a criticism on themselves. With the second class *the wish has been father to the thought*. They oppose it perfectly consistently. If one knows no psychology, his knowledge of psychology certainly will not help him any in teaching.

The rapid strides with which pedagogical work has been coming into schools of every kind is evidence of what is being thought on this subject. Every normal school, private and public, every college and university now has its pedagogical department. And this state of things is very recent. Now, psychology is the basis upon which the whole superstructure of pedagogy stands.

Teachers' examinations almost everywhere now demand a knowledge of professional subjects, too.

Thoughts of the Thinkers.—William T. Harris, United States Commissioner of Education, and an eminent thinker and educator says: "If the teacher knows nothing of psychology as a science, he must copy in detail the methods of others, and rely on his general knowledge of human nature derived from experience. Like all uneducated workmen, he may succeed after a sort by following tradition unaided by science, but he will not develop beyond a narrow degree of perfection in details. He will have no insight into the general relations of his work. He can not safely deviate from routine, nor venture to criticise his own work or the work of others. If he has learned good models, he may pass for a good teacher;

if he has learned bad ones, he is unable to perceive their defects. Possessing no scientific knowledge of the mind he can not lift himself above the details of his art to the principles which govern them, and become himself an original source of directive energy. Some knowledge of the mind every successful teacher must have, although in so many cases it is unsystematic, and consequently unscientific.”

Herbert Spencer, the philosopher, psychologist, and educator, says: “Grant that the phenomena of intelligence conform to laws; grant that the evolution of intelligence in a child also conforms to laws; and it follows inevitably that education can be rightly guided only by a knowledge of these laws. To suppose that you can properly regulate this process of forming and accumulating ideas, without understanding the nature of the process, is absurd. How widely, then, must teaching as it is, differ from teaching as it should be; when hardly any parents, and but few teachers, know anything about psychology.”

William James, an eminent psychologist, says: “It (a knowledge of psychology) certainly narrows the path for experiments and trials. We know in advance, if we are psychologists, that certain methods will be wrong, so our psychology saves from mistakes. It makes us, moreover, more clear as to what we are about. We gain confidence in respect to any method which we are using as soon as we believe that it has theory as well as practice at its back. Most of

all it fructifies our independence, and it reanimates our interest."

Without multiplying quotations, let it be sufficient to say there is scarcely an educator of note or good reputation among civilized peoples who does not speak in the same general way on this subject.

A knowledge of psychology is absolutely no guarantee of a good teacher, but it is just as true that no one can be more than a successful imitator as a teacher without a knowledge of psychology. To be an artist in one's work requires a mastery of the principles underlying that work.

Purpose of Education.—The purpose of education has been studied before, but it remains to study why the teacher should have as nearly correct views as possible of the purpose of education. And since the purpose of education and the purpose of life are the same, the question to be studied is the importance of having the correct view of the purpose of life.

One may possibly wear his religion on Sundays, and put it off on week days. But his view of the object to be accomplished by education will show itself in all he does. Every act in the schoolroom will be affected by it. If he has wrong ideas of the purpose of education, every assignment will be tinged by it; every recitation will be colored thereby; and every correction or direction will be affected by these false ideas. If he has right ideas of life and education, they will manifest themselves in all his school work.

If he has no definite ideas of the purpose of education and life, his work will be purposeless, scattering, disorganized, and fragmentary. A clear, fervent purpose will draw the teacher's work toward its accomplishment as surely as the magnet attracts the particles of steel.

Knowledge of Methods.—The teacher should know current approved methods of teaching the various school subjects. The notion that students can graduate from the primary school or the high school and go into the schools and teach well without having studied approved methods is entirely wrong, and baneful, and pernicious in its influences. The appallingly bad work done by such teachers all over the country is evidence of this truth.

It is still held by many that if the teacher knows his subject well this is a guarantee that he will teach it well. This, however, is not at all necessarily true. Nothing is commoner in school work than teachers who know their subjects well, but who teach poorly.

“The professional training of teachers is not generally high. Many people still entertain the idea that to know a subject is a guarantee of the ability to teach it. Nor is it easy to demonstrate the fallacy of this notion to those who are ignorant of the laws that govern the workings of the human mind.”

The teacher who knows the method of teaching any subject knows (1) *the means to be used*; (2) *how correctly to use them*; (3) *the natural processes of the learner's mind in learning that subject*.

To any one who will think it is plain that to know this is of equal importance with knowing well the subject. This point will receive full study in chapter IX.

Practice in the Art of Teaching.—One becomes skillful in doing anything by practice. Thus one becomes skillful in writing by practice in writing; skillful in riding a bicycle by riding; skillful in skating by skating; skillful in ball-playing by playing ball. This is a principle that holds true in the acquirement of any art. And since teaching is an art, the principle applies to it. So a teacher to become skillful must have practice in the art of teaching. This practice may be obtained in two ways:

1. A student may obtain it by teaching as a student-teacher under the direction of a skillful training-teacher in a training school.

2. A teacher may obtain it by teaching in his own school without having had any practice before, and thus acquire the skill by experience without the direction of a training-teacher.

It is evident that learning to teach in the latter way is pretty hard on the pupils upon which the teacher practices. It is too much a matter of experiment, and is very much like a physician's learning to practice medicine by experimenting upon his patients. But everywhere almost the children in our schools are victims of such experimenting.

It is truly a deplorable set of conditions which compels persons to teach who have merely enough education in the subjects to secure licenses, and it is certainly not a less deplorable set of conditions which compels teachers to experiment thus with the innocent lives of our children.

Energetic Student Habits.—The living teacher is a constant worker. He ever keeps before him a high degree of excellence in all lines of work toward which he constantly strives. A teacher never reaches a place in his school work where he can safely rest on the oars and drift. There is absolutely no way to have a thorough, fresh knowledge of the subjects taught; to keep in mind the best educational methods and ideals; to maintain a healthful interest in one's profession but by constant industrious student habits. Everything that lives progresses, and nothing makes progress more rapidly than the science and art of education. One as a teacher simply can not rely upon his past preparation to guide him safely and successfully through in his teaching. He must keep up with educational progress or he will be an "old foggy" and a "fossil" sooner than he is aware. The educational world demands thoughtful, progressive teachers.

"To reach the port of heaven, we must sail sometimes with the wind and sometimes against it,—but we must sail, and not drift nor lie at anchor."

Daily Preparation.—No teacher can succeed well without the habit of preparing his lessons for his

daily recitations, and for this reason the habit of daily preparation is regarded a necessary characteristic of the teacher. A teacher never gets to a point where he knows a subject so well that he can do his best work without making special preparation for each lesson. This is true for several reasons. First, no lesson is ever taught at any two times under the same set of circumstances. Students to whom the lessons are to be taught will vary in capacity and other particulars. So each lesson must be prepared with the view of teaching it to the particular class one has, if the very best teaching is to be done.

Secondly, a teacher who teaches without daily preparation shows staleness in his work; his teaching lacking all the freshness, vigor, and interest born of seeing something new in the subject. This results from the fact that going over the same thing again and again without seeing anything new of necessity grows monotonous and uninteresting. While on the other hand no one ever knows a subject so well but that he can see something new in it by his study in daily preparation.

Thirdly, for most teachers it is the only means of mitigating the evils which usually result from a lack of sufficient knowledge of the subjects taught.

The teacher who will succeed best is the one who "gets out" his lessons daily. This he expects of his students, and this his students have a right to expect of him.

Love of Occupation.—Every one knows with how much more zest work which one likes to do is done than work which one does not like to do. Too many teachers make teaching a mere stepping-stone to some other kind of work, and so do not put their hearts into it and really prepare themselves for the work. Not being in love with teaching is largely the cause of this.

No teacher who does not like to teach school can show so much interest, enthusiasm, aggressiveness, and progressiveness in his work as he would if he loved it. Love for the work lightens the labor; it puts the spirit of life into it. Otherwise teaching becomes the veriest drudgery, a thing to be endured only.

Sympathy with Children.—Sympathy with children has been regarded by many great educators as *the highest and most essential* characteristic of the teacher. The ability of the teacher to rejoice with his students in their joys and triumphs, to grieve with them in their grief, in short, to be in sympathetic touch with their lives in all phases is the characteristic above all others that enables the teacher to touch the lives of his children and uplift them. Such a teacher is one of heart power—the one who can love every child, the erring and wayward as well as the good.

It is unfortunate for the children that circumstances are such that teachers largely teach school at a period of life when they have the least sympathy

for children. From sixteen to thirty is the period in life in which young men and young women have the least sympathy for children. This is the period in which young men and young women are most interested in themselves and in each other. Before sixteen and after about thirty they have more sympathy with children. But between sixteen and thirty is the period in which a large majority of teachers do their teaching.

Sympathy for child life is idealized in the following, said to have been found among the unpublished papers of Charles Dickens, the great educator and lover of children:

They are idols of hearts and of households;
 They are angels of God in disguise;
 His sunshine still sleeps in their tresses;
 His glory still beams in their eyes.

Those shouts of home and of heaven
 Have made me more manly and mild,
 And I now know how Jesus could liken
 The Kingdom of God to a child.

My heart grows as tender as woman's,
 And the fountains of feeling will flow,
 When I think of the paths steep and stony
 Where the feet of these dear ones must go.

O, the mountains of sin that o'er-hang them!
 O, the tempests of fate blowing wild!
 But I know there's nothing on earth more holy
 Than the innocent heart of a child.

Desirable Characteristics, Though Not Absolutely Necessary.—There are several characteristics which

greatly facilitate a teacher's success, but which not all teachers can possess, and without which success in teaching may still be attained. A few of the most important of these will be briefly studied: 1. Good health. 2. Natural aptitude. 3. Personal magnetism. 4. Mastery of the circumstances.

Good Health.—The relation between the mind and body is so close that whatever in any way affects the efficiency of bodily functions also affects the mind. Dispositions and temperaments are results of bodily conditions. To do one's best work of any kind requires a healthy, vigorous, vivacious condition of the nervous, digestive, circulatory, respiratory, and muscular systems. Aggressive, vigorous, efficient work is the accompaniment of good health.

Ill health on the other hand induces weakness of effort, irritability of mind, despondent and depressed states of spirit, discouragement and dreariness fatal to all successful teaching and school government. Ill health makes all work drudgery, amusement a bore, and life a misery and a failure. *The longer one lives the more fully he appreciates this fact.*

Therefore, one of the highest duties towards his school is for the teacher to make all reasonable exertion to keep his health uniformly excellent.

Natural Aptitude.—No doubt there are persons who are to some extent natural teachers; that is, are naturally adapted to teaching, while others have no natural ability as a teacher. There are persons who

naturally show an aptitude in music, while others can never reach any marked degree of proficiency in music. The same is without doubt true of teachers. This natural aptitude is a very desirable characteristic, and one that must be possessed by every teacher to some extent, but it is one which not all, not even a majority of teachers, possess to a large extent. That most persons can become good teachers with proper preparation is an encouraging truth. However, it is just as true that there are some who when they attempt to teach have *entirely* missed their calling. There are some whose native ability for teaching is such that they will never succeed at this work. Such people, who may be most excellent men and women, may succeed well at some other line of work. Froebel and Pestalozzi succeeded well at nothing else but teaching.

Personal Magnetism.—This is the characteristic of the teacher which draws people to him. It is the endowment of the teacher which makes friends for him both in school and out of school. It is not, as some suppose, altogether an endowment with which one is born. It may be attained to by painstaking care. Some of the elements which go to make it up are *general friendliness, sympathy, courtesy, charity, frankness, and pleasant greeting*. These elements may all or any of them be attained by careful cultivation.

Mastery of Circumstances.—By a mastery of circumstances is meant the ability of doing the proper

thing next under any set of circumstances. There are persons who seem never to know what to do next under any set of circumstances except the most usual, while again there are persons who seem always to know what to do in any set of circumstances. Now the teacher has much need of belonging to the latter class, for a school is a place famous for the uprising of unusual circumstances. A teacher must possess the ability to some extent to meet the occasion, otherwise he can hardly get along for a day. But perhaps not all *can* possess this characteristic to the extent desired.

Illustration.—A student upon an occasion of failure in recitation in a class, insisted he had no right to believe what he could not see with his eyes. Various illustrations were given by the teacher to show that the position taken by the student was not only untenable but unreasonable. The student would not be convinced of his error. The teacher mildly and pleasantly asked the student if he believed he had a brain. A smile went around the class and the student took his seat without a word.

CHAPTER VIII.

THE MANAGEMENT OF THE SCHOOL.

Importance of.—There is no subject that enlists the attention of the teacher of more far-reaching importance than this one of school government. Upon the successful solution of the question, How best manage a school? depends the efficiency of all the school processes. The teacher who fails in school government fails in all, because all other aspects of school work bear an organic relation to school management and their efficiency depends upon it. To the beginning teacher it is the most vital school question. It is the rock upon which more teachers in their careers have been shipwrecked than upon any other. It has caused more sleepless nights, more shattered nervous systems, more hot, scalding tears than any other aspect of school work.

Kinds of School Government.—There are to be found in school two kinds of school government: government by force, or fear, and government by direction rather than by suppression. The following names are respectively appropriate: 1. Police government. 2. Rational government.

Police government is by physical force, or by fear on the part of the pupils. Such government is always

accompanied by a great deal of friction and bad feeling. It does little or nothing toward giving the pupil habits of right self-control and self-direction, the end of all school government.

Rational government aims to lead the pupils to do right because they love the right. It is to be accomplished by reasonable means of firmness, kindness, and justice. It accomplishes much toward making pupils self-governing, toward giving them habits of right self-control and right self-direction.

The School an Organization.—In the study of the nature of the school in a previous chapter, it was seen that the school is an organization, and that the ideas which are to be found in an organization, according to the best use of the term, are:

1. It is a complex whole.
2. This whole is made up of individual parts.
3. These parts have a harmonious working relation.
4. These parts work for one common end.
5. The whole is self-acting and self-adjusting.

The school is made up of pupil, teacher, curriculum, school officers, etc., all constituting a complex whole, the individual parts being patrons, school officers, children, teacher, etc. These all work together in such a way as not to produce friction, and so as to economize energy as far as possible. This is what is meant by a harmonious working relation. The education of the learner is the common end for

which all these parts work. The school as a whole acts—originates its program, classes, recitations, and sets up ideals and strives to attain them; it also, when it gets out of order, proceeds to adjust its own difficulties. In this way it is self-acting and self-adjusting.

The Fundamental Law.—When the school is doing the work of educating the pupils the most efficiently, it is found to be when there is the most *unity* in it. And when it is doing its work the most poorly, it is found to be when there is the greatest lack of *unity*. Then the law underlying all the complex activities of the school to which they conform in order to contribute to the highest success of the school, is *the law of unity*.

By unity is meant that *any act of any element of the school furthers any other act of the same element or any act of a different element toward the accomplishment of the purpose of the school.*

It is evident that unity is the thing which will contribute to the success of the school always. And it is equally evident that if one element of the school so acts that his activity antagonizes the acts of any other element, or other acts of his own that it works against the success of the school—it breaks the law of unity.

From the study so far the hint is that the problem involved in school management is *the maintenance of the law of unity.*

Source of the Law.—The laws of any organization are inherent in the organization and are not externally imposed. The law that determines that the plumule, the growing point of the stem of the plant, grows toward sunlight and air, and the law that determines that the radix, the growing point of the root, grows from the sunlight and air are in the inherent nature of the plant. No externally imposed conditions can change the laws. The botanist can discover these and many other laws of plant life, but he can make no laws for the plant. No one can legislate for the plant. Legislatures and parliaments might pass a law that hereafter plants should grow, blossom, and produce fruit without moisture, sunshine, and heat, and all nations of the earth might ratify this law, but the plants would go on in their own seemingly stubborn way, and demand for their growth, heat, light, and moisture.

The law of the school is as much a part of the nature of the school as the laws of plant life are a part of the nature of the plant.

Rules.—The various aspects of the law of unity are rightly to be considered the *rules of the school*. Some writers have attempted to make a distinction between the law of the school and the rules of the school. It has been said that a rule of the school is an externally imposed regulation made by the teacher, director, trustee, or superintendent, and that a law of the school is some truth inherent in the nature of

the school according to which the various elements act. This is not a true distinction; and to attempt to make such a distinction is bad, because it is a source of mischief. The right meaning of a rule is, that *it is a minor law*. The various aspects of the law of unity are thus the rules of the school. The following is a formal statement for it: *A rule of the school is some aspect of the law of unity.*

The correct ideas of the law and the rules of the school should be thoroughly fixed in the lives of pupils and teacher.

Aspects of the Law.—An analysis of the law of unity in the school reveals various lines of unity to be sought, the most prominent of which are the following:

1. Unity in the organization as a whole.
2. Unity between teacher and pupil.
3. Unity between the pupil's real and ideal self.

Before taking up the study of each of these in detail, it is worth while to notice that this is only a very general analysis. A minute analysis would reveal almost an endless number of aspects of the law of unity. For instance, there must be unity between patrons and teacher; between patrons and children; among school officers; between the school officers and teacher; between the school officers and children, and among the children themselves. Each one of these unities might in turn be further analyzed.

Unity in the Organization as a Whole.—There is complete unity in the organization as a whole when every element of it is so acting that each act furthers the influence of any other act of any element toward the accomplishment of the common end—the education of the learner.

The thought of what unity in the school as a whole consists of is of the highest importance to every conscious element in the school. If this thought can be so firmly fixed in the minds of each person—teacher, learner, school officers, and patrons—connected with the school that it will become a part of his life, the government of the school will be largely accomplished.

An appreciation of the meaning of the law of unity in the organization as a whole will reveal the fact that it is not the learner alone, as usually thought, who violates the rules of the school, but almost as often the teacher, the patrons, or the school board.

Legislators themselves may break the rules of the school by making “school laws” that break the unity of the school, and militate against the integrity and efficiency of school work. It thus appears that there is a distinction between the law of the school and what often goes into the statutes as “school laws.”

When a school board secures a teacher for any other reason than because of the ability of that teacher to do good teaching, its members break the law of the school. That teachers should be chosen

from any other consideration than their ability to minister to the lives of their pupils is a pernicious doctrine which should have the condemnation of all honest and sensible people in the strongest possible terms. Poverty, patronage, nepotism, machine politics, church influences, and so on, of themselves should have absolutely no place in the considerations when a teacher is to be chosen. A school board will hire a teacher year after year wholly incompetent and unfit for a teacher, because she is poor and has an invalid mother; they will not hire competent and proficient married ladies to teach because perchance a married lady who teaches will support her worthless husband. Or they will trade patronage, a teacher being hired because she trades at the store which is owned by a member of the board. Such school boards are the worst enemies of the schools and the children who are in them. There is no economy, no justice, nor common sense in thus injuring the lives of a room-full of children, thirty or forty, year after year, in order to furnish a place for a teacher who is incompetent.

One gets heart-sick at the incompetency, dishonesty, or imbecility of a school board which will take into consideration the many things brought to bear to secure places for incompetent teachers even at the disregard of the influence on the growing lives of the children. The doctrine that sets anything above the welfare of the pupils in the choice of teachers is wholly indefensible.

In this manner is the law of the school broken by school boards to their everlasting dishonor and disgrace; and the conditions of our school system which permit this pernicious custom constitute the most serious defect of the American schools to-day, one whose influence is baneful alike to pupils and teachers.

The Power of Sentiment.—By sentiment is meant a feeling for or against anything because of a knowledge concerning that thing. Sentiment is a powerful factor in controlling people's lives and actions. In fact life is almost wholly controlled by sentiment.

A certain church community has a sentiment against an organ in church, and a pastor comes and lauds the advantages of the church organ. One can easily judge the standing of that pastor in that community. The same sermon might be preached in another community with most satisfactory results. In a town now in mind almost everyone plays at cards, and any new-comer who refuses to play is regarded as unsociable and ridiculous. The best church people in this town do not object to cards, so to play at cards has no bad effect upon one's reputation in this town. In another town now in mind, to play at cards is placed in the category of heinous crimes, so to play at cards here would ruin one's reputation and destroy his usefulness in this community. What is the difference in the two places? The answer is a difference in sentiment.

Since sentiment is thus so strong a factor in determining people's actions, it may be made use of

very advantageously in school government. If there is some line of conduct which breaks the law of unity in the school, the most potent, as well as the most rational, means of controlling it is to establish a sentiment against it in the school. And if there is some line of conduct beneficial to the school, the surest way of introducing and maintaining it is to establish a sentiment in favor of it.

The Main Line of School Government.—It will be found then that the main work of the teacher in school government is to establish a proper sentiment with respect to the following five points:

1. The law of the school is inherent in the school because of the pupil's part in it.
2. The pupils as much as the teacher help to make the rules of the school.
3. The teacher, pupils, school officers, or patrons may break a rule of the school.
4. The pupils as well as the teacher help to keep the rules of the school intact.
5. The ultimate object of the school is the highest good of each pupil.

If teachers can establish a strong sentiment for that which is wanted and against that which is not wanted in school the government of the school will largely care for itself.

“The main line of work running through the management of a school is that of developing in

the thought of the pupil the laws which are in the school because of his membership in it.”

Behavior, or Conduct.—Behavior in school is often thought of as applying merely to the student, but a true view shows that conduct with reference to the school involves the actions of the teacher, pupil, patron, or school officer. *Conduct in school is one's bearing toward the unity in the school.* Good conduct is that which maintains or tends to maintain the unity in school; bad conduct is that which breaks or tends to break the unity in school. That which is good behavior is right in school, and bad behavior is wrong in school.

Illustration.—Whispering as a rule is wrong in school, because it breaks the unity in several ways. First, it breaks the unity between the teacher and the pupil, because it is discourteous to the teacher; and when the pupil whispers he breaks the unity of thought between his own mind and the mind of the teacher. Secondly, it disturbs others in the class, is noisy, and disorderly. Every teacher should set the stamp of strong disapproval upon whispering in school by showing the students that they are much more gentlemanly and lady-like without it.

Unity between Teacher and Learner.—It is in the unity between the teacher and the learner that the life of the learner comes into vital touch with the life of the teacher. There is unity between the teacher and the learner when there is *a mutual furtherance* in their acts toward the education of the learner.

This unity has an important influence upon successful teaching. No teacher can do his best teaching to a student when he is aware that there is antagonism between that student and himself—when he does not like the student or when he knows the student does not like him. And no student can do his best work for a teacher when he does not like the teacher or when he knows the teacher does not like him. From which it results that the teacher should make all reasonable efforts to maintain cordial relations between himself and his students. These cordial relations should manifest themselves at all times both in the recitation and out, if this unity is to be maintained.

Unity between the Learner's Real and Ideal Self.—There is unity between the learner's real and ideal self when each act of his life lifts him from a lower to a higher plane of living; when through his action the *I am* becomes constantly what was the *I ought* just before the act.

From this it appears that constant, perfect unity between the real and ideal self of the learner can never be more than approximated, for to attain to such unity constantly would be an ideal growth toward self-realization.

To make the learner conscious that every act of his life leaves a permanent effect and influence on his life, and that every act which brings about unity between his real and ideal self influences him for good,

and that every act which breaks this unity or tends to break it affects him for the worse, is to make him conscious of the disturbing struggle in life. When the learner sees and *fervently feels* the nature of this struggle he is naturally unwilling to do those things which will degrade him, but aspires to a higher life constantly.

Thus in maintaining the unity between the student's real and ideal self, the school is fixing the habit with him of right living under any circumstances. And *this—to give the learner the habit of self-control and right self-direction—is the ultimate end of all school government.*

Unifying Conditions.—Unity in school is not best attained directly, but is best attained indirectly by establishing unifying conditions. With the proper unifying conditions established unity follows as a natural result. Thus the establishing of unifying conditions is a means to unity as an end.

Unifying conditions might be analyzed into many aspects, but time will permit the study of only the following important aspects:

1. Unifying conditions in the organization as a whole.
2. Unifying conditions between teacher and learner.
3. Unifying conditions between the learner's real and ideal self.

Unifying Conditions in the Organization as a Whole.

—Unity in the organization as a whole means that all the elements of the school so act that each act furthers the influence of any other activity of any element toward the accomplishment of the common object—the education of the learner.

Now, what is the condition which preeminently brings about this unity? The answer to this question is, the condition above all others for unity in the organization as a whole is the proper sentiment toward the nature of the school and its work; that is, the proper sentiment toward the following points as stated before:

1. The law of the school is inherent in the school because of the pupil's part in it.

2. The pupils as much as the teacher help to make the rules of the school.

3. The teacher, pupils, school officers, or patrons may break a rule of the school.

4. The pupils as well as the teacher help to keep the rules of the school intact.

5. The ultimate object of the school is the highest good of each pupil.

This condition estimates every act of every element of the school in terms of its ministry to the welfare of the pupils. It means the best is none too good for the pupil. The best teacher, the best school house, the best books, the best school board, the best

superintendent, and the best apparatus are due the pupils.

And any school officer, teacher, or superintendent who purposely, or through neglect, does less than to strenuously exert himself to secure those conditions is not loyal to the charge entrusted to him.

Conditions of Unity between Teacher and Pupils.—The most important condition of unity between teacher and pupils is *the spirit of good will and cordiality*—the feeling on the part of the pupils that their teacher is earnestly trying to do them good, and the feeling on the part of the teacher that the students believe that he is earnestly trying to help them on toward a wise and virtuous life. This spirit in school is the most potent condition of unity between the teacher and his pupils.

A second important condition of unity between the teacher and pupils is the school-room. It is the place where the outward form of unity in the school is maintained. It is the place where the students come together for the work of the school, and it may be made a positive influence for securing unity.

“It must be more than a secure, quiet, and comfortable meeting-place for teacher and pupil; it must have a positively elevating influence, bringing the pupil, by its active toning power, into the higher life and mood of unity with the teacher.”

The schoolroom should be a place of harmony, peace, and beauty; pleasing, attractive, and homelike.

It should have clean and beautiful floors and walls, with some harmony between the two. There should be some decoration in the form of some well chosen pictures, not many, though, some casts, and some vases and flowers; and whatever else good taste suggests to make it pleasant, pure, harmonious, and admirable. The general tone of such a schoolroom constantly tends to induce the attitude of mind favorable to the unity of the pupil with his teacher.

The Purpose of the Schoolroom.—The purpose of the schoolroom as a unifying condition may be analyzed into the following three points:

1. To bring the learner into the presence of the teacher.
2. To make the teacher and learner comfortable.
3. To minimize diverting influences.

Presence of Learner.—In the schoolroom the learner is brought into the presence of the teacher. It is necessary for the pupil and teacher to work in the same atmosphere. No first rate teaching can be done except in the presence of the learner. An attempt is sometimes made to teach by correspondence, but such teaching lacks the life, flexibility, and force that come from the personal contact of teacher and learner. In the presence of the student the teacher can adapt his teaching to the moods, attitudes of mind, and peculiarities of each individual. Thus only in the presence of the student can the teacher best lead him to think, experience the feeling, and will as he should.

Also in teaching it is necessary to have the pupils in easy communicable relations. The minds of pupils can not keep in touch with the mind of the teacher in the teaching act unless the pupils can without difficulty see and hear the teacher. If students must crane their necks to see the teacher's face and gestures, and strain to hear his words, it is safe to say unity will not last long under such conditions. Students will naturally make a few spasmodic efforts under such circumstances to maintain the unity between themselves and the teacher, but the tension being too great, they will soon settle down, the unity broken, to await the end of the recitation.

Communicable relations demand that the schoolroom be not too long, nor too broad. Students can not hear the teacher well more than thirty feet, and can not see the teacher well from the sides if the width of the room is more than twenty-four feet. All school authorities are agreed on these dimensions for a schoolroom. So from the standpoint of school government, as well as from the hygienic standpoint, no schoolroom should be larger than twenty-four by thirty-three feet.

Comfort of Teacher and Pupils.—Much of the noise and friction in school arises because the pupils are uncomfortable. No student should be expected to work quietly who is uncomfortable to any great extent. While the schoolhouse is to provide for the comfort of pupils and teachers, many of them cer-

tainly fail in this to a remarkable degree. When students and the teacher are uncomfortable, the unity of teacher and pupils is broken in that their attention is drawn to their bodily discomfort. Thus no student or teacher can do his best work under conditions of bodily discomfort.

There are at any rate four things connected with the schoolroom which will contribute to bodily comfort: 1. Comfortable seats. 2. Proper temperature. 3. Proper ventilation. 4. Proper lighting.

Not only from hygienic reasons, but from reasons of school government should the seats be of proper pattern, and well adapted to the age and size of pupils who use them. The demand for seats adapted to the individual students who use them will sooner or later bring adjustable seats into the schoolroom. The need of them has been felt in the past, but school officers have objected to them on the grounds that they are not substantially made and that they cost too much. Both these objections will in time be overcome.

Every schoolroom should have a thermometer hung about four feet from the floor in some part of the room where the air would be at an average temperature with that in the room as a whole, and the mercury should be kept as nearly as possible at from 68° to 72°, Fahrenheit. If the temperature is below this, some one will be uncomfortable from cold; and if the temperature is above this, some one will be uncomfortable with heat.

Plenty of pure fresh air admitted to the school-room in such a way that no one, teacher or pupil, will be subjected to draughts is certainly essential to comfort, and since essential to comfort, it becomes a question of school management as well as a question of school hygiene. One point here needs to be reiterated and emphasized, and that is, that *air may be unfit to breathe and at the same time be cold*. That the temperature of a room is 68° or below is absolutely no guarantee that the air in that room is pure enough to breathe. This is a truth that many janitors never learn.

Bad lighting likewise induces bodily discomfort and so breaks up the unity. Plenty of light for all parts of the room should be admitted to the school-room at all times, and the main sources should be from the pupil's back and left. In order that there may be plenty of light in all parts of the room the relation between floor space and window pane space should be 4 to 1; that is, there should be not less than one square foot of window pane to every four square feet of floor space. This relation should obtain when there are no obstructions to prevent the free passage of light. If buildings, trees, or anything of the kind obstruct the free passage of the light, there should be more than one square foot of window pane to four square feet of floor space.

The seating, heating, ventilating, and lighting of schoolrooms have usually been studied from the

hygienic standpoint, but they also deserve study from the viewpoint of school management.

Minimizing Diverting Influences.—Any influence which takes the pupil's attention away from his school work is a diverting influence, and whatever removes influences that take the pupil's attention from his school work is a condition of unity. The schoolroom evidently shuts out many influences which would attract the pupil's attention, and thus divert him. Some schoolrooms are however so situated that all sorts of sights and sounds are continually attracting the attention of the pupils. The writer has taught in a schoolroom near a railroad upon which as many as four or five heavily loaded trains would pass during one recitation period. Just so many times was the unity of the recitation broken. Again, a schoolroom situated near a paved street will often have the unity between the teacher and pupils broken by the rattling of vehicles upon this street. These points are worth consideration in choosing a location for school buildings.

It is upon the school premises and within the schoolroom in particular though that distracting influences may be minimized. These influences are those which divert through: 1. Touch. 2. Sight. 3. Hearing.

Touch.—The law against diverting influences through touch demands that all pencils, knives, unnecessary books, fruit, toys, pencil cases, etc., except

those in actual use, should be removed from desks. If such things are left on the desk they are a constant challenge to the student to touch them, and as such under any ordinary circumstances will be handled by the students.

This law also demands single seats, and estimates especially their superiority over double seats.

Sight.—It is imperative that all unnecessary sights be removed from the attention of the students. Hence the law against students passing from one part of the room to another; to the water bucket; to and from the stove; against any unusual arrangement of school furniture.

Hearing.—The law against distracting influences through hearing demands quiet in the schoolroom. This is such an important point in school management that special study needs to be given to it.

From a mistaken idea that to demand quiet in the schoolroom is to rob children of their freedom, some teachers not only permit but advocate an intolerable amount of noise in their schools. The error of this doctrine should be made as clear as possible to every teacher because of the mischief ensuing from it.

Dr. Arnold Tompkins exposes well its pedagogical unsoundness in the following: "Most effective of all means of diverting the attention is noise. Silence must be the law of the schoolroom. The noise of whispering, studying, fixing fires, walking, loud talk of the teacher, etc., must be gotten rid of. It is

quite common for the teacher to make more noise than all the pupils together. A teacher should speak in subdued tones, and move about too quietly to attract notice. He should so address a class during recitation that the pupils studying are not compelled to listen. Pencils should be sharpened at recess; and slate frames covered, or slates abolished for notebooks.

I know it has been often urged that a noisy schoolroom is a sign of energy and activity, of industry and hard work; that the working beehive must hum. This sounds very well till we reflect that it is physical energy and activity that makes the noise; there is no mental analogy. Rather it is the reverse; the greater the mental activity the greater the silence. The boy who thinks is not necessarily noisy, but necessarily silent. All professional students seek a silent retreat as the best condition for mental labor. This doctrine of a noisy school arises from two classes of teachers,—those who can not secure silence and seek an escape through the theory; and those who champion in good faith the plea for freedom on the part of the pupil,—or as it seems to some, a plea for license.”

Since the child has such a superabundance of energy which seeks to discharge itself in muscular activity, it is almost an impossibility for him to keep quiet long at a time. This truth together with the law of silence for the schoolroom demands short

school hours with frequent intermissions and rest periods in which an opportunity is given for muscular activity. Marches, drills, and other forms of physical exercise are a powerful means in maintaining silence in the schoolroom if interspersed between the periods of mental work.

Conditions of Unity between the Learner's Real and Ideal Self.—It may be reiterated that there is unity between the pupil's real and ideal self when each act he puts forth helps to fix in him habits of wisdom and virtue. If each act would do so, this would be ideal growth in self-realization.

The highest aim of the school is to induce actions by the pupil that will constantly uplift him, and give him the ability to inhibit those which would degrade him, that the growth brought about by these activities may crystallize into character whose elements are *wisdom* and *virtue*. But this would be nothing more than unity between the learner's real and ideal self.

The conditions of this unity are at any rate four:
1. *Pure motives.* 2. *Right ideas of life.* 3. *Incentives.* 4. *Social influences.*

Pure Motives.—*Pure motives mean one's intentions to do good in his actions.*

The one who habitually intends to do good in his actions is much more likely to do the things which will constantly further him toward wisdom and virtue, than the one who frequently does things with bad intent. Of course one may make mistakes, but on

the whole pure motives prove a very potent condition in maintaining the unity between the learner's real and ideal self.

That the teacher may lead the student to look into his own mind and make inquiries about his motives is a thought worthy of attention, too. In this way the teacher may help the pupils in establishing this very important condition of unity.

Right Ideas of Life.—One's ideas of anything always determine very largely what his actions are toward that thing. Therefore, the pupil must have right ideas of life, otherwise he can not attain to right living. If the pupil can be made to see and *feel fervently* that, when all things are considered, there is but one thing in general in life worth living for, namely, *a high type of wise and virtuous manhood or womanhood*, one very essential condition of unity between his real and ideal self exists.

What an opportunity here for the teacher who is himself what his students should become, to help students to start right in life. The teacher must have thought out what life's success consists in, it is true, before he can inspire students to hunger and thirst after righteousness.

Right ideas of life and conduct are certainly a very important condition of unity between the learner's real and ideal self.

Incentives.—Incentives are stimuli to urge to activity. Strictly speaking an incentive is always a

desire for something, but the thing which arouses the desire is also frequently called the incentive. As such, are class grades, class honors, per cents, prizes, etc.

Incentives may be divided into two classes: 1. Natural. 2. Artificial.

Natural Incentives.—Natural incentives are desires for those effects which in the nature of things result from the deed; as the *knowledge* and *mental growth* which result from conscientious study.

The one great natural incentive is the mind's inherent desire for progress. The soul awakes to consciousness with the desire for progress as its deepest and strongest trait. This passion of the soul for knowledge and righteousness, this desire for progress is man's distinctive mark.

“Progress, man's distinctive mark alone,
Not God's, and not the beasts'; God is, they are,
Man partly is, and wholly hopes to be.”

This characteristic of the mind, *mental hunger*, is called *wonder* in psychology. Thus wonder is the mind's natural incentive. It has produced science and philosophy.

All natural incentives are good for they stimulate the learner to natural, healthy endeavor.

Artificial Incentives.—Artificial incentives, as the name implies, are incentives which do not naturally result from the deed. For instance, a parent might pay his child for learning his spelling lesson. The

child would thus be stimulated to learn spelling lessons from his desire for money. The incentive is unnatural, for a quantity of money is not a natural result of the action. Thus, examinations, per cents, class honors, prizes, etc., come under the head of artificial incentives.

Artificial incentives are at the best of doubtful utility. While they may do some good, the evils resulting from them probably outweigh by far this good. The best educators in the land condemn them strongly.

“The use of such means necessarily kills the desire to know, which is immoral because killing the soul itself. When a teacher, in good faith that the natural process of learning is its own sufficient reward, begins to instruct pupils who have been under the artificial stimulus of the per cent. system, he finds them to be indifferent to legitimate appeals, and ready to affirm that school life is not worth living without the usual excitement and strife for per cent. What hope for such pupils after the days of formal instruction! The severest criticism that can be made on school work is to show that students after graduation have not a burning desire to pursue a systematic course of study and improvement. The use of false incentives is not the only reason for this; but it is largely chargeable to formal methods of instruction which necessitates artificial incentives, which further render instruction dead and formal. By this process

the pupil, if not becoming positively averse to study, feels satisfied and self-sufficient, and having no foreign incentive now offered, he is under no compulsion to further labor. If study means a contest with ponderable per centable packages of knowledge, how play the game when there is no one to estimate and umpire? If the school is to determine to a future life of study, the motives appealed to and cultivated in school must be the same as those employed in the natural, healthful course of life out of school."

"The abiding passion of the soul is for knowledge, and all the teacher can properly do is to take this fact fairly and at its worth. The passion he may stimulate, make definite, and attach to the proper objects; but he can not introduce a substitute without weakening the life-giving connection between the pupil learning and the object being learned."

Social Influences.—The child is by nature a social being, and will live in society after leaving school. In the school in many instances he first begins to learn his duties with respect to others. In all cases the pupil first begins to come fully into the understanding of what it means to live in a society of his equals. In the family the student begins to learn something of living in society, but it is in the school that he first meets with the conditions of society in anything like those in which he will be required to live later. The school forms a transition from the family to the complex social life of the community. Here the pupil

learns something of the difference between doing as he pleases and doing so as to uplift himself and at the same time help those around him. In the school are good opportunities for learning habits of politeness, toleration, charity, order, truthfulness, justice, and industry. But all of this is unity between the learner's real and ideal self. Thus social influence is one of the conditions of unity between the real and ideal self.

Broken Unity.—In the best regulated schools there will be cases of broken unity. This may happen in any of the following ways: 1. Through ignorance. 2. Through neglect. 3. Through thoughtlessness. 4. Through willfulness. If the child does not know that it is a violation of unity to come to school late, and comes in late, it is a case of broken unity through ignorance. If, however, he knows it is wrong, but neglects to start in time, it is a case of broken unity by neglect. If the learner thoughtlessly plays with the ink well on his desk, and thus breaks the unity by the noise made, it is a case of broken unity through thoughtlessness. If a student purposely insults one of his fellow students or the teacher, he willfully breaks the unity of the school.

Since prevention is better than cure, the main aim in school government is in preventing broken unity. This is to be done by establishing conditions for unity and eliminating those unfavorable to unity. This consists first and at all times in establishing a

sentiment in the lives of students in favor of those things conducive to unity and against those things unfavorable to unity.

Restoration of Unity.—When unity in any way in school is broken it must be restored. *The ideal condition would be to have the school in such an attitude that the unity would be voluntarily restored by the one who broke it.* And if students have in mind (1) the nature of the school; (2) the source and nature of the law of the school; and (3) have the proper sentiment toward school behavior, the unity in most cases, when broken, will be spontaneously and voluntarily restored. But since such conditions can not always be maintained, it must at times be restored through the influence of the teacher as an agent.

The teacher's work in restoring unity becomes a not difficult task when the conditions insisted on all along in these studies have been established in school. Confidential talks with students in which the teacher in a kind and sympathetic manner calls attention to the offense and the way to correct it may be used with lasting and beneficent results. Often nothing is necessary but to call the student's attention to the misbehavior. However, obstinate cases arise which can not be passed by lightly, and this suggests the question of school punishments.

School Punishments.—This is the most delicate as well as the most disagreeable feature of the teacher's work. It requires a great deal of discretion, patience,

sympathy, and good sense to punish at all successfully.

It should be remembered that punishment in school has the following two purposes:

1. To restore broken unity.
2. To prevent broken unity in the future.

And punishment which fails in either or both of these things is not an entire success, but it may easily be an entire failure. If by punishment the teacher, by arousing anger, antagonism, and bad feeling, causes more unity to be broken than restored, the school would have fared better without the administering of punishment.

The teacher must not punish for revenge, or with a vindictive spirit. Punishment must be reformatory and preventative, not vindictive. Plato was right when he said *only the unreasonable fury of a brute would punish vindictively*. If the teacher finds himself angry, and it is admitted that occasions for justifiable anger arise in school, he will gain an important victory by not acting till his anger subsides. He will often save a good many heartaches and regrets, too.

No recipes can be given for particular cases, but the study of nature's punishments enables us to state the following general rule, which is always safe to follow: *The punishment should be what in the nature of things follows as a result of the offense.*

The only difficulty with the guidance which this rule furnishes in school punishments is that of determining what the natural result of the offense is. At times it is very difficult to determine what naturally follows as a result of the offense. But in a large number of cases this rule gives absolutely safe guidance.

Illustration.—If a student spills water on the floor of the schoolroom through carelessness, the natural thing is to have him clean it up. If again a student by making noise disturbs a certain part of the room, the natural punishment is removal from that part of the room.

Corporal Punishment.—Corporal punishment is punishment of the body, as by whipping, beating, etc.

The tendency in school government is to discard it entirely. Some cities do not tolerate it at all in their schools. It is, to say the best for it, the device of the teacher who is not sufficiently wise to see a better way. That a better way exists is not doubted by those who have carefully studied the problem. It is a noticable fact that the most skillful teachers everywhere have the least use for corporal punishment, while the least skillful resort to it most.

If our teachers were all wise enough, and if school conditions were what they should be, no doubt corporal punishment could be abolished in school entirely; but with existing conditions it does seem that it is not entirely wise to wholly condemn and

forbid its use. However it should be remembered that it is the device of the unskillful, and the ignorant, and is to be used only when all other means have been exhausted.

CHAPTER IX.

THE PROCESS IN THE TEACHING ACT,—METHOD.

The Teaching Act.—The school exists as an organization in order that the most favorable conditions may be furnished for the act of teaching. It is in this act that the mind of the pupil comes into vital touch with the mind of the teacher. Here the miracle of the influence of one mind upon another is manifested. Here it is that the most important duty of the teacher is involved. To this process all other processes of the school point. The school finds the idea that created it in the process of realization in the teaching act. The act of teaching is a process for it is a series of steps directed toward the accomplishment of an end. The teaching act is not a simple process for it is a large process made up of smaller processes.

The Processes in It.—A brief analysis of the teaching act will show that there are three processes going on in it,— (1) the thinking the learner is doing; (2) the thinking the teacher is doing; (3) a process of handling questions, directions, objects, assignments, and so on—the manipulation of means in teaching. The first two of these processes are spiritual, or mental, processes, and the third is external to both

the mind of the teacher and the pupil and is a physical process.

Illustration.—In teaching the definition of a noun to a student, first, the student's mind goes through the process of thinking (1) that the noun is a substantive word; and (2) that it expresses an object by naming it. This is the process in the mind of the student in the teaching act. Secondly, the teacher thinks these same points through with the student, but he thinks several other things, too. This is the spiritual process of the teacher in the teaching act. Thirdly, there is a process of asking questions, illustrating, possibly referring to text-books, etc., going on, and this is the physical process in the teaching act.

Nature of Method as a Subject of Study.—The question, What is the subject of method like? is often asked. It may be answered in a general way by saying it is a subject of study the pursuit of which has for its special object to make teachers more skillful in teaching than they would be without such study. But this much might be said of any pedagogical study—of psychology, for instance. To be more definite, method as a subject is that study which deals with the three processes in the act of teaching as indicated above. These three processes in their various phases constitute the material of all study in the subject of method.

The Subject-matter of Method.—By subject-matter is meant *the material of study in any subject or lesson.*

It is the thought and feeling embodied in any subject or lesson which are to be got from such subject or lesson by study. It always consists of facts and relations among such facts. So the subject-matter of method, as a subject of study, is *the three processes, one in the mind of the learner, one in the mind of the teacher, and one a physical process, in their relation to the growth in the life of the learner.*

Definition of Method.—Method is thus seen to be a complex and comprehensive thing. Any definition to be perfectly accurate, must include the various phases of these three processes. The following, it seems, does this: **Method** is the triple process in the act of teaching by which the learner is induced to take the steps from his real condition to a higher condition held up as an ideal. This is the definition of method considered in its broadest and most comprehensive sense, and the sense in which its study will give the most help to the teacher.

Classes of Method.—Since there are three processes going on in the teaching act there are, in a sense, three methods,—the learner's method, the teacher's method, and physical method. These three will be studied somewhat in detail.

The Learner's Method.—The learner's method is the movement of his mind in gaining any point of knowledge. The pupil's method is thus a living, spiritual process internal to his life. Method from this point of view is mental growth. That is to say,

it is the change of potential mental activity into actual mental activity, and this is the essence of growth.

Illustration.—If the child learns in a number lesson that $8 + 7 = 15$, the activity of his mind in thinking the following steps is his method: (1) the mind rethinks the number 8; (2) the mind rethinks the number 7; (3) the mind thinks the number 8 and 7 together; (4) the mind thinks the name of the new number. These four steps are the mind's process in thinking the point of knowledge, and are, therefore, the mind's method. This phase of method calls attention to the fact that the thing to be watched and emphasized in teaching is the change in the learner's life by which he is constantly rising to a higher plane of living.

Definition of the Learner's Method.—The learner's method may be characterized by the following definitions:

1. The learner's method is the process of the learner's mind in learning a thing.

2. The learner's method is the movement by which his mind identifies itself with the thought and feeling of the external world.

3. The learner's method is the mental activity by which his mind makes the objective the subjective. The objective means the external world, and the subjective means the self. And the self means one's original capacity to know, to feel, and to will, plus the effect of one's experiences on this capacity.

4. The learner's method is the process in which his mind goes from its real condition to an ideal condition. One's real condition is his condition just as he is at any time. His ideal condition is one different from what he is in at any time, and which actually has no existence except as an idea in the mind; hence the name *ideal*. The ideal condition is not necessarily a better condition than the real, but may be either a better or worse condition.

The Teacher's Method.—The teacher's method is the thinking he does in teaching a thing. The teacher's method is a very important topic of study in the subject of method. It must be thoroughly understood by one who is to succeed best.

First, the teacher must think the thought in the point or points to be taught; that is, he must think the *subject-matter*. Secondly, he must see in terms of development of the learner's life the reasons for teaching the subject-matter; that is, he must see the *purpose*. Thirdly, the teacher must see the nearest related knowledge possessed by the learner which he can use as a foundation to build upon in teaching the new point; that is, he must see the *basis*. Fourthly, the teacher must see the activities the learner's mind puts forth in mastering the points of truth in the subject-matter; that is, he must see the *steps*. Lastly, the teacher must see the means he may best employ in leading the mind of the learner to take the steps in mastering the subject-matter; that is, the teacher

must think out the *devices*. Thus the teacher in teaching a lesson must think (1) the subject-matter; (2) the purpose; (3) the basis; (4) the steps; and (5) the *devices*. These five things every teacher does in some sort of way in teaching every lesson. Some think them out clearly and accurately, and some think them out scarcely at all, and do not know that they do even that much. A teacher can think the teaching of a single point, or of a whole lesson, or of a whole subject, under these five heads, and must do so with more or less accuracy in teaching. It is worth our while to study these five points further for the help the study will give.

Subject-matter.—In a general way the subject-matter is that which is to be mastered by study. It is the thought embodied in the thing studied by the mind of the learner. In a particular lesson the subject-matter is just that to be got from the lesson which the learner should have after the recitation. In a particular subject, as grammar or history, the subject-matter is just that to be got from the subject which the learner should be in possession of after the study of the subject. In this general sense the subject-matter of education is the whole world of thought. This study is too general to be most helpful. A closer study will reveal the fact that every subject-matter is composed of two things: (1) The facts to be taught. (2) The relation in which these facts are to be taught or studied.

Illustration.—Suppose the words, *inquiry*, *discourse*, and *aspirant* are to be taught. Now, a spelling lesson might be made of it; and if it were a spelling lesson, the subject-matter would be, the words, *inquiry*, *discourse*, and *aspirant*, as to their correct written or printed forms. Thus the words, *inquiry*, *discourse*, and *aspirant* are the facts to be taught or studied, and “as to their correct written or printed form” indicates the relation in which they are to be taught or studied. But these same facts might be used, and the lesson not be a spelling lesson at all. If the relation in which they are to be studied or taught is as to their correct pronunciation the lesson would be one in orthoepy, and the subject-matter would be, the words, *inquiry*, *discourse*, and *aspirant* as to their correct pronunciation.

Further Illustration.—Suppose the facts of the revolution of the earth around the sun are taught, who can say whether the lesson is one in astronomy or one in geography? If, however, these are taught in their relation to the distribution of life, climate and relief forms on the earth’s surface, the lesson at once reveals itself as a geography lesson. From these illustrations it is to be seen that a subject-matter consists of (1) the facts to be taught or studied; and (2) the relation in which these facts are to be considered. This relation is often called the *organizing principle* of the subject-matter.

General Statement of Subject-matter.—The statement of subject-matter is not the subject-matter any

more than a word is an idea, or a sentence a thought. The statement of the subject-matter bears the same relation to the subject-matter that the word bears to the idea and that the sentence bears to the thought; that is, the statement bears the same relation to the subject-matter that the symbol does to the thing symbolized.

The general statement of a subject-matter is very valuable to a teacher, whether it be of a single lesson, or of a whole subject. It is helpful to the teacher because it must do two things: (1) it must name the facts to be taught, and (2) it must tell the relation in which these facts are to be taught. Thus the general statement of the subject-matter of any subject is a perennial guide to the teacher in teaching that subject, in that it shows, in a general way, what to teach and in what relation (how) to teach it.

Purpose.—Purpose in reality is beginning and end in every process. The purpose as idea—the beginning—moves forward in the process to its realization—the end. The purpose exists in the teacher's mind, but it is to be realized in the life of the learner. The purpose is the effect the mastery of the subject-matter should have on the life of the child. In actual teaching the teacher is to go from the subject-matter by way of comparison of the effect the thinking the subject-matter has on his own mind to its effect on the child's life, which is the purpose. That is to say, there is no way to tell the purpose of the subject-

matter except from the effect its mastery produces on the child's life. The course of study—the subject-matter—is usually provided for the teacher. So the teacher must start with the subject-matter and find out the purpose in teaching it. Much depends in the teaching act upon how well the teacher does this. If the teacher has definitely in mind just what he wants to do in the lesson he will be drawn steadily and constantly toward its accomplishment. A definite purpose saves time, economizes energy, emphasizes the important, organizes, and prevents aimless wandering.

It will be seen that in teaching any lesson there are two phases of the purpose: (1) to give knowledge valuable for guidance in living; (2) to give mental discipline; that is, to furnish a mental gymnastic to the end that the mind may grow strong by exercising it.

Basis.—This is the learner's nearest related knowledge to the new points to be taught, and upon which the teacher may build in teaching the new point. Basis is an important point in teaching. Many errors are made in teaching because the learner has not basis for learning the new point, or because the teacher does not see the basis. Teaching in harmony with the principle underlying basis, *the mind naturally goes to the unknown from the nearest related known*, means a progressive development of a subject, each step becoming basis for the step succeeding it. There

are many violations of basis in teaching, as often done.

Illustration.—If the lesson to be taught is that $5 + 4 = 9$, the child must know the number 5 and the number 4 as basis before he could learn that $5 + 4 = 9$. If the teacher should attempt to teach this lesson without having taught the numbers 5 and 4 he would meet with the difficulty of insufficient basis. Again, if a teacher attempts to teach the noun to a class without the class having a definite knowledge of an object, he will most surely meet a difficulty in the basis. The teacher to teach well must see and choose definitely his basis.

Steps.—Steps are more or less complete movements of the mind. They are mental things and in the teaching act are in the life of the learner. They are the advances of the mind in mastering the separate points of the lesson to be learned. Or in a more general sense they are the advances of the mind in mastering the various phases of a subject.

Illustration.—If the lesson to be taught were that $17 - 8 = 9$, the steps would be: 1. The advance of the mind in rethinking the number 17. 2. The advance of the mind in rethinking the number 8. 3. The advance of the mind in thinking the number 9 as remainder. Again, if the lesson were, to teach the definition of the triangle, after examining several triangles, the steps would be: 1. The advance of the mind in thinking a triangle is a figure. 2. The

advance of the mind in thinking a triangle has three sides. 3. The advance of the mind in thinking a triangle has three angles. 4. The advance of the mind in synthesizing these points in the definition, *A triangle is a figure having three sides and three angles.*

To know the steps the mind takes in working out any new lesson is a matter of much importance to the teacher. He must know something of the steps or he cannot teach at all; and, other things equal, the more clearly the teacher has thought out the steps, the better will he teach the lesson.

Devices.—The devices are the various things used by the teacher to lead the mind of the learner to think and feel in the manner desired. A synonym for devices is the term *means*. Devices, or means, constitute a very important factor in teaching. There is opportunity for the exercise of rare judgment, tact, and skill in the selection of devices. When it is understood that questions, text-books, and reference books, maps, globes, and school apparatus in general; blocks, sticks, etc., are devices in teaching, something of their importance in school work becomes evident. Devices are so important that among many, method means nothing more than the manipulation of devices. However important they are it must not be lost sight of that they are always determined in the light of the mental process they are to induce. They are means to an end, and in nature the end is always more important than the means.

Method as a Physical Process.—It is, perhaps, using the term *method* in its most popular significance to think of it as meaning some physical process external to the life of the learner. That is to say, it is using the term in the sense in which most persons commonly use it in speaking and writing. This idea of method is the one usually held by persons who have not made any careful study of what the term really ought to mean. There is a sort of indefiniteness in the minds of such persons as to just what they do mean by method. However, upon examination it will be found usually that the idea that method is the manner of doing some physical thing prevails, though even this is held in mind more or less vaguely. From thinking of method in this sense we have the following terms; “Object Method,” “Concert Method,” “Consecutive Method,” “Promiscuous Method,” “Lecture Method,” “Socratic Method,” and “Laboratory Method.”

These all refer to the manipulation of objects, questions, and answers in the teaching act, and so are to be studied briefly under method as a physical process.

The Object Method.—By this is meant the handling of objects by teacher and pupils in the process of teaching. It is a good line of work, if used judiciously. It has its proper place in teaching number work, primary reading, nature study, primary geography, and primary language.

The Concert Method.—The concert method means having students to answer questions, read, and speak simultaneously in the recitation. There is much that may be said against concert work, but very little to be said for it. It is objectionable because it (1) violates the law of self-activity; (2) stifles individual effort and individual responsibility; (3) does not bring out clear, definite answers or thinking; and (4) leads to confusion, disorder, and chaotic class work. There may possibly be instances in which concert work may be used advantageously, but as a rule it should be avoided.

The Consecutive Method.—The consecutive method of asking and answering in the recitation means beginning at some point, the head of the class, or at the name beginning with A, and proceeding in some regular order back to the point of starting. In proceeding in recitation this way the students know pretty well when the "turn" of each one will come. This method, like the preceding one, has many things against it, but little to recommend it. It is objectionable because it leads to (1) habits of inattention; (2) disorder and disorganization of the class; (3) habits of idleness; and (4) bad methods of study. However good a student may be, if, when he has answered a question, he knows to a certainty that he will not be called upon again for some time, the tendency is for him to relax his attention. If the student is not a good one, the tendency in this kind of work is for him

to become worse, and since he is not called upon to attend closely he is prone to do something else, thereby causing disorder and disorganization. Idleness in the class is a direct result of inattention, and bad habits of study result from the student's being able to prepare just those points in the lesson which he has reckoned will come to him.

Promiscuous Method.—The promiscuous method of asking questions and receiving answers refers to distributing the questions and receiving answers from students promiscuously. No student knows to whom the answer to the question will fall. This method unlike the two preceding has much to be said for it and little or nothing against it. It is desirable because (1) it fosters habits of attention and concentration; (2) it is flexible and gives the teacher the best opportunities for meeting the needs of individual students; (3) it fosters habits of order and organization in the class work; and (4) it tends to industrious habits, and right methods of study. By the use of the promiscuous method students are held constantly to attending to the question under consideration, to the careful preparation of the lesson as a whole, and to order and unity in the class. As a rule, the promiscuous method is certainly the best for class work.

Lecture Method.—The lecture method refers to teaching by means of talks, or lectures. This method, perhaps, has its advantages and disadvantages. It is certainly not adapted to all kinds of school work, and

probably not adapted to any kind of school work if used exclusively. There are, however, some phases of school work which may be taught profitably by talks, or lectures. To elementary school work the lecture method is not at all adapted, and but very poorly adapted to secondary school work. In the first eight years of the child's school life he must be taught differently than by this method. That stays with the child which he has an opportunity to see, hear, and think about. This, however, is not to be construed to mean that oral teaching should not be done in primary history, primary geography, nature work, etc. If the lecture method has any legitimate place in school work it is in the college and university. However it may seem theoretically, it remains a fact that those things which are digged out by the student, recited upon in the class, and discussed by questions and answers are the things which in the end stay with him and do him good. Certainly the lecture method in the average teacher's school work is, to say the least, to be used sparingly, and with much caution when used at all.

The Socratic Method.—This method takes its name from Socrates, a Greek philosopher and teacher, born 469 B. C. It is sometimes called the developing method. It proceeds by the employment of subtle questions to lead the student to think what it is desired for him to think without telling him anything. "The Socratic method, more or less perfectly under-

stood, has had great influence upon professional pedagogy. In many schools for the professional training of teachers, and in many schools in charge of teachers professionally trained, systematic questioning of this sort is looked upon as ideal teaching; and there is no lack of conscientious endeavor to prepare for use in recitation, series of questions which shall lead the child's mind to take the logical steps which given occasion requires. One who doubts the value of such systematic questioning may usually be converted by hearing a single typical recitation conducted by a master of the art. The power of such a recitation to touch, move, chasten and direct the soul is so evident, that if Socrates and Plato had taught us nothing but how to do such work their fame as teachers would be justified." It is noteworthy that the "Socratic Method" is diametrically opposed to the "Lecture Method."

The Laboratory Method.—This is also often called the "Scientific Method," or "Inductive Method," and it means a procedure in which the student is lead to investigate and think for himself. It is opposed to taking things on mere authority without investigation, and to the text-book method. It proceeds by leading the student to deal with the actual material of study rather than to deal with what some one has said about it. In botany, studied in this way, the student deals with plants; in zoology, with animals; in grammar, with sentences and parts of sentences.

This method has much to recommend it. 1. It fosters habits of free inquiry and free investigation. 2. It is the mind's natural way of learning. 3. It makes the student self-directive and self-helpful. 4. It fixes with the student right methods of study. 5. It gives the student a critical attitude of mind. All these are very desirable characteristics for a student to have.

Comparison of Teacher's and Pupil's Method.—These two methods are alike as follows: 1. They are both spiritual processes. 2. The mind of the learner and the mind of the teacher in general go through the same process in thinking the thing to be learned. 3. Both the teacher and the pupil keep in mind to some extent the purpose of the process in the teaching act.

These two methods are different as follows: 1. The teacher, in addition to thinking the truths to be learned, must think the learner's thinking of them. 2. The teacher must think out the means or devices to be used in leading the learner to think the desired points of truth. 3. While both the teacher and the pupil keep in mind the purpose, the teacher sees it definitely, or should do so, while the pupil only sees it vaguely. The teacher's method thus includes more than the learner's.

Two Views of Method.—The foregoing study suggests to us that there are two views of method. It is unfortunate that educational writers hold these two

views, as considerable confusion prevails because of this fact. One class of educators, those who have studied method least, mean by method simply the physical process in the act of teaching. A second class, those who have been special students of method, mean by method the triple process in the act of teaching.

Comparison of the Two Views.—In our study of method we may call these two views respectively the *popular view* and the *special view*. The popular view will thus designate method as the manipulation of external means, or devices, and the special view will designate method as the triple process.

Thinking of method according to the popular view constantly places the mind's emphasis upon something external to the life of the learner. This has in the past led to much that was bad in teaching and is still doing so. The teacher loses sight thus of the fact that it is in the learner's life that the educating process is to be carried on. He is prone to make the manipulating, the text-book, or some petty scheme of teaching an end instead of a means. Every question that arises concerning teaching must be settled in the light of the effect upon the life of the learner. The ultimate question is, How does it affect the life of the learner? The process in which the mind of the learner masters the new point of knowledge is the point of prime importance in the teaching act and the thing always to be emphasized in the study of the

act of teaching. The popular view of method leads to almost hopeless confusion. Everyone holding this view who happens to use some different device, or means, in teaching calls it his method and gives it a name. Since there is an almost infinite number of devices which may be used, there thus arises an almost infinite number of methods, which no teacher can or desires to keep informed upon. This leads to a hopelessly chaotic condition of things in the study of method.

The popular view of method has led to much disparagement of the study of method among persons who should be friendly to its study. These are oftentimes persons who are very good thinkers, but who have not given special study to method. It is a common remark among this class of teachers that one may study method in a subject at the expense of a knowledge of that subject. The depreciating remarks made about method, which arise from the popular view of method, are a source of much harm to the profession of teaching. This is true, because many persons who would otherwise make a careful study of method and would receive the benefit that must come to the teacher thereby, are kept from beginning the study by this disparaging attitude on the part of some teachers. It may be safely said that there is need for no one thing among teachers more than an intensely professional spirit. It seems strange that some teachers take pleasure in saying depreciating

things about method work. It is, however, probably to be explained from a misconception of method. I have never yet heard the first person speak depreciatingly of method, who had been a student of the subject.

The special view may be proven to be the better view. This is the argument: A thing is good accordingly as it realizes the purpose which brought it into existence. Method as a subject came into existence to supply the want for something, the study of which would help the teacher to do better work in his daily teaching. Accordingly, that thing whose study helps the teacher most is the best. It has already been shown that the study of method as a triple process is more helpful to the teacher than the study of method as the manner of manipulating some external means, or device. Therefore, the special view is the better view of method.

No Danger in Too Much Study.—It is not difficult to see that there is no danger of a teacher's devoting too much time to the study of method when one takes the proper view of method. The teacher can not study the process through which the mind goes in mastering any point of knowledge until he has the knowledge himself. For instance, the teacher can not see the mental steps the mind of the learner takes in learning the definition of an adjective without knowing the definition of an adjective himself. To know the method in teaching the definition of an

adjective is to know two things: 1. The definition of an adjective. 2. The process the mind naturally employs in learning the definition of an adjective. No teacher can rationally and well teach the adjective who does not know both.

Further Illustration.—In the teaching of history this point becomes quite evident. The teacher who knows method in history knows these two things: 1. The events of mankind in their relation to the struggle of the race for higher life. That is to say, he must know history. 2. The natural processes of the mind in learning history. No teacher can teach history at all without a knowledge of the first, and it is equally clear to any person who will think, that no one can teach history well without a knowledge of the second.

So this question reduces itself to the following: It is not possible for a teacher to study method too much, unless it is possible for a teacher to know too much about his subjects and to know too well the mind's natural process in learning those subjects.

Factors Determining Method.—About twenty years ago one of the leading educators of this country said "*The law in the mind and the thought in the thing studied determine the method.*" This statement of this truth can not well be improved upon. It shows that the two following things are factors in determining the method to be pursued in teaching any subject whatever:

1. *The law in the mind.*

2. *The thought in the thing studied.*

That these two factors are the ones which determine every rational method makes the above statement a universal truth.

The Law in the Mind.—The law in the mind has reference to the general truths of mind—the forms of activity common to minds.

Holding in mind that method is the triple activity in the process of teaching, it can easily be seen that this process must be largely what it is because of what the mind can do; that is, because of the laws governing mental activity.

Again, the method would be different in teaching the same subject-matter to a child of eight and to an adult, because it is a law of the mind that the mind of the child of eight could sense-perceive, remember, and imagine accurately, but that he could not reason accurately, while the adult should be able to do so.

The Thought in the Thing.—Each thing is the embodiment of thought; that is, each thing in the universe is capable of suggesting a thought to the mind. "Evangeline," the rose, the lily, is each the embodiment of thought.

Again remembering what method is, it can readily be seen that the process is different in teaching different things, and so the method is different.

The process in teaching the noun as to definition and in teaching "Maud Muller" as to interpretation is widely different, because of the difference in the

thought embodied in them. And since method is the triple process in the act of teaching, the method is widely different, the cause of the difference being the difference in the thought in the two things.

Thus these two things, *the mind of the learner*, and *the subject-matter*, determine the method.

The whole study of general method should emphasize the truth that *the essential thing in teaching is opening up the way for the realization of the child's inherent possibilities.*

“Truth is within ourselves; it takes no rise
 From outward things, whate'er you may believe.
 There is an inmost center in us all,
 Where truth abides in fullness, and around,
 Wall upon wall, the gross flesh hems it in,
 * * * * * And to know
 Rather consists in opening out a way
 Whence the imprisoned splendor may escape,
 Than in effecting entry for a light
 Supposed to be without.”

CHAPTER X.

THE RECITATION.

The Nature of the Recitation.—The word, *recitation*, is of Latin origin and literally means *a reading aloud*. As the term is used now in connection with school work something of the literal meaning may be found in it. But there is more in the recitation as thought of now than the mere reading or speaking aloud. A written recitation might be conducted in which the original notion of the recitation is scarcely to be found at all.

The recitation is the school process in which the learner rethinks what he has learned in previous study and communicates this to the teacher and his fellow students. This, however, is not all there is in the recitation, but constitutes a considerable part of the process. In addition to the student's process of rethinking and communicating to the teacher, and other students, what he has previously learned, there are in the recitation the *suggestions, tests, directions, and encouragement* by the teacher.

The recitation is the crowning process of school work. It is in the recitation more than in any other place that the learner is stimulated to the effort of

learning. Good recitations are the test of good school work.

Purposes of the Recitation.—The following are the purposes of the recitation:

1. To furnish a process in which the mind of the learner and the mind of the teacher may come into living touch with each other.
2. To test the learner on his preparation and understanding of the subject-matter of the lesson.
3. To supplement the knowledge of the subject-matter the student has gained in his preparation.
4. To give the learner the habit of right methods of study.
5. To approve, encourage, inspire, and stimulate the learner in his work.

Vital Touch of Learner's and Teacher's Mind.—In order that instruction may be most effective the mind of the learner must come under the influence of the mind of the teacher with conditions as favorable for learning as possible. This is needed that in the act of teaching the life of the teacher may come into closest touch with the life of the pupil.

That the conditions may be the most favorable the class should recite in a room separate from that in which the school is accustomed to sit and study. Since this is not possible in so many schools, the next best thing is to have the pupils to occupy a position in the room as nearly isolated from the other students as possible. Separate recitation rooms, though, are

always the best, for in them all diverting influences can be reduced to the minimum, and the conditions for learning be best maintained.

Testing on the Preparation of the Lesson.—Good teaching requires that some definite thing be demanded daily of the learner. And the requirement of tests on the preparation and understanding of what is demanded is imperative. The responsibility of getting up before the class and stating to the class and the teacher what he has learned is a constant spur to the student in his work. Negligence and looseness in study always result from the assignment of lessons upon which students never recite. There is no surer way to induce bad habits of study than to assign lessons and then not test students as to their preparation and understanding of these lessons. And the tendency is in this direction, even though one has the best students to be found. If students are not good there is nothing in such work to make them better, on the other hand they become worse. The responsibility of proper preparation is brought home to the student in no other way so well as in the classroom at recitation. Every one knows how prone he is to neglect work which he has planned to do because of a lack of a definite responsibility. The tests in the recitation fix and maintain a definite responsibility.

The testing to be most helpful must be *accurate*, *critical*, and *just*. Students are often deceived in thinking they have prepared well their lessons when

they have not, because the testing is poorly done in the recitation. It frequently happens that a student makes a recitation which is worth nearly nothing, but the teacher by smoothing it over and patching it up makes the student think he has done something creditable. The student is thus misled and is perfectly willing for the teacher to do the same thing again. If a student neglects to prepare his lesson, he should be brought face to face with his ignorance which might have been removed.

Supplementing a Knowledge of the Lesson.—It is not to be expected that the student will at all times completely master the subject-matter of the lesson. Points more or less vague to the learner or of which he has obtained a wrong idea will often become clear and correct to him by recitations of other students and the illustrations of the teacher. And many times points which the student has not been able to work out will be cleared up to him upon the teacher's asking him questions which lead to their solution. And again there are points which the student can get from no other source than from the teacher. These the teacher may give directly to the student and save time and guessing on his part.

It has been stated as a principle of pedagogy that *the teacher should never tell a student anything which he can find out for himself.* This statement emphasizes an important pedagogical truth, no doubt, for the tendency certainly is among teachers to tell students

many things which they should be led to work out for themselves, as the easiest way out of it, when the student fails to respond properly to a question. But to follow the principle literally would also lead to grave errors. For instance, if a child were standing by the fire and without his knowledge his clothes should catch fire, he would find it out without being told sooner or later. But no one would think of waiting for him to find it out so.

One purpose of the recitation certainly is to supplement the knowledge the student gets from his preparation of the lesson.

Giving an Insight into Right Methods of Study.—It often happens that students are willing to prepare their lessons, but that they do not know how to study. The teacher has opportunity in the recitation in two ways to show the student how to study:

1. He can show the student how to study by his requirements in the daily work of the recitation. If the student is constantly held accurately to the careful preparation of each point assigned, he will soon come to understand what it means to prepare a lesson; and from what is worked out on the separate points, he will see what is to be done with each point by way of preparation.

2. In the recitation from time to time the teacher may take the points one by one and show the students just how to proceed in their preparation. This the teacher must do occasionally, if he would have

his students use their time and energy to the best advantage.

Approving, Encouraging, Inspiring, and Stimulating.—Young people and old, too, are oftentimes gladdened by a word of approval. The teacher's opportunity for approving of that worthy of approval, and disapproving of that not worthy of approval is a means in his hands of working much good. Teachers are too ready to disapprove of the bad and to let the meritorious pass by as if unnoticed. Every child is capable of something worthy, and should be made to feel so. Just approval in the recitation is a perfectly legitimate incentive, and may be used to do much good by the careful, sympathetic teacher.

Pupils frequently have spells of despondency and discouragement in their school work. This comes about from extravagant ideas of what a pupil should accomplish, or a somewhat mistaken idea of native ability, etc. In the recitation the teacher has an opportunity to dispel the despondency and encourage by placing before the students healthful ideals of student life.

The teacher by taking the soul's hunger at its worth and so teaching as to stimulate and quicken it has an opportunity to inspire the learner to a life of search for truth and righteousness. And the teacher who can so teach that his pupils will be inspired to study his subjects after leaving school, in the pursuit of wisdom and virtue, is a most successful teacher.

The Law of the Recitation.—The law of the recitation is the same as the law of the school as a whole; that is, *the law of unity*. Without unity between the teacher and pupils the recitation could not exist, but it often actually exists with various degrees of unity. When the minds of all the students are following the mind of the teacher as the recitation progresses there is ideal unity. To approach this condition of things is always to be sought; and, other things equal, the recitation will be successful in the degree to which this is attained. Either the pupils or the teacher may break the law of unity in the recitation.

The student may break it by failing to give attention when he ought to do so. Whispering breaks the unity always, and while not in itself necessarily wrong, is a positive sin when engaged in during the recitation. It is to be deplored that there is a teacher in the land who can not see the question of whispering in school in its true light, and who does not set the stamp of disapproval upon it. It is absolutely indefensible as a practice. There are many other ways of breaking the unity of the recitation.

The teacher may break the unity by conducting the recitation in such a way that there can not by any possibility be unity, as indicated by the following quotation:

“Here is a picture taken from real life: School-room of two grades (seventh and eighth), of about twenty pupils each. Good teacher, as the world goes;

lesson in denominate numbers by the seventh grade. Teacher directs one boy to pass to the board and solve the first problem; another the second; and so on till the ten problems are used. Then, commencing again with the first problem, re-assigns the ten problems severally to the next ten pupils. A few pupils remain without work, and these are given selected problems to work at the desk, the board all being occupied. The teacher now steps back to talk to the visitor while waiting developments. Things always develop rapidly under such circumstances; and soon the teacher is needed by a girl working at her desk, where teacher and pupil discuss the problem. Note here that it is all right for teacher and pupil to talk during the recitation, because the teacher makes the rules: two pupils must not talk; except to help each other, as they say. And this they soon do, for the bright girl points the way to the dull boy. The first boy has done his sum; and, rather than waste time, punches the fire, which is already too hot. Another bright lad cultivates the fantasy and freehand drawing; while some laggards toil on, with and without help, hopeless, and despairing of victory before time is called. The first boy explains to those who have done their work, while others toil on. Fill out the picture at your leisure. In all it was a splendid display of self-activity, free thought and free speech."

The law of unity in the recitation demands short recitation periods. When the minds of the pupils

become fatigued to any great extent, it is impossible to maintain the unity. Forty minutes is probably long enough for any recitation period and in the case of young students it should, of course, be much less, its length depending upon the ability of the pupils to give sustained concentrated attention.

The Teacher's Preparation for the Recitation.—No teacher can do his best work without making daily preparation for his recitations. This preparation by the teacher is called *lesson planning*. Thus lesson planning means the process, on the part of the teacher, of working through each lesson a short time before teaching it with the view of teaching it to some particular class. In short, it is the teacher's immediate preparation for teaching each lesson. Daily lesson planning is thus an absolute necessity to the teacher who will do the best teaching of which he is capable. No teacher, then, should ever go before his class to teach a lesson without having planned it for this particular recitation.

This may seem too much of a requirement to some teachers, since it will of a necessity demand many sacrifices of them. To those who object on this ground, it may be said that the most successful school work demands just this sacrifice and more, and that those who are unwilling to give it should relinquish their claims as successful teachers to those who are willing. Also, according to the law of the survival of the fittest these very teachers in the strug-

gle for excellency will be pushed to the rear that their places may be occupied by those more worthy.

And daily preparation will not be found to demand so much sacrifice as it at first appears. The teacher will grow in skill in lesson planning in a short time to such an extent that he will find that he can plan each lesson in a very few minutes. This of course presumes that he has a fair degree of scholarship in the subjects which he teaches.

No better means exists to arouse interest and maintain it in the class than that of planning each lesson. It works out as follows: the teacher having planned his lesson, as a general plans a battle, comes to the recitation full of expectation and interest to see if all things will work out as they were thought in the planning. The pupils, according to the law of sympathy, catch the interest and expectation from the teacher, and in turn manifest an intense interest. This is but one, however, of the many benefits which come to the teacher from lesson planning.

But the teacher's intentions may be excellent, and yet he may not succeed well because he has no systematic way of planning lessons. In other words the teacher may see the necessity of lesson planning, but may not know how to plan a lesson. It will be remembered that under the head of the "*Teacher's Method*," it has been shown that in teaching a lesson the teacher must think through (1) *the subject-matter*; (2) *the purpose*; (3) *the basis*; (4) *the steps*; and (5) *the*

devices. Systematic lesson planning consists in thinking out as accurately as possible just these five things before attempting to teach a lesson.

Some teachers say one can depend upon the inspiration of the moment in teaching and that lesson planning is not necessary. But the worst failures as teachers are those who attempt to depend upon the inspiration of the moment and find that the moment comes and goes without the inspiration. Inspiration is not a thing so easily got as to come along to help out the teacher who has not prepared himself for his recitation. Inspiration results from properly preparing one's self for his class work.

Manner of Conducting the Recitation.—The manner of conducting the recitation is a point of sufficient importance to repay careful study, for upon it depends to a considerable degree the success of the teacher. The teacher who has a mild, pleasant way of leading his students in recitation inspires them with confidence, respect and love; while the loud, boisterous, explosive teacher fails in securing these very necessary attitudes of his pupil's minds.

Recitations should be both oral and written. The oral should doubtless predominate, but they should be varied occasionally with written recitations. This is because the pupils will be called upon in life both in and out of school work to communicate their thought and feeling in both oral and written discourse. To know is good, but it is not entirely suf-

ficient. It was said a long time ago that he who does not know is an ignoramus, and that he who knows, but can not communicate what he knows and feels is a dumb statue.

All of the following ways of manipulating questions and answers have been used in conducting the recitation, and have been called *methods* of conducting it: 1. The concert method. 2. The consecutive method. 3. The promiscuous method. 4. The lecture method. 5. The Socratic method.

The various so called methods of conducting the recitation have already been studied (See page 218), and their merits and demerits pointed out. So while they should be rethought, they will not be rediscussed here.

Assignments.—The *assignment* is a proper topic of study in connection with the recitation, for it is the teacher's most effective means of stimulating the students to properly prepare for the recitation. There is no other device in the hands of the teacher that may be used so effectively as assignments. Clear, definite, logical assignments bring clear, definite, logical thinking in the recitation. On the other hand bad, indefinite assignments bring unsatisfactory recitations and lead to bad habits of thinking. As a rule a teacher will get just about as good recitations as are good his assignments. The teacher by skillful assignments can lead his pupils to pursue almost any desired line of thinking.

Every assignment in any subject should place before the class a definite problem for solution, and it must be stated in such a way that the learner will see what is required of him; and it must suggest the general plan to be pursued in solving the problem. An assignment might be bad in any of these three ways.

Many of us can remember when the teacher said as the assignment, "Take the next lesson." And it is also easily remembered that we frequently did not know how to take it, when to take it, nor where to take it, and that we were little better off after taking than before taking.

The assignment is a most powerful means in the hands of the conscientious teacher for doing his students lasting good.

Common Errors in Conducting the Recitation.—The following are some of the most prevalent errors which teachers are prone to fall into and which they should studiously avoid: 1. Giving assignments not sufficiently definite. 2. Permitting students to wander from the question. 3. Repeating questions before giving students time to answer. 4. Repeating the answer. 5. Calling on the student before asking the question. 6. *Talking too much.* 7. Calling too much upon the brighter students for recitation.

Indefinite assignments were studied in the preceding topic and nothing further is necessary here unless it is to emphasize what was said there. The

importance of definite, logical assignments in teaching, however, can not be well overestimated.

To have the student answer just the question asked and stop then, teaches him to talk to the point and stop when he has finished it. But to talk to the point and stop when one has reached it is the characteristic of a well trained mind. Other things equal, that teacher who holds the students to just the question asked does his students by far the most good. And that student who answers just the question asked is as a rule the best thinker.

The habit of repeating the question before giving students time to answer fosters habits of inattention, and leads to bad habits of study. The student does not feel the necessity of giving concentrated habits of attention since he has a right to expect the teacher to repeat the question. Also, the tendency on the part of the teacher is to make the answer to the question a little easier each time he asks it, and this leads to poor preparation and bad habits of study.

There seems to be an almost incontrollable habit among teachers to repeat the answer to a question immediately when the student has given it. It is in itself not only unnecessary, but positively harmful. It tends to habits of inattention on the part of the students in the class who are not reciting. Why need they pay respectful attention to the student who is reciting, if the teacher will repeat the answer once, twice, or often three times?

By calling on the student before asking the question, opportunity is afforded the other students in the class to relax their attention. If the teacher asks the question, hesitates momentarily, then calls on some one for the answer, the attention of the whole class will be better held; for no one knows but that he will be called on to recite.

Talking too much is perhaps the most general of all the common errors in conducting a recitation. Many teachers literally talk their students to sleep and some almost talk their students to death. Too much talking kills interest; violates the students' self-activity; fosters bad habits of study; stifles individual endeavor, and robs the student of the pleasure of his own effort.

Teachers have to watch themselves to avoid falling into the habit of calling too much on the brighter students. It is not just to the weaker ones who usually need the opportunity of reciting more than their more fortunate companions.

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