The Place of Facts in the Educative Process

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THE PLACE OF FACTS IN THE EDUCATIVE PROCESS

BY

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CHAPTER I

THE PROBLEM

In recent years there has been a very definite attempt on the part of educational writers to avoid the generalities found in early writings and to base their conclusions on the results of careful analysis and controlled experimentation. The field has narrowed from a discussion of education in general to a consideration of how the individual child actually learns and grows. Consequently, individual needs and interests are now receiving greater attention than heretofore. There has been a shift of emphasis from content to attitudes, habits of thinking, cooperation, and other desirable personality qualities. However, in spite of the good work done to improve education, it is significant that little effort has been made to determine the place and functions of factual information with reference to the educative process considered in its entirety. Educational authors have indicated their realization that a problem exists. Thus Daniel W. La Rue in his recent book (34) makes a definite statement of the problem of this thesis, but does not fill out nor complete his outline. He does not subject it to critical analysis, but dismisses in some three or four paragraphs a matter which seems to need elaboration and clarification.

It is the purpose of this thesis to develop the problem as suggested by La Rue. The thesis is an endeavor to establish general principles con-
cerning the amount and character of the factual information necessary for a realization of the goal of true education and the permanency with which facts ought to be mastered.

The first step in an attack upon the problem of the place of facts in the educative process is obviously the listing under appropriate classifications of the purposes of education as commonly conceived and accepted.

The second step is a determination of the various functions that factual information may discharge in the achieving of the ends of education. This step includes a classification of the types of factual information mentioned or suggested by educational authorities.

The last step is the verification, in so far as is possible, of the conclusions reached. In the present thesis this is done by means of a questionnaire sent to fifty-eight educators of prominence. This questionnaire proposes for the consideration of these experts the criteria for determining whether and how to present each type of factual information as developed in the first part of the thesis. The vote of this jury of fifty-eight experts is thus used to add validity to conclusions based upon the writer's own analysis of the literature of the subject.
CHAPTER II

THE GENERAL PURPOSES OF EDUCATION

Before attempting to show the relationship between factual information and the purposes of education, it is necessary to determine conclusively what those purposes are. Much has been written pertinent to purposes, but, unfortunately, the issue is still somewhat confused. In the foreword of the report of the Educational Policies Commission (19), the authors express the sentiment that writings about purposes can be construed to mean almost anything and consequently mean almost nothing. Moreover, the ideas of educational authors are not always sound in themselves. Hence, there is need for a direct statement of the purposes of education. This is necessary before any work can be done with the question of factual information. This thesis accepts the report of the Educational Policies Commission as the most complete and authoritative statement of the purposes of education in America. The report aimed at making its statement inclusive. Moreover, the members of the Commission were experts in their fields. In May of 1936 a committee met in Chicago to start work on the report. Among those present were such men as Aiken, Briggs, Carrothers, Douglass, Kelly, Rankin, and Thayer. In October and November of the same year subcommittee conferences met in Cambridge, Massachusetts, and in San Francisco, California. January, 1937, was the occasion for a three-day meeting in Washington, and February, 1938, was the date of the conference of curriculum
specialists in Atlantic City, New Jersey. Shortly after this date the report appeared. These facts are mentioned to indicate that this report is a comprehensive study of the question of the purposes of education and to show the preparation that was required to arrive at the conclusions stated in some few hundred brief pages.

The Educational Policies Commission is vitally concerned with the nature of educational objectives. The Report leaves no doubt in the mind of the reader that it accepts the psychology and sociology of the educative situation as basic factors in determining objectives. John Dewey (16:3-6) gives an analysis of these two elements. True education, according to Dewey, comes through a stimulation of the powers of the child as a result of the demand of situations in which he finds himself. He is prompted to act as an individual, but concomitantly as a member of a unity. He is encouraged to come forth from his shell of egotism and to conceive of himself as an integral unit of his own group. Through self-activity in meeting the situations he encounters, he arrives at definite ideas as to what his responses mean in social terms. The starting points in the educative process, according to Dewey, are the powers of the child and his instincts. Therefore, great attention must be given to the psychological structure of the individual. But the instincts and tendencies of the individual must have social equivalents. This is stated in very pithy language by Dewey. He says:

I believe that knowledge of social conditions, of the present state of civilization, is necessary in order properly to interpret the child's powers. The child has his own instincts and tendencies, but we do not know what these mean until we can trans-
late them into their social equivalents. We must be able to project them into the future, to see what their outcomes and end will be...
The psychological and social sides are organically related and education cannot be regarded as a compromise between the two, or a superimposition on one of the other. We are told that the psychological definition of education is barren and formal - that it gives us only the idea of development of the mental powers without giving us an idea of the use to which these powers are put. On the other hand it is urged that the social definition of education as getting adjusted to civilization makes of it a forced and external process, and results in subordinating the freedom of the individual to a preconceived social and political status (16:4-5).

While it is true, as Dewey maintains, that the objectives of education must be determined in part by psychological and sociological factors, these factors themselves must be based upon something more fundamental; that is, upon philosophy. For philosophy provides, as de Hovre very aptly states, a theory of life. He says:

"Philosophy, then, is to be considered as a doctrine or theory of life. This is the essential characteristic of philosophy, which is often defined precisely in this way. As such, it should present a concept of life that is firmly established, as well as sound principles of conduct and worthy ideals. A conception of life thus understood is likewise an essential factor in the formation of character (14:XXXIII)."

This thesis will not attempt to determine the constituents of a true philosophy of life. It is merely postulated here that such a philosophy exists and that it must be accepted as the ultimate basis of all educational objectives. The philosophical background upon which objectives are based is immutable, but since the schools are an expression of social policy, the objectives of schools necessarily require occasional adapta-
tions and modifications. Each successive adaptation and modification should not be a change in philosophy, but a closer realization of the real meaning of that philosophy. When a philosophy has been determined and put into execution there is established an ultimate basis for the formulation of educational objectives.

After discussing at some length the nature and sources of educational objectives, the Educational Policies Commission turned its attention to the democratic processes. It is assumed that the social policy of America is democracy, and that the primary aim of a democracy is a consideration of the general welfare. This welfare can be furthered by education. That such a consideration has always been before the minds of statesmen and educators since the inception of public and private education in America is apparent from an examination of the literature. As early as 1660 the House of Burgesses of Massachusetts voted for public participation in the furthering of education:

That for the advance of learning, education of youth, supply of the ministry, and promotion of piety, there be land taken upon purchases for a college and free schools, and that there be with as much speede as may be convenient, houseing erected thereon for entertainment of students and schollers (10:47).

In 1664 the Massachusetts court issued the following statement:

Foreasmuch as it greatly concerns the welfare of this country that the youth thereof be educated not only in good literature, but sound doctrine, this court doth therefore commend it to the serious consideration and special care of the overseers of the college and the selectmen in the several towns not to admit or suffer any such to be continued in the office or place of teaching, educating, or instruction of youth, or child, in the college or schools that have
manifested themselves unsound in the faith or scandalous in their lives (17:36).

Washington in his Congressional Address of 1790 said:

Nor am I less persuaded that you will agree with me in opinion that there is nothing which can better deserve your patronage than the promotion of science and literature. (50)

Other indications as to the importance that early public leaders and educators placed upon education as a means of promoting the general welfare can be obtained by reading the Ordinance of 1787, early state constitutions, state statutes, the Ohio Constitutional Provision of 1812, the Indiana Constitution of 1816, and the Kalamazoo case.

In more modern times there is abundant evidence of the same concern for the general welfare as that indicated above. George H. Martin, in a book published in 1923, states that "the universal education of youth is essential to the well-being of the State....The child is to be educated not to advance his personal interests, but because the State will suffer if he is not educated" (37:14-16).

Cubberly emphasizes the importance of the general welfare when he states that no expense should be thought extravagant when the purpose of the expenditure is the liberal education of youth (13:58).

The above obviously is not an exhaustive listing of writings in which the importance of the general welfare is indicated, but merely shows the concern that the people have had and still have for its preservation and development.

An outcome of the concern of the people for the general welfare has been the generally prevalent belief in America that human welfare is pro-
moted by human sympathies and that individuals are more important than institutions. In any consideration of human welfare, however, it must be remembered that although individuals are vastly more important than institutions, still the latter are necessary for promoting the welfare of individuals. Social institutions are the conserving elements in a democracy, and when these institutions begin to lose their vigor the general welfare is affected. Such are the opinions of the Commission in its treatment of the aims of democracy.

According to the Commission another aim of democracy is a consideration for civil liberty. It is apparent that democracy by its very essence endows individuals with important rights and duties. These beget one another since they are correlative in nature. These rights presuppose a high regard for humanity and human liberty. In a democracy education is a potent force in the preservation of civil liberty. However, in any consideration of civil liberty it is to be remembered that men are marked by important differences. Individuals vary in their capacity to partake of and enjoy civil liberty. Individual differences must be recognized and coped with in any educational system that is efficient and productive of the realization of the purposes of education as enumerated in this thesis. The necessity for an equality and not an identity of education is obvious. As Comenius says:

Education is indeed necessary for all, and this is evident if we consider the different degrees of ability. No one doubts that those who are stupid need instruction, that they make shake off their natural dullness. But in reality those who are clever need it far more, since an active mind, if not occupied with useful things, will busy itself with what
is useless, curious and pernicious; and, just as the more fertile a field is, the richer the crop of thorns and thistles that it can produce, so an excellent intelligence becomes filled with fanciful notions if it be not sown with the seeds of wisdom and of virtue (32:55-56).

It is apparent that equality and not identity of education is meant here. A research bulletin of the National Education Association declares in similar vein:

Justice further demands that school work be provided which is commensurate with each pupil's ability. In other words, the recognition of the special needs of dull and gifted pupils has placed upon the school the responsibility of providing adequately for them. This means differentiated curriculums and differentiated courses of study (49:186).

The Commission contends that civil liberty implies an equality of educational opportunity, and then continues to state that civil liberty connotes a popular government. But a popular government needs universal education to combat the destructive evil of ignorance, an enemy of popular government. Civil liberty in a popular government can best be realized by an extension, a particularization, and a diffusion of knowledge.

The Commission further states that democracy involves an appeal to reason. Violence should be outlawed in a true democracy, since acts of war, except for defensive purposes, frustrate the inherent purposes of a democracy.

The last ideal that the Commission considers as a constituent of a democratic purpose is the opportunity to secure happiness. It believes that education is the key to an abundant life, since happiness involves wisdom in making judgments. This wisdom can be secured through education.
In the writings of Rosencranz there are found statements showing the relationship between education and the mind which is the instigator of judgments. He states:

The nature of education is determined by the nature of mind - that it can develop what it is in itself only by its own activity. Mind is in itself free; but if it does not actualize this possibility, it is in no true sense free, either for itself or for another. Education is the influencing of man by man, and it has for its end to lead him to actualize himself through his own efforts. The attainment of perfect manhood as the actualization of the freedom essential to mind constitutes the nature of education in general (51:19).

Thus far in this chapter there has been a consideration of the nature and sources of educational objectives, particularly as affected by the policy of America. Before attempting to consider specific objectives or purposes of education as outlined by the Commission, it may be prudent to digress and to give a general view of the purposes of education as discovered in educational literature. This question has been a problem of leaders of thought and action of all communities and civic groups of any importance. They, as well as educators, realize that many popular opinions are held as to the purposes of schools. Many of these are erroneous and fallacious. However, it seems self-evident that in America a democratic way of life is the all inclusive purpose of education. But what constitutes democratic living needs determination. In 1860 Herbert Spencer, who did not have America in mind, lists the following objectives of education. These seem applicable to a democratic way of life in America.

1. Self-preservation
2. Securing the necessities of life
3. Rearing and disciplining of offspring
4. Maintaining proper social and political relationships
5. Providing for leisure activities (54:18).

The Report of the Commission on Reorganization of Secondary Education gives the following familiar seven as purposes of education:

1. Health
2. Command of fundamental processes
3. Worthy home membership
4. Vocational guidance
5. Citizenship
6. Worthy use of leisure
7. Ethical character (48:110-16)

In Principles of Education by Chapman and Counts the following purposes are found:

1. Care for bodies
2. Rearing of children
3. Securing of economic necessities
4. Organization of civic responsibilities
5. Engaging in recreation

The Educational Policies Commission does not state nor infer that the above or any other existing classifications are inadequate, but merely proposes a new group of purposes. These are as follows:

1. The purpose of self-realization
2. The purpose of human relationships
3. The purpose of economic sufficiency
4. The purpose of civic responsibility

SELF-REALIZATION

Self-realization postulates an inquiring mind - one that is constantly actualizing its potentialities for the betterment of the entire being. It assumes that the mind is able to think and that the use of the mind will develop the personality of the person concerned. The develop-
ment of personality is nothing more than self-realization. In this development education is a means and not an end.

An inquiring mind is able to bring a person to the objective of self-realization, for such a mind can lead to a facility of speech, the required ability to read and write, a knowledge of health requisite for good living, an appreciation of recreation, and to the pursuit of intellectual and esthetic interests. When these abilities and knowledges are a part of the personality of the human being, then he has reached the goal of at least partial self-realization. Education will foster the evolution of this personality by actualizing the potentialities existing. It will make the individual realize his place in the universe and his obligations which arise because of this place. Education will be a specific means by which he will be able to become what he is capable of becoming. This is self-realization.

HUMAN RELATIONSHIPS

The second objective or purpose of education, as set forth by the Commission, is that of human relationships. Man is gregarious by nature, and, as a gregarious being, he must know the intricacies of living with his fellowmen. He must be a personality within a group, yet he must not lose his individuality, but must subject it to the good of the group - providing such subjection is not an infringement upon his rights as a human being in the citizenship of the world. The educated person puts human relationships first for "the thought of self includes thoughts of social relationships. John thinks of himself as Thomas' son, as Charles' partner,
and as Mary's husband" (23:513).

The goal of human relationships can best be realized through the development of educated personalities. The educated person enjoys a rich, sincere, and varied social life. Such a life implies the possession of a definite training as the basis of this life. This training will produce individuals who have many-sided personalities, who possess insight, and who have the ability to consider the demands of human welfare. Such is the opinion of Fitzpatrick. He has this to say in regard to a many-sided personality:

Culture as the education of the free man, the achievement of the full stature of a man finds here an extension in scope to the whole society and the development of the human personality to its length and breadth and height and depth .... The interests of the cultivated man, if he happens to be a scholar, should not be confined to the narrow field of learning in which he is delving; in fact, as has often been said here, the very success of his work in this field is dependent upon his general information and interests. The scholar as a human being will be interested in the social movements of his day, whether it be rescuing children from premature devitalizing labor, the lessening of human losses in industry, or a plan of management that will bring reasonably permanent industrial peace; or the creation of a new park on the other side of the city, the improvement of the public service of the state, or the creation of a new world order (21:74).

Fitzpatrick believes that a definite training will produce individuals who possess insight. A person, says he, endowed with a personality of many facts, will have the power to discriminate, to see things clearly in themselves and in their relationships. Hull likewise emphasizes the necessity of discrimination and its importance as an attribute:
It is not enough to have before the mind a consciousness of the various alternatives among which choice is to be made. There must be some judgment of the alternatives in the light of general ideas bearing on conduct: and these general ideas are what we call principles (28:107).

Pound also emphasizes the necessity of discrimination. He states:

All [the graduates] may be good citizens and the aggregate may be the highest type of citizenship if in the university they were led to see clearly, to think critically, and to hold their minds open and to form tolerant judgments of their fellows, to resist unreason and abhor willfullness, to look with discrimination upon the fashionable project of the moment, to remain unmoved by crazes and panics and hysterias, judging them by a mature sense of values and by appraising their phenomena at their permanent worth (46:513).

Fitzpatrick gives as the third result of the training which comes through education the ability to consider the demands of the human welfare. The command, "Thou shalt love thy neighbor as thyself" must be the by-word of the man possessing a well-developed personality and the power of discrimination. Failing to abide by this command he will exhibit the worse kind of selfishness - selfishness of knowledge. Intellectual achievement is a personal thing and as such gives its own personal satisfaction, but unless the individual consecrates these gifts to the public service he becomes essentially selfish. These gifts must find expression "in his contact with other men, and in his various duties as citizen, as father, as neighbor, or as worker."

The Educational Policies Commission, in elaborating upon the objectives of human relationships, states that an educated person is one who can work and play with others, who knows the amenities of social behavior, who
appreciates the family and social institutions and is a factor in the conservation of family ideals since he is skillful in home-making, and lastly, who maintains democratic family relationships.

**ECONOMIC SUFFICIENCY**

In discussing the third objective of education the Commission divides its treatment into two phases. It discusses economic sufficiency from the viewpoint of the producer and from that of the consumer.

The educated producer, according to the Commission, knows the satisfaction of good workmanship. The Report does not advocate any particular type of vocational training as a means of securing good workmanship. The Commission acts wisely in refusing to separate vocational from liberal education, for as Butler states, vocational training and liberal education are not antagonistic:

One concludes, therefore, that the purpose of a vocation is to gain time for avocation: that the aim of labor is leisure....(5:120).

Finney, likewise, recognizes the need for vocational training, but holds that liberal education must not be separated from the vocational. He states:

Second, vocational education must not be separated from liberal education. To furnish vocational training alone for any class or group would be to exclude them from the cultural benefits of civilization, and, besides that, to make them subsidiaries in industry itself. What was pointed out in the case of farmers is true of every other economic class; they must share the intellectual resources on a basis of equality with other classes, or else they will become a depressed, exploited, and inferior caste. Democracy cannot exist at all except on the basis of a cultural democracy (20:246).
Besides knowing the satisfaction of good workmanship, the educated producer, according to the Commission, understands the requirements and opportunities for various jobs. Education should give him the background which will enable him to see the amount of manipulative skill necessary for the accomplishment of a certain task. Moreover, he knows in a general way, how far his knowledge will allow him to explore the realms of new and better positions and occupations. One of the aims of education is to prepare man for life by teaching him how and why to do things, but education should not lead him into channels that are above his head and which have a tendency to bring him to chaos. True education should train individuals so that they will become aware of their capabilities and capacities.

The Commission continues its analysis of the purpose of economic sufficiency by stating that the educated producer has selected his occupation. He has not been forced into his life work, but has made a rational choice of his occupation. He now possesses the necessary element of interest. The complaint is often raised that many people are forced by circumstances beyond their control into positions that are not of their own selection. It is true, unfortunately, that people do not always labor in the field of their choice, still these cases do not belie the general principle: men usually find the niche for which they are intended. It is logical to assume, moreover, that the odds are in favor of a person's succeeding in his own chosen profession and that he will seek to improve his efficiency if he is occupied in a position of his own choice. The elements of interest and contentment are conducive to success and personal satisfaction.
The educated producer in maintaining and improving his efficiency will be led to understand more fully the social value of his work. Moreover, he should be brought to a clearer realization of social structures and social processes. Finney lists certain things as elements which must be considered. It is these that the educated producer will understand:

1. The family
2. The local community
3. The state
4. The industries
5. The church
6. The school
7. The press
8. The standards of living
9. The customary recreations
10. Health preserving activities
11. Miscellaneous (20:40)

With these ten subdivisions as his subject matter the educated producer has a large scope of activity to consider. As an educated person he must take into account each and every one of them. Moreover, they must mean something to him and must not be mere categories. They must be vital and be conceived of as necessary constituents of society.

Thus far in this part of the chapter the objective of economic sufficiency has been discussed from the viewpoint of the educated producer. There is another viewpoint stated by the Commission - that of the place of the educated consumer. The educated consumer will plan the economics of his own life, develop standards of guiding his expenditures, and be an informed and skillful buyer. Lastly he will take appropriate means to safeguard his interests. Such are the opinions of the Educational Policies Commission in regard to the purpose of economic sufficiency.
CIVIC RESPONSIBILITY

Civic responsibility, the fourth purpose of education, influences individuals to the extent that they think of themselves as members of a group, as elements in a composite. It is this objective that gives a citizen pride in his community, his state, and his nation. It is the motivating force that prompts him to give up his life on the field of battle for the good of his state. It is the basis for all local government, for all civic organizations, for the betterment of youth, and for the rehabilitation of old age.

According to the Educational Policies Commission, the educated citizen acts to correct unsatisfactory conditions. These conditions may arise from the local government in power or from the manner in which a particular type of government is maintained by the individuals in the community. Dissatisfaction may be due to the type of person in charge. These and other elements of imperfect conditions will be realized by the educated citizen and means will be taken to overcome them. It is as much a mark of intelligence to be able to see the cause of trouble in a community as it is to be able to rectify that cause. The educated citizen will realize when imperfect conditions exist and will know how to rectify them. Moreover, he will see that these conditions are rectified.

The Commission believes that if a man has a real understanding of what is meant by civic responsibility, he will have adequate defense against propaganda. He will not be bigoted, but will respect differences of opinion. He will measure scientific advance by its contribution to the
general welfare. He will be a cooperating member of the world community, will respect the law, and will respond to his civil duties and obligations. Lastly, he will be prompted to act with unswerving loyalty for the maintenance of democratic ideals.

The Educational Policies Commission brings its discussion to a close by mentioning critical factors in the attainment of educational purposes. It notes that many factors condition the success of education, such as human stock, effects of mal-educative agencies outside the school, and the efficiency of schools themselves.

A recapitulation of the report of the Commission is now in order. Its twofold purpose was that of determining what the schools in the United States ought to try to accomplish, and what is to be done to accomplish certain definite purposes of education. The Commission examined the nature and sources of educational objectives, and, after studying these, went on to a consideration of the democratic processes. It then examined the general views of the objectives of education and concluded that a new classification should be presented. This classification gives as the objective of education the following:

1. Self-Realization
2. Human relationships
3. Economic sufficiency
4. Civic responsibility

These objectives shall be taken as the purposes of education for this thesis.
OUTCOMES ARISING FROM THE OBJECTIVES OF EDUCATION

We have attempted in this chapter an analysis of the purposes of education as conceived by the Educational Policies Commission. These purposes are meant to be all-inclusive. The purposes of education, as set forth by the Commission, seem to be divisible into the following outcomes:

1. Habits
2. Information
3. Health
4. Interests
5. Ideals

This classification of outcomes is made in order, if possible, to make the work of the Commission more concrete. An analysis of what these outcomes mean and connote will clear the field for a discussion of the problem of the thesis - the place of factual information in the educative process. It is not necessary to elaborate the significance of these outcomes to any great extent. All that is required is that some determination be made of their meaning.

One of the outcomes of education should be the development of habits. These are divided by Parker into classes: special and general. Much of the work of the curriculum is concerned with the fixation of special habits. Parker states:

Training in linguistic expression, either English or foreign, is largely of this sort. Skill in using language consists largely in the easy, free, habitual use of thousands of detailed forms of expression, each form corresponding to a habit.... Other examples of such special habits are found in the motor skill involved in laboratory work. Skill in bending glass consists in a multitude of motor habits; likewise skill in making pie crust, in planing a board (45:20)
Besides the development of special habits education should foster the growth of general habits. Thorndike lists certain general habits that he expects education to produce. These are habits of self-control, of accuracy, of steady and logical thinking, of technical and executive application, of being honorable, courageous, just, sympathetic, reverent, and modest. There can be no doubt that true education will mean the fixation of all of these to some extent at least.

Another outcome of education should be the acquisition of information. The question of what information is to be conveyed to students and its permanency is the immediate problem of this thesis. Let it suffice to state here, that an education that did not leave the recipient with some items of factual information would be futile, for the very act of making intelligent judgments, an indication of the possession of education, flows from a comparison of concepts which have their ultimate basis in the objective world of facts and information.

It cannot be denied that health should be another outcome of true education. The old adage of a sound mind in a sound body is still very significant. Authorities seem to be unanimous in recognizing health as an aim. Otto states:

Health education, like character education, is an integral part of nearly all aspects of school life. Health, in a certain sense, is a way of living and good health habits are manifest in nearly all school activities as well as in the out-of-school life of the child. The conservation of health is conceded to come first among educational aims (44:78-87).
Another outcome of education should be interest. Herbert recognizes the significance of this attribute:

The word interest stands in general for that kind of mental activity which it is the business of instruction to incite. Mere information does not suffice, for this we think of as a supply, or store, of facts which a person might possess or lack and still remain the same being. But he who lays hold of this information and reaches out for more takes an interest in it (24:44).

If education has been successful in instilling in a student the quality of interest, he will have material to occupy him in the after days of his life, long after he has left school. It is hoped that education will ultimately reach that place where students will lay hold of and reach out after "more of the type of experience to which the school has introduced or habituated them" (45:23).

In regard to the last outcome of education, ideals, Parker makes note of the fact that the immediate informational aim of education should not receive precedence over the general aim of establishing ideals. Secondly, the ideal must not be abstract, but must be tangible and of such a nature that it can be put into execution in the life of the student. Thirdly, students must realize the vast extent of applicability that ideals possess. Lastly, ideals must become an influencing element in the life of a student. He must incorporate them into his very being.

The above discussion of the outcomes flowing from the objectives of education purposely has been very brief. However, it is hoped that this discussion, although short, will add a certain clarity to and make more complete the reader's concept of the purposes of education. With these
purposes and their outcomes accepted, the next step is to show the relationship existing between these purposes and factual information.
CHAPTER III

THE RELATIONSHIP OF FACTUAL INFORMATION TO THE PURPOSES OF EDUCATION

I. Factual Information and the Goals of Education

We have accepted as reasonably well descriptive of the purposes of education the four goals proposed by the Educational Policies Commission (19). These goals are: self-realization, the maintenance of appropriate human relationships, economic sufficiency, and a sense of civic responsibility. Self-realization, as has been shown in another place, includes many things, but in general it may be said that an individual has arrived at selfhood if he is able to think clearly, if his emotions are under control, if he understands how to conserve his physical health, if he has developed the habits necessary for contented and useful living, and if he is able to do some thing or things so well that he is a respected and self-respecting member of society. Self-realization in the fullest sense of the term is scarcely possible without economic sufficiency, and the reason for treating economic sufficiency as a separate goal is that it is on the one hand vitally important, and on the other frequently disregarded by those who are responsible for the educational development of the student. But the individual may be well developed mentally and be well able to earn a living without a knowledge of those things that make for happy human relationships and without a sense of civic responsibility. It
is apparent, therefore, that the two goals of human relationships and civic responsibility must be kept in mind if education is to result in the development of fully rounded and socially useful personalities.

The purpose of this chapter is to determine the various functions that factual information may discharge and the relationship existing between factual information and the four goals of education as already described. There is a belief that teachers are not rarely inclined to insist upon the acquisition of factual information without stopping to consider for what reason it is acquired. Conklin (12:161-70) makes the statement that teachers have a tendency to make education a process in which the aim is to have facts committed to memory and to give back those facts to the teacher in examinations. The success of the retention of these facts is taken as a measure of the success of teaching. It is true that in certain schools great emphasis is placed on the development of personality traits and the growth of a sense of civic responsibility. But even in these schools much of the student's time is spent in the acquisition of factual knowledge. For practically every course taught there is a concomitant textbook. These have a tendency to become more and more voluminous, and it is probably not an exaggeration to state that the minimum number of facts in any textbook used in high school is a thousand.

An examination of an up-to-standard textbook in American history, for example, will show that it contains at least seven hundred pages, with perhaps an average of twenty facts per page, or a total of 14,000 facts in all. When a course is completed it is the usual procedure to subject the students to an examination. This examination contains anywhere from ten
to a hundred or more questions, selected to ascertain the students' knowledge of the several aspects of the field. The examination itself is really a means of coercing the student into mastering the entire contents of the book. This thesis does not condemn this procedure, but merely describes it for the purpose of providing the necessary background for the ensuing discussion.

The question, then, that is now to be attacked is this: For what reasons is it legitimate to demand that students should master factual information? What are the possible relations of factual information to the realization of the four goals that have been accepted as universal in their application? In answering these questions it will be kept in mind that the discussion is to cover the entire process of education from kindergarten through the graduate or professional school. Our first effort will be to construct from the literature a general concept of the relationship between factual information and the goals of education. Later an endeavor will be made to divide factual information into various categories according to the functions which it discharges.

1. Factual Information and Self-Realization

To arrive at the goal of self-realization there is needed above all else the element of experience, for experience is an essential means of actualizing the potentialities of the individual so that he may become what he is capable of becoming. Experience means contact with the outside world, which is a world of fact and reality. Facts contribute to the development of the individual, for it is only through knowledge that he can become adjusted to his environment. Facts justify themselves if they aid
in the accomplishment of this adjustment, if they result in a more perfect being as an end product. In a democracy there must be adjustment to the social inheritance accumulated by the efforts of the race. Adjustment, or education, requires that the mind of the individual be exposed to this heritage and that at least a part of it becomes his. This heritage is largely factual in nature. Hence the acquisition of those facts which will give the child or adult an insight into the social heritage is necessary. Mastery of a selected portion of the facts that make up the heritage of man will lead the mind of the person concerned "from adjustment to the particular concrete case to a broader sort of adjustment in which the mind looks beyond the concrete fact to the underlying principle or law" (53:147).

The child as he develops grows into a fuller being by the acquisition of knowledge. The more complete that knowledge is, the closer he comes to actualizing the potentialities that he possessed as an infant, and the closer he comes to being a person who has obtained the goal of self-realization. J.W. Powell has this to say of the place that facts have in the development of the individual:

Every child is born destitute of things possessed in manhood which distinguishes him from the lower animals. Of all the industries he is artless; of all institutions he is lawless; of all languages he is speechless; of all philosophies he is opinionless; of all reasoning he is thoughtless; but arts, institutions, languages, opinions, and mentalations he acquires as years go by from childhood to manhood. In all these respects the newborn babe is hardly the peer of the newborn beast; but as the years pass ever and ever he exhibits the superiority in all the great classes of activities until the distance by which he is separated from the brute is so great that his realm of existence is in another kingdom of nature (7:1).
The development indicated by Powell leads to the gradual acquisition of culture, an index of self-development. Culture, as understood in a Christian community, demands a wide range of knowledge, much of which is factual. This culture will include religion, philosophy, science, literature, and art. Culture, as Melvin states, is spiritual in nature:

The school of America must realize with a new definiteness that it is dealing with spiritual beings. Unless we recover this ancient basis of education we cannot truly understand the educational correlaries to which we have submitted ourselves.... Inductively, they (the American schools) are feeling backward, through the ramifications of this new system to its foundations. Inevitably, they lead not to materialism, but to the spiritual realization of the individual.... When the scales fall from our eyes, we shall behold American education as fundamentally a spiritual process (40:89).

Since culture is of such importance, a sufficient number of facts should be taught and mastered to give the individual a fair degree of culture - an element of self-realization. This does not imply that a man must know all the facts of art, literature, and music; but he should at least know some facts and be able to react to them in a spiritual way. His reaction will be through an appreciation based upon some understanding of values, of relationships, and of the relative importance of the cultural experiences he has undergone. He will manifest his appreciation through his reaction to beauty; and this reaction requires contact with the outside world as its ultimate basis, for St. Thomas and other philosophers declare that beauty has certain objective characteristics (39:86-87). The implication is that enough facts ought to be learned to get the individual in contact with objective beauty. He need not be a connois-
seur of the beautiful, but he should know the beautiful as one of the finer things of life. The extent of the facts needed depends upon the individual capacity, and no objective criteria can be established regarding the amount of factual information necessary for an appreciation of beauty.

Another constituent element of self-realization is the ability to control the emotions. Man must realize that in emotion lies the well-spring of all the strength and energy of character. The more fully developed a person is, the more he will be able to cope with and control his emotions. Factual information should be extensive enough to enable man to accomplish this control.

In closing the discussion regarding factual information and its bearing upon the first purpose of education — that of self-realization, it seems appropriate to give some indication of the results that should follow from the acquisition of factual information. Shields has aptly summarized the matter by declaring that the individual must have acquired:

1. A reasonably wide knowledge
2. A thoroughly coordinated knowledge
3. A ready and easy control of the knowledge possessed
4. The habitual use of knowledge and mental power to meet the demands of an ever-changing social environment (53:249).

2. Factual Information and Human Relationships

Human relationships, the second purpose of education, likewise requires a certain amount of factual information. The kind and amount of factual information taught for a realization of this end will be influenced by the concept of the state accepted by the educating bodies. Hobbes
believed that the state was all-important, the source of all laws, the arbitrator of all religions, and the owner of all property (53:258). The individual would have to receive a different type of factual information in this state than he would in the state of Locke, who held that while the natural law was secondary to the law of the statute books, the individual had the right to controvert any state law which went beyond the bounds of caring for life, liberty, and property (35). In the state as conceived by Humboldt the educand would be brought to consider the state as an institution that had nothing to do with the material welfare of the individual (53:258). In the state of Treitschke a few persons would be exposed to education, on the assumption that only a minority group of the intellectual aristocracy would have time to work for the good of the community (22). If the opinion of the Christian Socialists of England (53:259), Paulsen’s conception of the state (53:261), or the ideas of Bismarck (36) are accepted, it will be found that a different kind of factual information will be necessary in order to secure the second purpose of education, human relationships.

Our chief concern, however, is with education in democratic America. In a democracy each and every citizen should receive that type of factual information that will prepare him for coping with his duties toward his fellow citizens and the state. In a democracy the exact place and amount of factual information for the securing of the purpose of human relationships cannot be indicated categorically. There will be a sliding scale of values which is applicable to various individuals in different degrees. Some individuals must be taught facts which will pre-
pare them for industry, others must be led to a knowledge of the professions so that the nation as a whole may be led to a higher degree of perfection and be kept there by the application of certain factual information to the problems of the entire state. Shields recognizes and answers the difficulty as to who shall receive one kind of education and who another. He says:

The chief difficulty encountered in a democracy centers around the determination of vocation. Who shall be selected to fill our administrative offices? Who will pick out the boys who are to receive a training that will fit them for the bench? Who are to be our physicians and surgeons? Who our priests and teachers? None of these decisions can be based on birth or social strata in this country, as they may well be in countries that still preserve social laminae. As a result of this condition it will be seen that universal education is demanded for the good of the state. All the children should receive such an education as will fit them for proceeding along the lines of their native abilities when the proper time for differentiation comes. The best interests of the nation demand that education search out all the ranks and files of our children to discover if possible those who are especially gifted for the higher walks of life. This general education should be maintained until the advent of adolescence begins to manifest aptitudes and vocations (53:262-263).

Demiaskevich speaks as follows of the factual information that the prospective citizen should possess in order to achieve the goal of human relationships. He says:

When the importance of the informational side of school learning is insisted upon in the course of study, the purpose has not been to advocate omniscience as an educational objective. But it seems desirable that the prospective citizen should have acquired enough information on
problems he may have to face. It is still more important, perhaps, that he should possess sufficient knowledge of the fundamental truths, moral, social, and scientific, ignorance of which would make him dangerous to others (15:279).

To accomplish the goal of human relationships it is apparent, as implied above, that the individual must be taught that amount of facts which will give him faith in his fellow men. Moreover, he must be trained not only to believe in his fellow men, but also to be able to hope for the future of these individuals and himself. He must know enough facts to be able to love those fellow creatures, since this is the basis of Christianity, the integrating element of a democracy. In short, the bonds that will bind the members of a true Christian state are faith, hope and charity. Those facts which help individuals to acquire these attributes will be worthy of teaching, and their number will be directly proportionate to the nature and amount of faith, hope and charity required under the circumstances that exist.

With faith, hope, and charity functioning as a result of the educative process there is in existence a realization of the second purpose of education - that of human relationships. Factual information will have a distinct part to play in the establishment of these relationships; individuals need to know that private gain must always be held below the level of the public good. They must know that the work of the individual in society has a tendency to influence that society in generations to come. They must understand that in a democracy the educated citizen is responsible for securing wise legislation, a just judiciary service, and conscientious executives. They must realize that democratic human relationships
are based on the belief that an individual can assume civic responsibility and through this responsibility further the good of the entire community.

3. Factual Information and Economic Sufficiency

The third purpose of education as set forth in Chapter II is that of economic sufficiency. An examination of this purpose will show the relationship of facts to its accomplishment. Man as he starts his life, is totally dependent upon others. As he advances along the scale of physical and moral development, he is assisted and under the control of agencies set up as educative. If these agencies are correctly organized they will help to bring the individual to the goal of economic independence or sufficiency. Shields has this to say about the aim of economic sufficiency:

It is the business of education not only to protect the health of the child and to promote the development of his brain and muscles, but so to train his eyes and hand that he may in due time be able to wrest from his physical environment the means of support; food, shelter, and the various instrumentalities of physical comfort and well-being. Nor does this mark the end of the process. During infancy and childhood the individual depends on others for his daily dole of food and for most of those things on which the maintenance of physical life depends and if the race is to continue to maintain itself, not to speak of making progress, the individual in due time must do for others what has been done for him. Efficiency in this task marks the culmination of the educative process along economic lines. The purpose of this line of educative work may be designated as education for economic efficiency (53:213-214).

Economic sufficiency may be designated as the "bread-and-butter aim." Failure to teach a student sufficient facts to make him aware of the importance of this aim may lead him to the point where he will not
consider self-support. Inability to support one's self and one's family leads to a disintegration that can affect both the physical and mental makeup of the individual. Shields points out that the "bread-and-butter" aim, as he calls it, does not mean that the child should be taught specifically to get ready for self-support in the very beginning of his education, but that this aim should be kept constantly before the individual at every stage. The result of education for economic sufficiency should be the ability to render to society some service - intellectual, artistic, inventive, manual, or whatever it may be - for which society is willing to pay. With economic sufficiency an established fact the individual concerned can achieve the goal of civic responsibility - the last purpose of education as enumerated by the Commission (19).

4. Factual Information and Civic Responsibility

Civic responsibility is broad in its implications. In the achieving of this purpose there is need for a definite amount of factual information. Philosophically, the accomplishment of the aim of civic responsibility connotes more than the word means in a materialistic sense. Materialistically, this aim denotes nothing more than knowing the laws of the state and abiding by them. Philosophically, the realization of this aim implies the knowledge and possession of certain facts which give the aim a new connotation. It means that man must know and recognize the father-hood of God, and realize that this recognition implies certain obligations to his fellow men. Christ gave this dual commandment:

Thou shalt love the Lord thy God with thy whole heart, and with thy whole soul, and with
thy whole mind. This is the greatest and the first commandment. And the second is like to this. Thou shalt love thy neighbor as thyself. On these two commandments dependeth the whole law and the prophets (55: St. Matthew 23:37-40).

It is this command that gives a meaning to the term 'civic responsibility' and makes education for the accomplishment of this purpose an important goal of education. Shields states:

As Christians, we must strive not alone for food and raiment for our bodies, but we must strive for the attainment of riches towards God and possession of temporal goods that we may have wherewith to minister to our neighbor's need. It is this high motive that saves economic efficiency from degradation and makes it worthy of a place in the Christian system of education. Economic efficiency that is secured through selfish motives is a menace to society; it contains within itself the germs of discord and is the prolific mother of wars and bloodshed; it raises up capital against labor, and nation against nation in fratricidal struggle (53:232).

If man has acquired the facts that enable him to know God that knowledge will open his heart to a love for his fellow men, for love of God and love of man are intrinsically bound up in one another. This love will help bring peace and order to the earth. It will slowly extinguish the fires of hate and misunderstanding. Surely, facts have a place in the educative process if they are conducive to a realization of principles such as these.

5. Factual Information and the Curriculum

This brings to a close the treatment of the direct relationship between factual information and the purposes of education. However, to round out the discussion of factual information it is important that fac-
tual information should be considered from the viewpoint of the curriculum, of methods, of child training, and of the principles of education. While an elaborate treatment does not seem necessary, it does appear that any thesis dealing with factual information should give these aspects of the question some consideration because of their direct relationship to the purposes of education. The curriculum will be our first consideration.

The term curriculum includes "all the elements of experience rather than one only, that is, the content of subject matter that may be employed in experience. Pupil interests, activities, aims, method, content, in fact everything that influences the experience of the learner must be considered during the process of curriculum making" (6:66). This is likewise the stand of Strayer, who says:

"The curriculum should be a series of guided experiences so arranged that what is learned in one experience serves to enrich and make more valuable the experiences that follow (56:19).

This concept is reinforced by the statement of Bobbitt, who tells us that as applied to education the curriculum is "that series of things which children and youth must do and experience by way of developing ability to do the things well that make up the affairs of adult life...(3:42).

This modern curriculum displays a marked tendency to avoid specifying any given facts as subject matter and to define its goals in terms of 'cores of interest' or 'areas of experience.' But despite this trend there persists a certain belief in systematic knowledge which will continue to influence the place of facts in the curriculum for many years to come. W. W. Charters has devoted an entire chapter to the factors opposed to change in educational tendencies (9:12-26). An analysis of this chapter
is worth the time required, inasmuch as this is definitely a matter which
bears upon curriculum construction and curriculum content and consequently
upon the question of factual information. Charters in his work on Curriculum Construction gives some pertinent facts about the prestige that
systematic knowledge enjoys. He says:

It was, however, too much to expect that this encouragement of vocational education could
be done in the beginning, because admiration for the brilliance of the human mind working upon
erudite problems has always been a dominant force in the minds of scholars, and the early teachers
had neither the ability nor the desire to hold opinions about what constitutes knowledge other
than that contained in the works of the master minds. And when, at a later time, teachers began
to be carefully prepared for their vocation, particularly through the development of scientific
methods, the idea that what is most brilliant is also most useful for education held and still holds
a firm position in the pedagogic mind. Indeed, even today it verges upon bad taste to assert that many
very brilliant products of genius ought not to be included in the course of study for the first twelve
grades. The organized fields of knowledge have attained positions of almost unassailable strength (9:14).

From this systematic development of fields of knowledge certain
values have come. Charters discusses these in the work mentioned above.
He states that "the first value of these systematic fields of knowledge
as subjects of schooling lies in the fact that they undoubtedly add to
the human morale by calling to the attention of youth the brilliance of
the intellectual achievements of genius." And again, "even those stolid
or cynical high school students who treat their studies with matter-of-
factness, or flippancy, have been touched by the magnificence of the human
genius."
The second value of systematic knowledge that Charters lists is the fact that the great fields of organized knowledge have had an important influence on the progress of civilization. He shows that the X-ray, various electrical developments, gasoline engines, and other scientific achievements have all come from the fact that certain fields of organized knowledge have been developed.

The third value of systematic knowledge is that a highly organized set of facts as that presented in systematic knowledge is easy to teach. Systematic knowledge is such a "cut and dried compendium of facts" that the teacher has but to select a slice of that knowledge and present it to the students for their learning.

It might appear from this that the case for organized knowledge is secure. But there is another side to the question. In the first place systematic knowledge is not the static body of facts that it at first appears to be. In reality there is no such thing as permanently organized fields of knowledge, for such fields are constantly being organized and reorganized. New discoveries are modifying old concepts, so that in the last analysis much of what was once considered organized is now in a state of development. Knowledge cannot be considered as determined, but is in a state of evolution because of the fact that the human race is becoming conscious of an increasing number of problems and is in the process of further experimentation to verify conclusions than it was formerly. Blind faith in knowledge is a thing of the past.

In the second place it appears to be more difficult to put knowledge into practice than to acquire it. Charters says:
But it is one thing to say that one person is able to make one application and quite a different thing to assert that one person can make all the applications, particularly when he has not specialized narrowly upon any phase of the problem. It may be granted that one application can be made by one specialist, and still be contended with force that a single specialist cannot make all the applications; still more strongly can it be contended that all the applications could not be made by one layman, no matter how brilliant he might be. Both principle and application must be taught (9:18).

In the third place Charters states that knowledge divorced from the idea of utility is difficult to motivate. He concludes that people do not possess that "universality of curiosity" that will make them learn anything for the sake of learning alone.

A fourth weakness in advocating the study of organized fields of knowledge is the fact that in facing the problems of life youth must be equipped to meet the special problems of the day. Labor problems, government trends, the moral and social aspects of business, and the equilization of opportunity are but a few of the many problems of life. Yet not many facts are usually taught in the high schools or in the grades to help students to solve these problems. It is assumed that a person trained in the fields of so-called systematized knowledge should be able to make the necessary adjustments to the problems of the world, but can this assumption be established as true? These problems are not met because the student, in many cases, lacks the facts to cope with them. Adequate solution of these issues is not always found in textbooks. Yet these problems are vital and some provision must be made to cope with them. In reading books dealing with the curriculum (2) (6) (59) we find that there is
unanimity of opinion that the student is in need of facts and in need of information that will give him insight into these problems and that will help him meet these problems as an intelligent citizen.

To summarize briefly what has been said, let it be stated that systematized knowledge has been made the subject matter for instruction because it was believed that the best products of the human thinking ought to make the best material for study. However, there is some question as to the wisdom of making systematized knowledge the subject matter of instruction. The possession of systematized knowledge does not insure its application to the situations that arise in everyday life. Many of the things studied as systematic knowledge have no application to the ordinary layman. What stands, then, ought to be taken? Merely this, that the facts to be learned and their number should be determined upon the basis of practical use and their contribution to one living a full life. Both systematized and unsystematized fields of knowledge should be the source of curricular materials that the end result be the ability to live a well-rounded life that conforms to the standards of God and of men.

Besides taking cognizance of the problem of systematized as opposed to unsystematized fields of knowledge, the modern curriculum must concern itself with other considerations. Uhl (59) believes that there can be no definitely prescribed amount of factual information, but the offering will be dependent upon conditions in various places. Pupil equipment and curricula are in his eyes interdependent terms. The student must be taken by means of the curriculum from the stage he is at present and carried forward "by the best possible combination of forces and capacities of the
teacher.... and the pupil himself" (59;358). It is well to remember that the "actual curriculum of each pupil is that which he traverses." If parents and teachers examine the worth of any subject as set forth in the printed discussion of the subject, possible values rather than certain values are likely to be suggested to them. These possible values may fail of realization partly because of the pupil's inadequate equipment for the mastery of the subject under existing conditions (59;360). Facts have a place only when they help to secure the purposes of education and the exact number of facts to be taught will be dependent in large measure upon pupil equipment.

Uhl continues his discussion of the curriculum by a consideration of pupil interests. In considering facts two things must be kept in mind: Do the facts used really pertain to the interests that have been selected for cultivation? Do these facts harness interests for work? The interests of pupils are such a potent force that great care must be exercised in seeing that the facts selected actually foster and further continuation of those interests. Moreover, interests must be not only furthered, but must be harnessed to advance the individual intellectually. Judd speaks of the development of interests and of their affect upon the individual:

One can think of the child when he comes to the elementary school as prompted in his actions largely by animal instincts and sheer curiosity or desire for experience. He wants food and comfort; he wants bright things and new things; he reaches for these; he is impelled by instincts much as is the little animal that seeks to satisfy its immediate demands. Through the cultivation of a broader intellectual view, he substitutes for
these early desires certain maturer interests which lead to much more complicated and systematic forms of behavior. The child is no longer prompted in his acts chiefly by his instincts; he is prompted rather by the intellectual, social, and ethical interests which he has cultivated. The higher education to which he now comes will find it possible to build upon these higher interests and higher types of emotional experience (31:60-61).

6. Factual Information and Method

The purpose of the above discussion was to show that factual information is of vital concern to the curriculum maker and to the resultant product of his activity, the educand. A word in regard to methods is now necessary since method is an intermediate step between information and the purposes of education. It is the bridge by which facts influence and secure the purposes of education.

The word 'method' needs explanation. It has come to mean in many cases the knowledge and use of devices and teaching tricks which embryonic teachers obtain through attendance at normal schools. Many persons still hold to this erroneous conception of method. In modern educational literature and practice method has a different implication. Kilpatrick says:

Method, in consequence, becomes then much more than questions of how a child best learns any one thing, as spelling or silent reading. Such inquiries are good and proper but they do not suffice. Method must look further. In particular the broader outlook upon method asks how the parent or teacher shall so manage the total situation confronting the living child as to call the most and best of all his inner resources and how then to guide the ensuing experience so that the aggregate learning results of knowledge, attitudes, habits, and skills shall be best (33:vii)
Method should be nothing more than the interaction of child, teacher, and studies. Method should concern itself with the question of the order of development of the child's powers and interests. Mayer gives a good indication of the basic elements of method. She says:

1. The pupil must have a problem. He must be in potentiality to knowledge. The teacher is to minister to the pupil and guide him to a knowledge of truth.

2. The pupil is in need of a teacher to help him organize his experience. The teacher must have perfected knowledge of his subject matter.

3. A description of method is a description of the reflective process.

4. The pupil is capable of self-determination. The teacher should respect the pupil's freedom, but he must also realize the disintegrating effects of error. The teacher's philosophy of life will determine his attitude toward what is truth (38:92).

All educational literature on method leaves one significant impression. The aim of method is to facilitate the acquisition of knowledge, and knowledge comes only through contact with factual information. It is obvious that method falls short of its goal if it does not succeed in imparting factual information as a constitutent of knowledge. Factual information for its own sake is not the sole purpose of method, but factual information for the realization of the purposes of education is of paramount importance. Factual information for a realization of the purposes of education should secure the following virtues as listed by Russell:

1. Curiosity
2. Open-mindedness
3. Belief that knowledge is possible though difficult
4. Patience
5. Industry

7. Factual Information and Child-Training

An analysis of method leads naturally to a study of child-training, since this is the goal of method. In child-training there is a definite place for factual information. By child-training is meant the expansion of the mind through education. The mind of a child does not grow; rather, it develops. Expansion of the mind does not necessarily mean that the individual knows more facts but it does mean that he is better able to handle the manifold facts of reality with better success. Commins has this to say about factual information in regard to child-training:

The learned man who may astound us with the number of facts he knows, does not necessarily have a complex mind. It is more likely that he has an organized and discriminating mind, and it is because he has developed these to handle the manifold facts of reality in fairly simple and direct schemes and relationships. The only growth that has taken place is merely an external apparent one. It is in the number of facts that he can now encompass. They have increased quantitatively, it is true, he knows and can do more things, but this is a matter of the relations of the mind to what is external. The fact of such external growth does not imply that there must also be a quantitative increase in performance...Knowledge is not an appropriation of facts, it is a reaction to them.... The growth of knowledge is a succession of mental acts becoming more discriminative and more integrative of the real world, not the acquisition of facts or content (11:27-28).

It is therefore apparent that the important consideration in regard to factual information is not how many facts are learned, but what influence this learning has upon the development of the powers of the in-
dividual. Factual information has a place if and when it succeeds in securing this development. The number of facts will be proportionate to the development possible for individual cases.

It is significant that the authorities we have quoted attribute to every goal of education a direct relationship with factual information. Factual information is necessary for self-realization, for growth in a feeling for human relationships, for economic sufficiency, and for civic responsibility. But is it possible to classify factual information according to its functions in a manner that may render it easier for the educator to decide why he is teaching any particular piece of information and how it should be taught? To this question we may now address ourselves.

II. Types of Factual Information

1. Utilitarian Factual Information

Ever since Herbert Spencer published his famous essay on "What Knowledge is Most Worth," the importance of utilitarian information has been recognized. Before Spencer's day there was probably an excess of emphasis on the importance of knowledge leading to culture. While it would perhaps be an exaggeration to say that the utilitarian is today over-emphasized, it is certainly not neglected nor disregarded. There is no dissenting voice to the proposition that all individuals need to know numerous facts that will be useful to them in a practical way.

True, even knowledge that is highly cultural is useful; but by rather common agreement the word "utilitarian" is applied to knowledge that meets some urgent and inescapable need, to knowledge that enables
the individual to cope with the immediate demands of his environment. It should be noted that knowledge may be predominantly utilitarian even though it is not needed at once. In the effort to make all learning functional we may, for example, create a situation in which children use at once the number facts they are learning, yet the controlling purpose in teaching at least some of the facts may be to prepare the child for the demands of adult life.

What, then, appear to be the types of utilitarian information that are recognized as necessary?

First, the individual needs to know certain facts which contribute to physical well-being. Long before a child enters school he learns the fundamental habits of personal cleanliness and hygiene. Many of these pieces of utilitarian factual information are repeated or re-emphasized in school, where tooth-brush drills, safety talks, and health instruction stress once more facts which most children have learned earlier in life.

At the higher educational levels more advanced facts are taught. It is felt that students should know the advantage of health for the correct functioning of the mind. They must have an elementary knowledge, at least, of the relationship between the organs of the body and physical well-being, and must realize that a healthy body is the dwelling place of a healthy mind. It is not contended that each and every individual should be a profound student of psychology and hygiene, but it is held that every person ought to know the rudimentary things about the body and its work, and the relationship between mind and body. Proper health education will result in a realization on the part of the student of the purpose of the
body and its organs, and the relationship between the body and physical success in life. It will include sufficient sex education to enable students to view sexual matters in a proper, moral, and intelligent manner.

Secondly, the individual needs certain factual information because it is necessary or useful for self-protection. Self-protection is in itself instinctive, yet in the proper functioning of the instinct of self-protection factual information plays an important part. Facts taught under this category are essentially extra-scholastic. Facts that lead individuals to a knowledge of what to do in case of emergencies, how to react to unusual situations in life, how to protect one's self in life, are all examples of facts falling under this subdivision. Most of these facts are learned by the child long before he enters school, but the knowledge that he possesses when he enters the schools can be furthered and augmented by intelligent teaching - teaching done with an eye to the realization of the purposes of education as enumerated in this thesis.

Thirdly, the individual needs certain factual information for the sake of his moral well-being. Looking at the matter from the standpoint of the grossest possible utilitarianism, we may say that a knowledge of certain moral and ethical facts is necessary if the individual is to escape spending the major portion of his life in jail. Any person who is completely devoid of all ethical concepts would be thoroughly amoral and asocial. He would lack any idea of property rights, and in this matter would probably follow his own impulses. If forcibly restrained, he would be unable to comprehend the justice of the action, would become embittered against society, and would repeat his offense at the first opportunity.
The frequency of his acts of violence and even of his murders would depend solely upon his temperament and the nature of his environment. If it is useful to the individual to be able to take care of his health, it is certainly equally useful to know how to act in such a way as to avoid the disastrous consequences of anti-social conduct.

Looking at the matter from the standpoint of man's obligations to his Creator, we may affirm that the individual needs to know all those truths of the natural law and of revealed religion that are necessary if he is to discharge his obligations and save his soul. How numerous these facts may be is a matter for ethicians and theologians to decide. Whatever they are, they are undoubtedly useful to the individual in the fullest sense of the term. These truths, precisely because they are religious, possess the merit of contributing to purposes that are more than merely utilitarian, but of that we are not speaking now.

Fourthly, the individual needs certain factual information that is necessary for existence in society. Strictly speaking, this subdivision includes the facts taught under the first three subdivisions. However, as here understood, it pertains to that academic knowledge which is necessary for survival in the world of today. As such it is worthy of treatment. An examination of the literature reveals a great volume of material pertinent to the question: What factual information is necessary for existence in society? A good starting place in surveying the literature is a discussion of mathematics.

In the mathematics curriculum of most schools it is recognized that all students must know the one hundred subtraction facts, the one hundred
multiplication facts, and the ninety division facts. It is true that there is much discussion as to how these should be learned. The Traditionalists and the Progressives offer diametrically opposed methods of getting this information. But even the most liberal progressive admits that this knowledge is essential for existence in society. But about other mathematical facts there is considerable controversy.

In an attempt to arrive at some definite conclusions concerning mathematical facts worthy of teaching, G.M. Wilson addressed a questionnaire to the business men of Connersville, Indiana. His purpose was to determine, if possible, the content of arithmetic that ought to be included in the schools of this community. The business men were sent a questionnaire and were asked to indicate the topics for which they had little use during a certain six months. The replies indicated that the following were not favored as subject matter for teaching:

- Troy weight
- Apothecaries' weight
- Longitude and time
- The surveyor's table
- The greatest common divisor
- The least common multiple
- Complex fractions
- Cube root
- Compound fractions
- Foreign exchange
- Compound proportions
- True discount
- Cases 2 and 3 of percentage
- Compound interest
- Partial payments
- Partnership

Of the above the greatest common divisor, the lowest common multiple, and complex fractions failed to get any support. Cube root, compound pro-
portion, cases in percentage, and the surveyors table were barely mentioned for study. The reason given for their elimination was that they have no practical value to most people and that the time used in learning should be spent upon the fundamentals mentioned on page 47. The suggestion was made by the business men that the following should be included as items of study, but in a broad way:

- Saving and loaning money
- Mortgages
- Modern banking methods
- Building and loan associations
- Keeping simple accounts
- Investing money
- Bonds as investments
- Real estate as investment
- Marks of a good investment
- Taxes, levies, and public expenditures
- Profits in business
- Life insurance (61).

It was suggested that these topics be handled as informational work and that the figuring center around the fundamental processes and percentage.

In another study of mathematics, Jessup tells us of a piece of research that he conducted in collaboration with Coffman (29:116-130). The results of this study, a canvass of opinions of superintendents, indicates that little attention should be given to certain subjects in arithmetic such as alligation, cube root, unreal fractions, progressions, and certain obsolete tables, but there is an overwhelming response in favor of increased emphasis on the four fundamentals.

Monroe (41:111-127) made a study of textbooks in arithmetic. In his study he assumed that the primary purpose of teaching arithmetic was
to equip the pupils with a knowledge of facts and of relationships existing between quantities from the viewpoint of their utility in life. His second concern was with the skills which are necessary to perform the operations necessary for activities of the home, personal activities, and activities of school. He concluded that there are not more than 372 type problems which could be judged as important enough to be included in textbooks. This analysis of Monroe makes the amount of factual utilitarian arithmetic much smaller than formerly was believed necessary, but the significant fact remains that the number of factual operations to be learned is still tremendously large.

Wilson (62:128-142) tried to determine the arithmetic actually used by adults in their social and business lives. He concluded that the four fundamental operations, fractions, accounts, percentage and its application, denominate numbers, cancellation, mensuration, decimals, counting, and square root are considered as necessary processes to be learned by the masses, the 95 per cent of the population. This study of Wilson leads to the conclusion that bright and gifted children may be taught the other processes, but they should be considered as informational rather than as fundamental and essential.

In a book written by Wrinkle in which he discusses the desirability of requiring all students to include algebra and geometry in their high school programs, there is found evidence to support the claim that much of what is taught is useless and has no practical application to life processes (63:170-187). Wrinkle states in regard to mathematics in the secondary schools:
The program should include such mathematics as may be needed by the individual in the solution of his problems or the satisfaction of his interests.... An analysis would reveal, however, that for the most part these situations [Life] involve simple computations, such as making change, adding up items on a bill, figuring tax, and other activities of similar simplicity (63:181).

Permitting mathematics to include only those things that have a functional value would eliminate much of what is now found in the conventional course of study, but it would bring in many problems that have a direct bearing on the processes of life.

We have surveyed some of the studies in mathematics which sought to determine what facts are of utilitarian value. We may now turn our attention to the field of spelling.

Hugh Clark Pryor (47:73-84) in attempting to suggest a minimum spelling list for the grades made a study of twelve leading authorities in the field of spelling. He concluded, after careful study, that the minimum number of words for each grade would be about as follows:

- Second, 343
- Third, 408
- Fourth, 216
- Fifth, 187
- Sixth, 156
- Seventh, 131
- Eighth, 38

This list gives a total of 1479 words which can be considered as minimum essentials. Each of these words if really a fact that must be learned by all. The ability to write, recognize, and read all of these words is quite a task for the student, yet if our education is to function correctly, it appears that this number of words cannot be reduced. These
facts, added to the other facts that are considered as essential in other fields, indicate the great mass of factual information that the students are expected to master. The amount, although a minimum compared to what might be taught, is really tremendous, even though the learning is spread over eight to twelve years of effort.

Language and grammar facts belong under the heading of factual information needed for existence in society. It is absolutely necessary that people have some permanent knowledge of grammar in order that they might live as ordinary citizens. But the extent of this knowledge is a matter of controversy. Speaking in a general way it seems that the language-usage program should include the following:

1. Development of reading abilities
2. Abilities in oral and written expression
3. Standards of literary appreciation

The language-usage program has validity if and when it enables a student to gain information through the coordination of isolated facts, if it enables him to understand a situation, and if it fosters pleasure and entertainment. To secure these results the language-usage program must equip a student with an effective vocabulary and the knowledge of the functions of words in a sentence. Unless a student has these tools in his possession he can hardly be expected to get meaning out of sentences. Wrinkle makes a statement pertinent to this discussion:

The fact that meaning is often obscured as a result of inadequate knowledge of correct forms and ignorance of grammatical structure must be recognized. It is important to remember in this connection, however, that there is no justification whatever for presenting to students... a body of definitions and classifications concerning
the language which is their native tongue. This language has been for the past eight or nine years of their lives their principal medium of communication (63:79).

It seems justifiable to eliminate certain material from the language program of the elementary school. Such items as the nominative of exclamation, the retained objective, the nominative absolute, the classification of verbs, as well as many others, can hardly be defended since only a few adults could give even a definition of these, far less state examples of their use.

In Johnson's study of high-school and college freshmen in Kansas City, Missouri, serious and widespread ignorance was found concerning the following:

- Capitalization
- Use of the apostrophe
- Use of adjectives and adverbs
- Spelling
- Pronouns not including case
- Omissions and repetitions
- Use of verbs
- Use of prepositions and conjunctions
- Sentence meaning
- Quotation marks
- Case of pronouns (30:558-559).

It would therefore seem that a good language-usage program on the upper level of teaching would include emphasis on those facts and ideas so as to eliminate, at least in part, the difficulties which students experience.

Another phase of the language-usage program is literature. An examination of a certain book (43) dealing with instruction in English literature leads to the conclusion that there is such a wide variation in the
reading material for English literature that there appears to be no minimum content that can be selected as being necessary to be studied and learned factually by all. However, it is safe to conclude that enough facts should be taught to fit the individual for life in the world. Individual needs will determine content. Hosie says:

There remains the question whether there are any fundamental principles in accordance with which selection may be made of the most useful poems, stories, and plays to be taught to children. It is the function of literature to serve as the artistic interpretation of life. It is, throughout, the expression of human interests, human emotions and human nature. By means of it children are to come to appreciate the ideal elements in life and nature and by means of it their aspirations are to be shaped, their feelings refined. It would seem, therefore, that the choice of literary material for school use should depend upon the power of appeal and enduring value of the content of the selection under consideration (27:90-116).

No discussion of utilitarian factual information would be complete without some mention of the fields of geography and history. Bagley has made quite a contribution to our thinking by analyzing some of the studies made in regard to social studies and by giving certain conclusions (1:131-146). He was aided by Miss Alice Biester, Miss Margaret Cobb, and Mr. E. T. McKinley. He found that in regard to references and allusions, 53.5 percent of the references were to "place and location geography," 25.1 percent to "political geography," 5.8 percent to "commercial geography," 1.7 percent to "historical geography," and 8.9 percent to local or transitory interests. He found that all the continents were referred to, with North America ranking first and Australia last; and that seven major Euro-
pean cities and five American cities received great stress in reference work. He discovered that twelve leading names received great stress in reference work, with Lincoln first and Buchanan last. He found, also, that about twenty dates were really necessary for memory work.

Branam and Reavis (4:27-40) made a study to determine the essentials of geography on the basis of such standards as area, population, imports, etc. All studies seem to indicate that the choice of subject matter to be learned should include the following:

1. That which is functional as far as society is concerned
2. That which is functional as far as the student is concerned
3. That which contains no element merely because of tradition
4. That which is varied enough to care for individual differences
5. That which offers direct and planned training in the higher mental processes necessary for a life in which decisions are not provided by an authoritarian (63:57).

The above discussion brings to a close the treatment of utilitarian factual information from the viewpoint of applicability for existence in a social world. There remain two more subdivisions of the broad field of utilitarian factual information. The first of these is service skills necessary for making a living.

The type of factual information that is included under the category of service skills necessary for making a living is slightly different from that of facts regarded as necessary for life processes. The latter is concerned with what is essential for all people because they are human beings, while service skills have to do with those facts that are applicable
to mankind in one phase of his activity - that of making a living. The first type considered referred universally to individuals as members of society, while the second refers to the work that those individuals will do in society. Service skills go one step beyond the limit required as necessary for life processes. They are in a way supplementary but nevertheless essential, as the work of earning one's daily bread is essential. They prepare an individual to render service to his fellow men. The return for this service is a livelihood. They apply to individuals and not to the group. It is the business of educators to prepare students for earning a living. To accomplish this end certain persons must be equipped with service skills which will enable them to fit into the pattern of life.

Service skills include manipulatory ability with figures for those who will step into the world of business. They impart to the student a facility that is necessary and expected in occupation. They give an elementary training in various fields of industry so that the student will not be a novice in the world of machinery. Service skills equip those individuals who will step into the professions with a certain knowledge necessary for those professions. The facts falling under this classification of utilitarian knowledge are difficult to define, inasmuch as their learning pertains to certain individuals and not the group. But they are definitely factual in nature and as such merit consideration in this thesis. In answer to the question: What service skills should be taught?, no single formula can be proposed. We can only say in general that those service skills should be taught which will prepare individuals to make a
living. The facts involved will be those that are above and beyond those necessary for mere existence in a community. The facts taught as service skills may or may not be permanent. They should be permanent if the factual knowledge will actually be required in earning a living. They should not be permanent if they prepare for one's life work, but are not necessary after entrance into it.

Since there is difficulty in determining just what line of endeavor students will follow after school, it seems justifiable to assume that curricula will include for all students certain facts which will give all some knowledge that will be useful in life occupations. Students who have definitely selected a life work will be taught, when possible, those service skills for which they have particular need.

It must be borne in mind that utilitarian service skills may be considered by some as preparatory in nature. The classification is arbitrary. They have been included under utilitarian factual information merely because they equip a person for a definite task, while, for the purposes of this thesis, preparatory factual information is meant to include facts which are the basis for other facts and for more advanced work.

The last classification of facts under the general heading of utilitarian is concerned with facts necessary for wholesome living in a community. They should be based on the commandment "love thy neighbor as thyself." Knowledge of these facts will help to curtail crime and tend to insure tranquility in domestic relations. It will give the individual a broader social outlook and will enable him to think of himself as a member of society. Out of the knowledge of such facts comes the success of com-
munity life that is the essence of American democracy. It is this knowledge which insures the flowering of democratic ideals and pursuits. It is the guarantee that the schools can give for the preservation of our present type of society in the United States. Facts taught to promote wholesome community living will be utilitarian inasmuch as they are usable in themselves and because they have immediate applicability to life. In the beginning these facts are probably learned as more or less isolated items, but through use their existence becomes habitual and they become a part of the personality of the individual. At that stage it is not necessary that they be retained as isolated bits of memory work. There are many people who know how to act toward their fellow men and yet find it rather difficult to state specifically what is factually included in that action.

This completes our discussion of utilitarian factual information. To recapitulate briefly, facts included under this category are immediately applicable to life. It is their utility that justifies them. In themselves they may not be important. It is what a knowledge of these facts does for a person that gives them significance. It will now be the object of this thesis to consider other types of factual information. The immediate concern will be for that category of information which arbitrarily has been designated as preparatory. This is the second large classification of factual information.

2. Preparatory Factual Information

Preparatory factual information is useful because it paves the way for further acquisition of factual knowledge in the future. It may be jus-
tified on the ground that it is needed for more advanced work in school subjects, for admission to industry, or for entrance to high school, college, and professional work. An examination of each of these subdivisions will throw some light on their nature and meaning.

The first subdivision of preparatory factual information includes facts necessary for more advanced work in school subjects. Information may be offered to students because the learning of that information will facilitate the learning of facts in more advanced subjects. To give a concrete example, it is necessary for a student who plans to be an engineer to know higher mathematics. To master calculus, he must know algebra, geometry, and trigonometry. The teaching of these preparatory factual subjects would be justified in the light of what a student intends to do with himself in life. This preparatory learning has two advantages. First, it prepares a student for more intricate work by imparting to him a knowledge of the fundamental processes, the acquisition of which is necessary for more advanced work. Secondly, it builds up a certain mental attitude toward study which will be helpful to him in the pursuit of more advanced subjects. To master the rudiments of mathematics would be justifiable to a student who knows he will go on with higher mathematics. For him the requirement of solving difficult problems, theoretical in nature, but definitely helpful in the learning of fundamental operations, is not an injustice but a necessity. It is obvious that this type of factual information falls into a different category from that which a student learns to prepare himself for social living. It is more or less an addition to the factual information required for simple life processes. As to the perma-
nency with which facts necessary for preparatory purposes should be learned there has been some discussion. It seems unnecessary that a student should retain all the facts learned in preparatory work. But he must retain those that will be absolutely necessary for the solution of difficulties in higher academic fields. Could the number of preparatory facts be decreased? Without a doubt this should be possible, but the difficulty is in determining what facts are really necessary for advanced work. Hence it seems slightly safer to teach many facts on the assumption that constant extended exposure will affect and benefit the student more than a brief and scanty one. Therefore, for preparatory work many so-called superfluous facts can be justified in the curriculum.

The second subdivision of preparatory factual information refers to those facts that are necessary for entrance into certain industrial fields. The requirement for admission to these fields is a certain "pre-knowledge." This pre-knowledge might be considered as utilitarian in nature, since it fits a person to do a job for the sake of making a living. However, the facts which an individual learns in school that qualify him for admission to industry may properly be considered preparatory in nature. For the student who is going to enter into shop work it seems logical to expose him to facts pertaining to shop technique, even though these facts are not absolutely necessary for living. If industry requires a certain preparatory basis of information, it is the duty of the schools to anticipate the demands of industry and to prepare students so that they will possess the knowledge for employment in industry. Possessing the preparatory knowledge that the schools can offer a person is doubly served, inasmuch as he may
obtain a position because he has that knowledge, and may advance in
knowledge in his occupation because of the foundation that he possesses.
Even though many of the preparatory facts that a student learns may be
absolutely useless in certain industries, yet the possession of this pre-
paratory knowledge has at least given him a basis upon which to erect the
edifice of new and allied factual information useful in the occupation he
is to enter.

The third, fourth, and fifth subdivisions of preparatory factual
information are concerned with facts necessary for admission to higher
branches of learning. In the early history of our schools in America
attention was focused on the fact that elementary schools were places of
preparation for high-school work, and that high-school was preparatory for
college. Consequently, the curriculum contained, and unfortunately still
contains, much material which is justified only inasmuch as it prepares
the individual for the next scholastic step in the field of educational
advancement. The approach seems to be entirely wrong, since many students
taking work will never pass on to the next higher division of learning.
Such a conclusion is erroneous and leads to the confusion that exists to-
day.

If one examines the typical grade-school program it will be found
that much of the material taught and the facts presented have no other
justification than that they are deemed necessary for success in high-
school. The high-school, on the other hand, often assumes that much of
the material taught under its roof justifies itself because it prepares
the student for college entrance. The whole attitude on the subject seems
to be wrong. In the first place, although practically all city pupils go to high-school for at least a time, it cannot be assumed that this is universally true. Hence to pitch the work of the grade-school to the purpose of preparing for high-school is a policy that cannot be defended in the case of all students. That a relatively small number of students go from the high-school to college is significant enough to lead to the conclusion that a high-school that builds its curriculum on the college-preparatory idea is adopting a procedure indefensible in the light of existing conditions. What then, to speak constructively, would be the intelligent stand to take in regard to this point? It seems logical that the first purpose of the schools, as social institutions, is to prepare students for social life. The facts taught for this purpose are in a great part, although not entirely, utilitarian in nature. The second aim should be to offer opportunities to individuals to go above and beyond the minimum essential idea and to prepare for higher and more advanced work. The question as to how to decide whether a person is or is not going on to higher work is indeed difficult to answer. However, the fact still remains that the schools ought first to prepare students for fundamental life processes and secondarily for other purposes.

The above discussion was an attempt to indicate the idea that is somewhat generally prevalent regarding the purposes of schools. Since a certain objective requirement often is established arbitrarily for admission to advanced institutions of learning, the schools must arise to the occasion and give to the students the facts that are necessary for this admission. A word is apropos regarding facts which may justify them-
selves if they are taught because their possession is absolutely essential for entrance into high-school or college. The types of facts taught under these categories are included in the third and fourth subdivisions of preparatory factual information.

Under existing scholastic conditions it is necessary to present certain requisites before a student is admitted to high school or college. The existence of this requirement justifies the acquisition of facts to satisfy this requirement. However, unless the facts can be justified from some other viewpoint, it seems that the permanency of the facts learned to satisfy entrance requirements should receive little stress. Since most high-schools and colleges require only a transfer or transcript showing that certain courses have been taken and objectively mastered (indicated by a passing grade), and do not demand an actual examination in the facts contained in these courses, it seems foolish to consider too much the thoroughness of mastery of such facts on the part of students. This stand assumes, of course, that the facts in question have no other use than that of preparing the student for admission to institutions of higher academic work. It is assumed that a lack of knowledge of the facts in question would not seriously interfere with advanced work in high-school or college. Hence, facts taught and learned for no other purpose than "to get into high-school or college" have little justification apart from this end.

In much the same category as the above are facts taught because their possession is necessary for admission to professional work. This is the last subdivision of preparatory factual information. Law, dentistry,
medicine and teaching require pre-courses before a student is admitted to the professional schools. Since students must be ready to satisfy these requirements the teaching of facts for this purpose is justified on the assumption that certain preparatory work is necessary - not for success in future fields but merely for admission to those fields.

The above treatment brings to a close the discussion of preparatory factual information. Some attempt was made to divide this large category into subdivisions so that a clearer idea might be had of the content of this type of factual information. The thesis will now discuss the third classification of factual information - facts of a disciplinary nature.

3. Disciplinary Factual Information

Disciplinary factual information may be divided into three subdivisions. These are facts for formal discipline, facts for punishment, and facts for the development of character. Facts for formal discipline are the first consideration.

The learning of facts with the idea of securing discipline through the learning has been the subject of much controversy. Early in the history of education certain individuals found a psychological justification of education in the doctrine called "formal discipline." This theory holds that the form of the training and the kind of mental activity are of the utmost importance. It does not concern itself with the knowledge or content of the training. The theory advocates a general "strengthening" of the mind as more important than the acquisition of information. Although the theory of formal discipline has been practically discarded, there still
persists the idea that certain "hard" subjects are mind trainers and as such they justify their existence in the curriculum. Commins states:

It was commonly supposed that the disciplinary subjects such as mathematics, algebra, Greek, and Latin, gave "fibre, facility, strength, and adaptability" to the human mind. The study of German contributed, it was said, to the up-building and strengthening of the scientific intellect (11:418).

If this theory is analyzed it will be found that its acceptance postulates the truth of the faculty psychology of Wolfe and Reid (11:418). However, there is something to be said in favor of the fact of having to learn certain facts to reproduce them in tests and examination. Such learning at least requires a subjugation of the inherent laziness of many human beings which prompts them to do the least possible to obtain their ends. If a class is asked if it enjoys memorization, it will respond in the negative. However, if some memorization is required it will undoubtedly help the moral fibre of the individual although it may not do his mind any good. If it helps the will the learning of factual information for the sake of learning may possibly have some justification. Rigorous training does prepare the individual for the strife before him by making him aware that strife exists. However, it is not believed by modern educators that all education should be rigorous, but that it should follow the channels of interest inasmuch as possible.

The difficulty with forced learning - that which comes under the heading of learning for formal discipline - is that very little of what is learned is retained. The element of interest is lacking and the only motivation is "learn this because it is good for you." With such motiva-
tion it is not to be expected that the student will derive any lasting benefit from his learning. This stand does not advocate "sugar-coating" education but does hold that wherever possible, motives for learning should be instilled in the student and that interest should be the motivating force in pupil activity.

The second subdivision of disciplinary factual information includes facts taught for punishment. Facts are often given to the student to quell a rebellious spirit or to attempt to train an individual to follow directions. The learning of these facts may be considered as a punishment. Often the child is required to learn certain sections of a poem or to multiply numbers as a penance. The practice is almost medieval in nature and has no justification under modern principles of pedagogy. Facts learned under this arrangement of force should not have permanency above the time required to give them back to the teacher in fulfillment of the penance aspect.

The last division of disciplinary factual information includes facts that develop character. This development is not quite the same as training the intellect through formal discipline. Persons professing a belief in the validity of developing character through the learning of factual information will advance the idea that it is good for a student to do things that he dislikes because he will have to do many disagreeable things in life. Upon superficial inspection there seems to be some truth in this theory. However, when it is realized that life is really a struggle, the question arises as to why a student should be made to struggle before it is necessary to do so. Would it not be better to instill in the student the
knowledge that life is difficult and that he will have to do many things that he does not like, than actually to force him to the position that he tastes prematurely life in all its disagreeable aspects? Why hasten the pangs that will be his? Why not educate him to the knowledge that there will be molestations and troubles and not permit him to suffer them in actuality in his school days? It does not lessen the pain of a pin prick to have experienced the incident in the past.

4. Cultural Factual Information

This discussion closes the treatment of factual information from the disciplinary point of view. It now remains to discuss the fourth classification of factual information. This has to do with the cultural aspect of facts. It must be borne in mind that in the discussion of this branch of factual learning facts have a place primarily because of their cultural worth. But there is some difficulty in determining what is meant by culture, and this determination must be made before the classifications of cultural factual knowledge are considered.

To many persons culture conjures up visions of trivial artistic interests, of literary pursuits, of possession of a definite superiority complex. But this is not the social meaning of culture. Mursell gives a good explanation of what is meant by culture in the modern sense:

Every great culture has been, and must be, the expression and interpretation of a way of social living. Each age has produced great men, who have caught the current atmosphere of opinion and belief, and expressed it in literature, or art, or music, or in the creative reform of institutions. Such men are like reflectors, catching and diffusing rays of the sun and bringing them to a dazzling focus. They grow like trees, deeply rooted in a
common life, uniquely embodying and expressing the culture of the age in which they live. In it, the meaning of life, as understood in that age, comes to clear expression. They are interpretations of the hearts and minds of their contemporaries; and they live for succeeding generations, because their message speaks of that which must always be the chief concern of men - the human drama itself. As Goethe has said: "The man who has been of his time, has really been of all time (42:301-302)."

Mursell continues in his discussion and points out that there still exists in the mind of most people a distinction between the practical on one side and the liberal or cultural on the other.

Russell expresses the belief that culture should be "an enlightened attitude toward the practical problems of life(52:312)." This understanding of culture makes the first one given inconsistent. Mursell claims that the only justification of subject matter is to furnish an intellectual resource for the improvement of human adjustment. He comes to the conclusion that there is no true distinction between the practical and the cultural. A study of certain subjects as taught in the schools will show that "if a subject is treated as cultural, but not practical, or as practical but not cultural, it tends to become sterile, and to be divested of its true genius and meaning."

In the study of Latin, an example of a so-called "cultural subject" it appears that it should be studied as an agency of human communications, since the language was at one time precisely that. But High School Curriculum Organization (60) indicates that this is not the case. Latin appears in most cases to be taught deliberately as an impracticable subject not to be learned for use. "What should be done is to teach Latin for its
intrinsic worth as an agency for communication and take the consequences, which would probably be that comparatively few would study it, but that these few would gain an educational benefit from it (42:313)." A sensible analysis of other subjects will lead to the conclusion that all education is general and all education is practical. There should exist a reciprocity between theory and experience.

In the light of the above discussion it appears that factual information from the cultural viewpoint is an important consideration. With the idea in mind that the cultural is not to be divorced from the practical it will follow that much so-called practical information can have a cultural value. The schools will teach, then, those facts that help to secure culture regardless of the content of the fields taught. Culture is to be understood as more intelligent living in a social environment.

Cultural factual information cannot be divorced from the other types of factual information inasmuch as they cannot be entirely divorced from the cultural. There is a definite overlapping. However, it seems that cultural factual material should be material that is not absolutely necessary for living but which enhances and augments the beauty of living. Cultural factual information should broaden the horizon of life and enable man to see "the forest in spite of the trees." It should develop in the individual a certain higher appreciation of values and should enable him to view objectivity from a more analytical and critical viewpoint. It should not foster discontent but greater satisfaction. Facts which will accomplish the above are justified in the curriculum. However, since the world is a mixture of complex individualities, many of whom will react
differently to situations of learning, it appears that a listing of facts to be taught for cultural purposes will be difficult. It seems that the only safe course is to teach those facts which are practical and which will develop the social life of an individual. The permanency of such facts will be proportionate to their necessity for social life, not from the viewpoint of mere ability to exist, but from the viewpoint of ability to exist better.

It is well to examine the types of factual information that come under the general classification of cultural. The first of these is facts for a better appreciation of the esthetic. It is common knowledge that one of the hoi-polloi finds little beauty in a beautiful picture, little symmetry in a symmetrical piece of statuary, little pleasure in pleasurable situations above the ordinary run of experience. It is the lack of facts that fosters this indifference to esthetic situations. Appreciation of these situations is not necessary for existence but makes existence a more agreeable thing. It opens up the potentialities of a being and actualizes his potentialities in regard to the esthetic. Facts for the accomplishment of such a purpose are necessarily praiseworthy. The teaching of facts for an appreciation of the beautiful is justifiable in any curriculum since man needs something above the mere routine of living to keep him satisfied and to divert his interests. In such academic subjects as language, social studies and literature, there is abundant opportunity to foster esthetic appreciation. Facts taught for this purpose need no permanency except that they accomplish this end. Cultured persons with an appreciation of the esthetic cannot in most cases state what
facts enabled them to secure this appreciation. This appreciation comes through a general broadening of intellectual concepts and through more and varied contacts with the outside world with all its beauty.

The second classification of cultural factual information includes facts necessary for a better understanding of human relationships. This type of cultural information broadens the fundamental concepts of love, sympathy, and understanding, that are requisites for intelligent existence. It gives these qualities a new meaning and expands their application to life. It enables man to live not only in a decent and good manner, but in a more human manner. It enables individuals to realize the good and bad in their fellow men, and having taken cognizance of this condition to adapt themselves to better relationships with the individuals concerned because of, or in spite of, such attributes or their absence. Cultural factual information makes man an understanding being - not merely an existing one.

The third classification of factual information includes facts for leisure enjoyment. It is a known truth that with our present economic trends much of the time that we live is necessarily leisure time. There is the necessity of doing something with that time. Certain facts known to the individual make it possible for him to enjoy his leisure to a greater extent. Knowledge of reading opens new fields of escape from the monotony of everyday life. Understanding and familiarity with literature make reading more enjoyable. Knowledge of social studies, of language, of social customs, and philosophy, open up new possibilities for leisure enjoyment. Facts which will enable people to use their leisure time con-
structively are surely worthy of teaching. They are not essential to life and living but they make life fuller and more enjoyable. It is a mistake to assume that all people know instinctively how to enjoy leisure. The ability to be able to while away time constructively is an art that is acquired after certain training is given. If the proper use of leisure could be learned without education there would be no such thing as the "corner gang" or the "neighborhood hoodlums." Education can and must take cognizance of the fact that the American people are a people who have leisure time and who must know how to use it. The schools have the obligation of teaching students how to use leisure time profitably.

The acquisition of factual information learned under any of the headings already discussed may foster leisure activity. This is satisfactory and shows that education is a vital thing. However, it appears that some definite attempt at teaching material to be used to fill out the leisure hour of the present student and the future citizen should receive consideration. Facts taught to help individuals to enjoy themselves constructively may be above and beyond the facts taught for other purposes. It is better if leisure activities arise naturally through the study of facts taught and learned under one of the other subdivisions of factual information. Nevertheless, it seems logical to assume that since there is a certain artificiality in the imposition of leisure time on the American people that there can be a certain artificiality in the presentation of facts for use during this leisure time. Regardless of the approach we should and must teach to enable students to appreciate leisure time and to do something constructively with it.
The above discussion brings to a close the treatment of cultural factual information. We may now summarize what has been said of factual information by classifying it under the following four heads.

I. Utilitarian factual information
   1. Facts which contribute to physical well-being
   2. Facts which are necessary or useful for self-protection
   3. Facts which contribute to moral well-being
   4. Facts necessary for existence in society
   5. Service skills necessary for making a living
   6. Facts which facilitate wholesome living in a community.

II. Preparatory factual information
   1. Facts necessary for more advanced work in school
   2. Facts necessary for admission to industry
   3. Facts necessary for admission to high-school
   4. Facts necessary for admission to college
   5. Facts necessary for admission to professional work

III. Disciplinary factual information
   1. Facts for formal discipline
   2. Facts for punishment
   3. Facts for the development of character

IV. Cultural factual information
   1. Facts for a better appreciation of the esthetic
   2. Facts for a better understanding of human relationships
   3. Facts for leisure enjoyment

The literature that has been surveyed and the analysis of the functions and types of factual information that has been attempted would appear also to justify certain conclusions. That these conclusions are to a certain extent subjective must be frankly admitted. They are proposed at this point as hypotheses. In Chapter IV we will present the results of a questionnaire study in which the hypotheses were presented to a number of experts for the purpose of obtaining their reactions. The conclusions or hypotheses are as follows:
The following conclusions pertain to utilitarian factual information:

1. Certain facts are absolutely necessary or useful for physical well being.
2. Certain facts are necessary or highly useful for self protection.
3. Certain facts are absolutely necessary or useful for moral well being.
4. Certain facts must be taught because they are necessary or useful for existence in society.
5. A certain number of facts are absolutely necessary or useful for making a living.
6. Certain facts will without doubt facilitate wholesome living in a community.

The following conclusions pertain to preparatory factual information:

1. Certain facts may be taught because they are necessary or helpful in more advanced work in school subjects.
2. Certain facts should be taught because they prepare an individual for a trade or an occupation which he intends to enter.
3. Certain facts may be taught because their possession is necessary for admission to higher academic fields.

The following conclusions pertain to disciplinary factual information:

1. Some facts may legitimately be taught because they improve the mind through reflective thinking.
2. Facts should not be taught for punishment.
3. Facts may be taught because they develop character.
The following conclusions pertain to cultural factual information:

1. Certain facts should be taught to enable a person to appreciate more fully the esthetic.

2. Certain facts, if taught, will probably lead to a better understanding of human relationships.

3. Certain facts must be taught to enable people to use their leisure time constructively.

In regard to the entire field of education the following propositions are offered as valid.

1. Some facts, although not all, should be taught in such a way that they will be remembered forever.

2. Some facts need to be remembered only so long as they are actually needed.

3. Some facts need not be remembered at all but merely understood at the time of presentation.

4. The amount of facts now taught, at least in some subjects, is excessive.

5. Textbook writers should be certain of the purpose for which all facts are included in textbooks.

6. Teachers should know for what purpose every fact is taught.

7. Teachers should take effective steps to get facts learned with that permanency which is proportionate to the purpose of learning the facts.

8. Certain facts merit review and re-examination after they are no longer immediately useful.

9. Experts should determine what facts are necessary and useful and these experts should determine for what purpose various facts are learned.

10. In some subjects the problem of selecting necessary or useful facts has not been solved.

11. Any fact, regardless of its nature probably will fit into some one of the categories of factual information as arbitrarily classified in this thesis.
CHAPTER IV

THE VERIFICATION OF THE CONCLUSIONS
THROUGH EXPERT OPINION

In the preceding chapter we reached certain conclusions concerning the relationship between factual information and the purposes of education. Although these conclusions were based upon a logical analysis, the validity of which can be appraised by the reader, it was thought desirable to seek whatever verification that was possible by submitting the conclusions to a number of experts.

A second reason for appealing to a selected number of experts was as follows. In the thesis itself an attempt was made to list those purposes for which factual information is sometimes actually taught. In listing these purposes and in summarizing the opinions of authorities concerning them, much was necessarily said regarding the desirability of getting factual information learned for the achievement of certain purposes. But it was not the intention of the author to weigh the authorities on one side and on the other and determine whether or not the purposes were valid.

An attempt was made to select as recipients of a questionnaire on the place of factual information in education persons holding positions definitely educational in nature and residing in communities widely separated geographically. Seventy experts were finally accepted as recipients of the questionnaire (see Appendix, pages 104-0%). These scholars were
asked if they would answer a set of questions on the place of factual information in education. Sixty-four answered in the affirmative and were sent the questionnaire. Fifty-eight experts completed the questionnaire and forwarded their answers.

This chapter presents the results of the questionnaire, which, as the reader will observe, contains the conclusions reached in Chapter III. Respondents were asked to check each proposition as absolutely certain, very probably true, possibly true, very probably untrue, and absolutely untrue. Scores of two, one, zero, minus one, and minus two were assigned to these five characterizations respectively. The final score for each proposition is the percentage the total number of points is of the total that would have been obtained had each respondent who indicated his answer marked the proposition absolutely true or absolutely untrue.

**UTILITARIAN FACTUAL INFORMATION**

1. Certain facts are necessary or useful for physical well being (e.g., that bathing is necessary, that vitamins contribute to health.)

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<thead>
<tr>
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<tbody>
<tr>
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<tr>
<td>Absolutely Untrue</td>
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<td>Answer not indicated</td>
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**TOTAL POINT SCORE** | 105 |
**FINAL SCORE** | 92.1% |
2. Certain facts are necessary or useful for self protection (e.g., how to start or put out a fire, how to tell east from west, how to act during a hold-up.)

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<tr>
<th>RESPONSES</th>
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<tr>
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TOTAL POINT SCORE 109
FINAL SCORE 88.8%

3. Certain facts are necessary or useful for moral well-being (e.g., that honesty is a virtue, that murder is wrong.)

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<th>RESPONSES</th>
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<tr>
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TOTAL POINT SCORE 103
FINAL SCORE 88.8%

4. Certain facts must be taught because they are necessary or useful for existence in society (e.g., how to communicate with others, how to make change, how to protect one's rights, how to make friends.)

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<th>RESPONSES</th>
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<tbody>
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TOTAL POINT SCORE 103
FINAL SCORE 88.8%
5. Some facts (which will vary with the individual) are necessary or useful because they render possible the making of a living (e.g., how to invest money, how to teach school, how to repair an automobile).

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<tr>
<th>RESPONSES</th>
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<tbody>
<tr>
<td>Absolutely Certain</td>
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TOTAL POINT SCORE 101
FINAL SCORE 87.1%

6. Some facts are necessary or useful because they facilitate wholesome living in a community (e.g., how to improve the community, how to select community officials).

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<thead>
<tr>
<th>RESPONSES</th>
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<tbody>
<tr>
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TOTAL POINT SCORE 90
FINAL SCORE 77.6%

PREPARATORY FACTUAL INFORMATION

1. Certain facts may be taught because their possession is necessary or helpful in more advanced work in school subjects which it is certain that the learner will study (e.g., arithmetic to understand algebra, general science to understand chemistry, geography to understand history and economics).
2. Certain facts must be taught to prepare an individual for a trade or occupation which he intends to enter (auto mechanics, stenography, cooking, typesetting).

RESPONSES                POINTS
Absolutely Certain       35           70
Very Probably True       12           12
Possibly True            11           0
Very Probably Untrue     0            0
Absolutely Untrue        0            0
TOTAL POINT SCORE        82
FINAL SCORE              70.7%

3. Some facts must be taught because they are necessary for admission to the high-school, college, or professional school which the learner desires to enter (e.g., elementary arithmetic, English, and social studies; the facts contained in the two years of language required for students intending to take an A.B. degree in college; the facts contained in six or more courses of education for admission to graduate work; the facts contained in the three years of pre-legal training).

RESPONSES                POINTS
Absolutely Certain       33           66
Very Probably True       18           18
Possibly True            6            0
DISCIPLINARY FACTUAL INFORMATION

1. Some facts with no intrinsic or utilitarian value may legitimately be taught because they render possible the improvement of the mind through reflective thinking (e.g., facts connected with formal grammar or algebra taught for no other purpose than to prepare the way for analytic thinking).

2. Facts may be taught because they punish a child for his misconduct (e.g., the learning of a page in a book).
3. Certain facts may be taught because they develop character (e.g., difficult problems in arithmetic and algebra that impress upon the child that life is really a struggle).

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<th>RESPONSES</th>
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<tr>
<td>Absolutely Certain</td>
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TOTAL POINT SCORE: 44
FINAL SCORE: 37.9%

CULTURAL FACTUAL INFORMATION

1. Some facts must be taught to enable an individual to appreciate more fully the esthetic (e.g., how to react to beautiful paintings, statues, and music, how to enjoy the grandeur of nature).

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<th>RESPONSES</th>
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<tbody>
<tr>
<td>Absolutely Certain</td>
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<tr>
<td>Absolutely Untrue</td>
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TOTAL POINT SCORE: 44
FINAL SCORE: 37.9%

2. Some facts may be taught so that individuals will have a better understanding of human relationships (e.g., how to improve humanity socially, religiously, and economically, how to practice the precept "love thy neighbor as thyself").
3. Some facts must be taught so that individuals will constructively use their leisure time (e.g., the development of hobbies, of educational clubs, of lecture groups).

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<th>RESPONSES</th>
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<td>Absolutely Certain</td>
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GENERAL PRINCIPLES

1. There are some facts that should be taught so as to be remembered forever.

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<td>TOTAL POINT SCORE</td>
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2. There are some facts that need to be remembered only for some time.

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<th>RESPONSES</th>
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<tr>
<td>Absolutely Certain</td>
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<td>Very Probably Untrue</td>
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<td>Absolutely Untrue</td>
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TOTAL POINT SCORE 86
FINAL SCORE 74.1%

3. There are some facts that need not be remembered at all, but only apprehended and understood for a moment or until the desired effect has been achieved (e.g., facts presented by the teacher for the purpose of inducing a child to attempt to read).

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<tr>
<td>Absolutely Certain</td>
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TOTAL POINT SCORE 71
FINAL SCORE 61.2%

4. The amount of facts now being taught, in some subjects at least, is excessive.

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<th>RESPONSES</th>
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<td>Absolutely Certain</td>
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<td>Answer Not Indicated</td>
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TOTAL POINT SCORE 91
FINAL SCORE 79.8%
5. Textbook writers should be certain of the purpose for which any fact is included in the textbook.

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<tbody>
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TOTAL POINT SCORE: 81
TOTAL SCORE: 69.7%

6. Teachers should know for what purpose any fact is taught.

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<th>RESPONSES</th>
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<tbody>
<tr>
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TOTAL POINT SCORE: 81
TOTAL SCORE: 79.3%

7. Teachers should take effective steps to get facts learned with that degree of permanency which is necessary because of the purpose for which facts are taught.

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<th>RESPONSES</th>
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<tbody>
<tr>
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TOTAL POINT SCORE: 96
TOTAL SCORE: 82.8%
8. Certain facts, at least, should be material for review and re-examination even after the pupil has passed a final examination and received 'credit'.

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<tr>
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9. The task of determining which facts are necessary and useful and for what purpose they are to be learned should be intrusted to experts equipped to use the best techniques now available.

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<th>RESPONSES</th>
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<tbody>
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<td>TOTAL SCORE</td>
<td></td>
</tr>
</tbody>
</table>

10. In some subjects at least, the problem of selecting necessary or useful facts and of determining why they are taught has not been solved.
11. The division of factual information into utilitarian, preparatory, disciplinary, and cultural is inclusive (complete).

<table>
<thead>
<tr>
<th>RESPONSES</th>
<th>POINTS</th>
</tr>
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<tbody>
<tr>
<td>Absolutely Certain</td>
<td>49</td>
</tr>
<tr>
<td>Very Probably True</td>
<td>7</td>
</tr>
<tr>
<td>Possibly True</td>
<td>2</td>
</tr>
<tr>
<td>Very Probably Untrue</td>
<td>0</td>
</tr>
<tr>
<td>Absolutely Untrue</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL POINT SCORE</strong></td>
<td><strong>105</strong></td>
</tr>
<tr>
<td><strong>TOTAL SCORE</strong></td>
<td>90.5%</td>
</tr>
</tbody>
</table>

12. If the above division is not inclusive indicate here what has been omitted. (This statement invited the respondents to indicate any omission in the functions of factual information of which the writer might have been guilty. Only fifteen of the respondents offered any comment, and of these comments only ten had any concrete suggestions to make as to how the classification could be completed. However, the very low percentage (13.4) of absolute certainty obtained for Item 11, in which respondents were asked to indicate their attitude toward the classification, is evidence of an unwillingness to accept the classification as final. The general attitude of the respondents is prob-
ably reflected in the statements of two or three respondents to the effect that further research of the same kind as that here undertaken would quite possibly lead to some more complete formulation. Their inability to suggest items in such a fuller formulation would appear to indicate that their doubts were negative rather than positive. They would think of nothing additional, but were unwilling to affirm that no addition could ever possibly be made. Those additional that were suggested do not, in the opinion of the author of this thesis, add anything not actually contained in the classification. It must be remembered that the respondents had only the questionnaire, not the entire thesis, in which the various functions are explained in detail).

The additional suggestions, together with the author's comments, are as follows:

1. One respondent suggested that "ethical" and "inspirational" be included in the author's division of factual information. These two, ethical and inspirational, were mentioned in the treatment of utilitarian factual information, subdivision 3 (page 43); and in the discussion of cultural factual information, subdivision 4 (page 66).

2. A second respondent thought that the division of all information into the four categories used in the thesis was a matter of convenience. He stated further that the definition ascribed to each category would determine whether or not the division was all-inclusive. Since the respondent did not know that the thesis attempted to explain the significance of each category his comment was to the point.
3. A third respondent stated that certain aspects of disciplinary factual information such as facts about how to study and definitions were not represented. These aspects were indirectly included under disciplinary factual information, subdivision 1 (pages 63-65).

4. A fourth respondent suggested that culture be subdivided into culture for self-enjoyment and culture for membership in society. This division was made in the thesis in the discussion of facts for leisure enjoyment and facts for a better understanding of human relationships (pages 70-71).

5. A fifth respondent felt that the needs of pupils were neglected as a criterion. In the thesis the needs of the pupil were discussed under facts necessary for physical well-being, for self-protection, for moral well-being, for existence in society, for making a living, and for wholesome living in a community (pages 44-57).

6. A sixth respondent suggested that the learner may have other objectives than those given, as, for example, sheer enjoyment in intellectual activity. This type of activity was inferred in the discussion of cultural factual information under the heading of facts for leisure enjoyment (page 70).

7. A seventh respondent suggested the pleasurable as a category. Facts taught for leisure enjoyment would include facts for the pleasurable.

8. An eight respondent suggested that "useless" might be added. As a division of factual information as it is in existence today this addition is justified, but the division of factual information for a realization of the four purposes of education as enumerated in this thesis
would not, in the author's opinion, justify including this category.

9. A ninth respondent suggested that "interpretation" or "background" be mentioned. It appears to the author that "background" should be one of the general results of education and that it hardly can be considered as a category of factual information.

10. A tenth respondent mentioned "religious" as a category. Religious facts are included under facts for moral well-being, subdivision 3 of utilitarian factual information (pages 45-46).

INTERPRETATION OF DATA OF THE QUESTIONNAIRE

It is the purpose of this section of Chapter IV to interpret the data of the questionnaire to attempt to determine why certain individuals do not agree with the general opinion as discovered from the composite tabulation. It must be emphasized that this interpretation is subjective in nature but that the criteria that will be presented in the concluding pages of this chapter are objective in nature and are based entirely upon the results of the questionnaire.

None of the experts went so far as to deny the place of utilitarian factual information. Practically all of the scholars concluded that the propositions dealing with utilitarian factual information could be marked as absolutely certain or very probably true. Only thirteen of the experts place these propositions in the realm of mere possibility. It is the opinion of the author that certain propositions were catalogued as possibles by these experts because of the fundamental difficulty of determining an exact definition for the term "fact." No attempt was made to define
the term in the questionnaire inasmuch as the definition would in all probability have been attacked by the experts with the result that the questionnaire would be based on the author's definition of the term "fact." It is believed that there exists a rather general opinion as to what facts are and that the omission of any precise definition would lead the respondents to answer the propositions in the light of the commonly accepted meaning of the term. It is believed that the thirteen dissenters probably have slightly different ideas than the others as to the general meaning of the term "fact." It appears that some of them tried to distinguish between facts, habits, and generalities - with the subsequent difference in response.

Twenty-six persons marked certain propositions under preparatory factual information as possibly true, very probably untrue, and absolutely untrue. Five of these responses were in regard to the proposition that certain facts must be taught to prepare an individual for a trade or an occupation which he intends to enter. It may be that these negative responses were due to the fact that the individuals believe that a general broad training will equip the student with the ability to adapt himself to the situation when the time occurs, or that they believe that it is absolutely impossible to determine with certainty what trade or profession an individual is going to pursue. One respondent thought very probably untrue the proposition stating that some facts must be taught because they are necessary for admission to higher institutions of learning. This conclusion probably means that the respondent was considering the schools as they should be and not as they are. The author agrees with this lone
dissenter if he is thinking of the schools idealistically and not as actually operating. It is significant to note that some of the respondents to this proposition made notes in the margin inferring that this arbitrary regulation should be remedied. It will be noted that this is substantially the opinion of the author as expressed in chapter three (pages 23-74).

The range of the answers to the propositions under disciplinary factual information was from very probably untrue to absolutely untrue. Returns were fairly well distributed regarding facts for the development of reflective thinking. This is an indication that more specific agreement should be had as to the nature of mind and of its functions and operations. Facts for discipline received a strong negative vote - happy evidence that the old rigorous ideas of pedagogy are rapidly on the decline. Difficulty was apparently encountered with the proposition dealing with character development. It is believed that the fundamental difficulty here, as with mental development, lies in the fact that the term has various implications to different people.

Cultural factual information received no absolutely negative responses and the tendency was toward the positive side. It is significant to note that most of the experts chose to accept the propositions as very probably true and not as absolutely true - probably because of some ambiguity as to the precise meaning of culture.

Propositions listed under the heading of "general principles" received in general a vote ranging from possibility to absolute certainty with emphasis on the latter. Only seven persons listed any of the propo-
sitions as absolutely untrue. One person thinks that facts should not be taught so as to be remembered forever. The reason is inexplicable to the author unless the respondent placed some peculiar meaning on the word "forever." Two persons believe that it is absolutely untrue that the task of determining which facts are necessary and useful and for what purposes they are learned should be intrusted to experts. These answers may have been prompted by the belief that such a determination has already been made or they may have been given because these individuals think that the ordinary teacher can solve the problem better than experts. Four individuals marked as absolutely untrue the proposition that all factual information can be divided into one of the four classes as indicated in this thesis. This thesis does not hold that every fact will fall precisely into one of these classifications but only that all facts will fit somewhere into these categories. It is admitted that there is great overlapping. It is possible that persons answering negatively did so because they construed each subdivision to be exclusive of the others, however, the bulk of the respondents marked the proposition as possibly true, a good choice in the opinion of the author. However, the task still remains of offering a better or more inclusive classification.

CRITERIA APPLICABLE TO THE PLACE OF FACTUAL INFORMATION IN EDUCATION

The following criteria were determined by comparing the total point score of each proposition with the score that would have been obtained if all the respondents had answered the propositions as absolutely true, very probably true, possibly true, very probably untrue, or absolutely
untrue. This comparison of the actual score obtained with the maximum score possible validates the certainty, the uncertainty or the degree of possibility stated:

UTILITARIAN FACTUAL INFORMATION

1. The proposition that certain facts are necessary or useful for physical well-being is closer to being absolutely certain than to being very probably true.

2. The proposition that certain facts are necessary or useful for self protection is closer to being absolutely certain that to being very probably true.

3. The proposition that certain facts are necessary or useful for moral well-being is closer to being absolutely certain than to being very probably true.

4. The proposition that certain facts must be taught because they are necessary or useful for existence in society is closer to being absolutely certain than to being very probably true.

5. The proposition that some facts (which will vary with the individual) are necessary or useful because they render possible the making of a living is closer to being absolutely certain than to being very probably true.

6. The proposition that some facts are necessary or useful because they facilitate wholesome living in a community is closer to being absolutely certain than to being very probably true.

PREPARATORY FACTUAL INFORMATION

1. The proposition that certain facts may be taught because their possession is necessary or helpful in more advanced work in school subjects which it is certain that the learner will study is closer to being very probably true than to being possibly true.

2. The proposition that certain facts must be taught to prepare an individual for a trade or occupation
which he intends to enter is closer to being absolutely certain than to being very probably true.

3. The proposition that some facts must be taught because they are necessary for admission to the high school, college, or professional school which the learner desires to enter is closer to being very probably true than to being possibly true.

DISCIPLINARY FACTUAL INFORMATION

1. The proposition that some facts with no intrinsic or utilitarian value may legitimately be taught because they render possible the improvement of the mind through reflective thinking is closer to being possibly true than to being very probably true.

2. The proposition that facts may be taught because they punish a child for his misconduct is closer to being absolutely untrue than to being very probably untrue.

3. The proposition that certain facts may be taught because they develop character is closer to being very probably untrue than to being possibly true.

CULTURAL FACTUAL INFORMATION

1. The proposition that some facts must be taught to enable an individual to appreciate more fully the esthetic, is closer to being very probably true than to being possibly true.

2. The proposition that some facts may be taught so that individuals will have a better understanding of human relationships is closer to being very probably true than to being possibly true.

3. The proposition that some facts must be taught so that individuals will constructively use their leisure time is closer to being very probably true than to being possibly true.
GENERAL PRINCIPLES

1. The proposition that there are some facts that should be taught so as to be remembered forever is closer to being absolutely certain than to being very probably true.

2. The proposition that there are some facts that need to be remembered only for some length of time is closer to being very probably true than to being possibly true.

3. The proposition that there are some facts that need not be remembered at all, but only apprehended and understood for a moment or until the desired effect has been achieved is closer to being very probably true than to being possibly true.

4. The proposition that the amount of facts now being taught, in some subjects at least, is excessive, is closer to being absolutely certain than to being very probably true.

5. The proposition that textbook writers should be certain of the purpose for which any fact is included in the textbook is closer to being very probably true than to being possibly true.

6. The proposition that teachers should know for what purpose any fact is taught is closer to being very probably true than to being possibly true.

7. The proposition that teachers should take effective steps to get facts learned with that degree of permanency which is necessary because of the purpose for which facts are taught is closer to being absolutely certain than to being very probably true.

8. The proposition that certain facts, at least, should be material for review and re-examination even after the pupil has passed a final examination and received "credit" is closer to being absolutely certain than to being very probably true.

9. The proposition that the task of determining which facts are necessary and useful and for what purpose they are to be learned should be intrusted to experts equipped to use the best techniques is closer to being very probably true than to being possibly true.
10. The proposition that in some subjects, at least, the problem of selecting necessary or useful facts and of determining why they are taught has not been solved is closer to being absolutely certain than to being very possibly true.

11. The proposition that the division of factual information into utilitarian preparatory, disciplinary, and cultural is inclusive is closer to being possibly true than to being very probably true.
CHAPTER V

SUMMARY

The purpose of this thesis was to attempt to establish general principles concerning the amount and character of the factual information necessary for a realization of the goal of true education and the permanency with which facts ought to be mastered.

The first step was an analysis of the purposes of education as commonly conceived and accepted. The purposes as enumerated by the Educational Policies Commission (19) were accepted as all-inclusive and valid.

The second step was a determination of the various functions that factual information may discharge in the achieving of the ends of education. This step included a classification of the types of factual information mentioned or suggested by educational authorities (page 72).

An analysis of the literature led to the formulation of certain hypotheses (pages 73-74). Fifteen possible functional ideas of factual information and ten general considerations or principles concerning the manner in which factual information is or should be imparted were discovered in the literature. These facts and principles, grouped under four major heads or categories, were submitted to a jury of fifty-eight experts for a judgment concerning their validity. In general, the opinions of the experts validated the conclusions of the author. These scholars
were unwilling to state that the categories of factual information as suggested by the author were complete or final, yet none were able to offer concrete suggestions for improving the classification.

An analysis of the responses to the questionnaire led to the formulation of objective criteria on the place of factual information in education. These criteria may be found on pages 93-96.


QUESTIONNAIRE ON THE PLACE
OF FACTUAL INFORMATION IN EDUCATION

The present study is an attempt to determine more critically than has been
done heretofore the various purposes for which facts may be studied and
the principles that should govern the selection of facts to be learned
and the method of teaching facts.

On the following pages there are a number of propositions that you are
asked to check. Kindly check each proposition as follows:

If it is Absolutely Certain, check column 1 (AC)
If it is Very Probably True, check column 2 (VP)
If it is possibly True, check column 3 (PT)
If it is very Probably Untrue, check column 4 (PU)
If it is Absolutely Untrue, check column 5 (AU)

Sample:

<table>
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<tr>
<th></th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
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<tr>
<td>VP</td>
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<tr>
<td>AU</td>
<td></td>
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</tr>
</tbody>
</table>

There is a war in Europe.................. x
This war could have been avoided........ x
The democracies will win the war......... x
The war will end within three months..... x
The Alaskans are responsible for the war.. x

For the purpose of this questionnaire all factual information is assumed
to fall into some one of the following categories: (1) Utilitarian,
(2) Preparatory, (3) Disciplinary, and (4) Cultural. Facts are grouped
on the following pages under these categories.

The questionnaire is not concerned with where a fact should be taught.
It may be that certain things that need to be learned should be learned
at home rather than at school. The purpose is to determine which kinds
of facts are worth learning, regardless of where they are learned.
THE CHECK LIST

UTILITARIAN FACTUAL INFORMATION

1. Certain facts are necessary or useful for physical well-being (e.g., that bathing is necessary, that vitamins contribute to health)..............................

2. Certain facts are necessary or useful for self-protection (e.g., how to start or put out a fire, how to tell east from west, how to act during a hold-up).............

3. Certain facts are necessary or useful for moral well-being (e.g., that honesty is a virtue, that murder is wrong)..............

4. Certain facts must be taught because they are necessary or useful for existence in society (e.g., how to communicate with others, how to make change, how to protect one's rights, how to make friends).........

5. Some facts (which will vary with the individual) are necessary or useful because they render possible the making of a living (e.g., how to invest money, how to teach school, how to repair an automobile)

6. Some facts are necessary or useful because they facilitate wholesome living in a community (e.g., how to improve the community, how to select community officials)

PREPARATORY FACTUAL INFORMATION

1. Certain facts may be taught because their possession is necessary or helpful in more advanced work in school subjects which it is certain that the learner will study (e.g., arithmetic to understand algebra, general science to understand chemistry, geography to understand history and economics)..................
2. Certain facts must be taught to prepare an individual for a trade or occupation which he intends to enter (auto mechanics, stenography, cooking, typesetting).

3. Some facts must be taught because they are necessary for admission to the high school, college, or professional school which the learner desires to enter (e.g., elementary arithmetic, English, and social studies; the facts contained in the two years of language required of students intending to take an A.B. degree in college; the facts contained in six or more courses of education for admission to graduate work; facts contained in the three years of pre-legal training).

DISCIPLINARY FACTUAL INFORMATION

1. Some facts with no intrinsic or utilitarian value may legitimately be taught because they render possible the improvement of the mind through reflective thinking (e.g., facts connected with formal grammar or algebra taught for no other purpose than to prepare the way for analytic thinking).

2. Facts may be taught because they punish a child for his misconduct (e.g., the learning of a page in a book).

3. Certain facts may be taught because they develop character (e.g., difficult problems in arithmetic and algebra that impress upon the child that life is really a struggle).

CULTURAL FACTUAL INFORMATION

1. Some facts must be taught to enable an individual to appreciate more fully the esthetic (e.g., how to react to beautiful paintings, statues, and music, and how to enjoy the grandeur of nature).
2. Some facts may be taught so that individuals will have a better understanding of human relationships (e.g., how to improve humanity socially, religiously, and economically, how to practice the precept "love thy neighbor as thyself").

3. Some facts must be taught so that individuals will constructively use their leisure time (e.g., the development of hobbies, of educational clubs, of lecture groups).

GENERAL CONSIDERATIONS

1. There are some facts that should be taught so as to be remembered forever.

2. There are some facts that need to be remembered only for some length of time.

3. There are some facts that need not be remembered at all, but only apprehended and understood for a moment or until the desired effect has been achieved (e.g., facts presented by the teacher for the purpose of inducing a child to attempt to read).

4. The amount of facts now being taught in some subjects at least is excessive.

5. Textbook writers should be certain of the purpose for which any fact is included in the textbook.

6. Teachers should know for what purpose any fact is taught.

7. Teachers should take effective steps to get facts learned with that degree of permanency which is necessary because of the purpose for which facts are taught.
8. Certain facts, at least, should be material for review and re-examination even after the pupil has passed a final examination and received 'credit'...

9. The task of determining which facts are necessary and useful and for what purpose they are to be learned should be intrusted to experts equipped to use the best techniques now available...

10. In some subjects, at least, the problem of selecting necessary or useful facts and of determining why they are taught has not been solved...

11. The division of factual information into utilitarian, preparatory, disciplinary, and cultural is inclusive (complete)...

12. If the above division is not inclusive indicate here what has been omitted....
The following are the names of the recipients of the questionnaire on The Place of Factual Information in Education.

Dr. Esther L. Anderson  
State Superintendent of Public Instruction  
Cheyenne, Wyoming

Dr. Ernest J. Ashbaugh  
Miami University  
Oxford, Ohio

Dr. Robert T. Babst  
Board of Education  
Buffalo, New York

Dr. William C. Bagley  
Teachers College  
Columbia University  
New York City

Dr. Herrick T. Bawden  
Ohio Wesleyan University  
Delaware, Ohio

Mr. J. P. Behm  
Board of Education  
Syracuse, New York

Dr. Frithiof C. Borgeson  
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University of Connecticut  
Storrs, Connecticut

Mr. James M. Burgess  
Superintendent of City Schools  
Melton, Oregon

Dr. V. V. Caldwell  
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Monmouth, Oregon
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Dr. Francis M. Crowley
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Dr. Francis J. Donohue
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Dr. Harl Douglass
University of North Carolina
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Miss Pauline H. Drollinger
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Dr. Royal B. Embree, Jr.
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Chicago, Illinois

Dr. Paul A. Kennedy
Assistant Superintendent of Schools
Brooklyn, New York

Dr. Daniel W. LaRue
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East Stroudsburg, Pennsylvania

Dr. Edward A. Lincoln
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Massachusetts

Dr. Robert J. Maaske
Eastern Oregon College of Education
La Grande, Oregon

Rev. Julian L. Maline, S.J.
Milford Jesuit Novitiate
Milford, Ohio
Dr. Harry U. Masters
Albright College
Reading, Pennsylvania

Mr. H. R. McCall
Superintendent of Public Schools
Chillicothe, Missouri

Miss Pearl Merriman
Western Washington College of Education
Bellingham, Washington

Dr. Frank B. Miller
Morehead State Teachers College
Morehead, Kentucky

Mr. L. C. Murray
Superintendent of Public Schools
Aitkin, Minnesota

Dr. Eugene A. Pauline
Mayhurst Normal College
Kirkwood, Missouri

Reverend Walter Pax
St. Joseph College
Collegeville, Indiana

Dr. I. J. Quillan
Stanford University
Stanford, California

Mrs. Anna Y. Reed
Cornell University
Ithaca, New York

Dr. Theodore L. Reller
University of Pennsylvania
Philadelphia, Pennsylvania

Dr. Clay C. Ross
University of Kentucky
Lexington, Kentucky

Dr. Herman H. Schroeder
Illinois State Normal College
Normal, Illinois
Dr. I. F. Simmons  
Bureau of Instruction  
Jackson Public Schools  
Jackson, Mississippi

Mr. Maurice M. Smith  
Redlands  
California

Dr. Francis T. Spaulding  
Harvard University  
Cambridge, Massachusetts

Mr. R.J. Stevens  
Superintendent of Schools  
Mancelona, Michigan

Mr. Dwight H. Stevenson  
Normal School  
Potsdam, New York

Dr. M. W. Tate  
Superintendent of Schools  
Gooding, Idaho

Dr. William S. Taylor  
University of Kentucky  
Lexington, Kentucky

Mr. Maurice E. Thomasson  
Johnson C. Smith University  
Charlotte, North Carolina

Dr. Harold S. Tuttle  
City College  
New York City

Dr. Gilbert Ulmer  
University of Kansas  
Lawrence, Kansas

Dr. C. C. Upshall  
State Normal School  
Bellingham, Washington

Mr. Harrison H. Vancott  
University of the State of New York  
Albany, New York
Mr. E. R. van Kleeck  
Superintendent of Schools  
Grosse Point, Michigan

Mr. Edward B. Van Ormer  
Pennsylvania State College  
State College, Pennsylvania

Sister Mary of the Visitation  
D'Youville College  
Buffalo, New York

Mr. Herbert Wennerberg  
Big Bear Lake School  
Big Bear Lake, California

Rev. E.J. Westenberger  
Diocesan Department of Education  
Green Bay, Wisconsin

Sister Xaveria  
Notre Dame College  
San Francisco, California
The thesis, "The Place of Facts in the Educative Process", written by Paul F. Quinn, has been accepted by the Graduate School with reference to form, and by the readers whose names appear below, with reference to content. It is, therefore, accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Rev. Austin G. Schmidt, S.J. March 13, 1940
John W. Scanlan, A.M. April 1, 1940