Chapter II
The methods and techniques of research include a consideration of the manner in which the data are collected, the tools used in this activity, and the way in which findings are classified and interpreted. The manner in which data are to be collected depends upon the methods and techniques of research used, the method telling how and the technique with what. The methods used in educational research may now be classified as, (a) descriptive (b) historical (c) experimental (d) philosophical (e) prognostic (f) sociological (g) creative and (h) curriculum making type.

(a) Descriptive method:

The descriptive method of research is fact finding with interpretation. It may take many forms, such as the school or community survey, the genetic or community check, the case or the case-group study, job and activity analysis including difficulty analysis, documentary or informational analysis and
other forms and types of reflective thinking. Descriptive research may be in terms of surveys and critical analysis of available data in printed form. The documentary analysis is an essential technique in curriculum making. The curriculum making type studies the directive attitudes and ideals that should dominate human conduct, attitudes, for example, of sympathetic tolerance, of critical questioning, ideals of honest conduct, pride in craftsmanship etc. In the catalogue analysis of Gladys C. Bell, the purpose is given as to determine the details of the content of courses in oral English offered in the standard four year teachers' colleges of the United States. This is one segment of an attempt to revise the course in oral English in the curriculum of Colorado State College of Education.

Any definite listing of desirable criteria for descriptive research in the form of a score card should not be considered to be finally authoritative. It may however, be concretely suggestive of good standards and procedures in setting up a status check for interpretation of a situation and may be used in the study and analysis of survey and other descriptive research reports.

1. Rugg, H.O. and John Hockett, Objective studies in Map location social science, Monographs, New York Columbia University, 1925 No. 1 p. 25.
Historical research interprets past trends of attitudes, events and facts. As in all social studies, the terminology may be confusing. One group of workers argues for the uniqueness of phenomena and their un-repeatability. So from one point of view history deals with unique phenomena reported without ordered reflective thought. But creditable research in the field of history is interested in discovering what past social facts have in common, how they repeat themselves, and what generalizations can be made to emerge from the analytical procedure.

Historians ordinarily draw their data from the observations and experiences of others. Seven steps in one of the schemes by the Division of Social Studies, Colorado State College of Education have been mentioned and these are:

1. statement of the problem
2. analysis of the problem
3. securing the data
4. manipulation and interpretation of


data (5) checking the data for reliability (6) writing the thesis and (7) probable rate of progress (4).

Historians generally draw their data from the observations and experiences of others. Since they are not likely to have been at the scene of the event, they must use logical inferences to supplement what is probably an incomplete account. Historical data are classified into two main categories (1) primary sources data and (2) secondary sources data.

Primary sources may be 'unconscious testimony not intended to be left as a record - relics or remains such as bones, fossils, clothing, food, utensils, weapons, coins and art objects are useful. Conscious testimony, in the form of records or documents, is another primary source of information - examples are constitutions, law court decisions, official minutes, autobiographies, letters, contracts, wills certificates, newspaper and magazine accounts, films, recordings and research reports.


Historical criticism is the evaluation of primary data. External criticism is concerned with the authenticity or genuineness of remains or documents. Internal criticism is concerned with the trustworthiness or relevance of materials. The story of the Cardiff Giant and the accounts of the Dead Sea Scrolls and Stonehenge illustrate the process of historical criticism.

A score card of criteria for historical research may include such items as worth of the problem, genuineness and reliability of sources, logical organisation of the report expressed in good English narrative and exposition, verification of data, adequate interpretation of facts, original sources as well as secondary sources examined through higher criticism, the possibility of further research, and a limitation of the cost of the project in terms of time and money.

(c) Experimental Method:

The experimental method provides a logical, systematic way to answer probing questions. To provide a precise answer, experimenters manipulate certain influences.


or variables and observe how the condition or behaviour of the subject is affected or changed.

Experimental attitude is basic in the thinking of the scientist in the natural and the social realms. Before the scientific revival under Francis Bacon, Western Europe had produced a villorione da-Feltre, whose experimental school was strangely modern in attitude and method. This has been followed in America by the child centered schools of F.W. Parker (1875 and 1883), John Dewey (1901), Mrs Emmons Blain (1961), Abraham Flexner (Lincoln Schools of Teacher College Columbia University (1917), and many others of recent origin.

Laboratory experimentation and group experimentation are two forms which this type takes. The first deals with individual change and development, the second uses group situations. Experimenters must understand and deal with threats to external validity of the experiment so that their findings can extend beyond their experimental subjects and generalized to a wider population of interest.

The criteria for experimental research are found among the thinking processes of reputable scientists engaged in studies of the operation of controlled variables in any situations. At least seven basic considerations should provide the guidelines: careful definition of a problem, minute definition of the experimental factors, selection of the best techniques for the experimental set-up, control of all factors in accord with the law of the single variable, administration of an adequate testing programme, a detailed readable report of research experiences and results, and definite provision for repetition of the experiment and for further research in the field of inquiry. Thus experimentation is a sophisticated technique for problem solving and demands training and experience of research workers.

(d) Prognostic Research:

The prognostic type of research may be defined as a mode of reflective thinking in the use of any basic method of investigation, when the main purpose is to predict future events. Prediction is most certain when the best method of ordered reflection is employed as in that of controlled experimentation. In S.A. Rice's Analysis four methods of investigation are considered. These are (1) the stylistic
approach, (2) the telic approach, (3) the method of genetic explanation and (4) the natural science approach. In a four-fold category for investigating and explaining experience the lowest probability of certainty is the stylistic approach. The likelihood of certainty increases as one considers the telic approach, genetic explanation and the so-called natural science method.

Technique useful in setting up research studies for prediction include graphic representation, description for the tracing of trends of facts, correlation for the determination of the facts of concomitance or relationship and the like.

Prognostic research may be evaluated in terms of general but basic criteria for all creditable reflective thinking. It may be scored also in terms of certainty, value, method of research used, and techniques employed. The standards applicable to all scientific research should be considered as well. Among these are worth while the limitations, adequate control of all variables, a well conceived testing


programme, acceptable classification of data for discussion and good interpretation, a readable and detailed final report capable of evaluation, and the provision for further research among related unsolved problems.

(a) Sociological Research:

Sociological research recognizes the need for reflection in specific cases of human conflict and arrested development among groups. It includes studying all human group relationships. The institutions of society are investigated with the purpose of furnishing recommendations for their improvement. "It seeks to explain how education as a social process may under optimum conditions eliminate social defects, perpetuate desirable institutions, group activities, group forms and practices, and attain for society the ideals and standards it aims to achieve." Educational sociology selects organized educational efforts or objectives and checks in terms of reflective thinking. It shows how an institution may take care of the ills of society. A three-fold attack on societal problems includes check of social development with recommendations for the improvement of human

institutions, in particular education, as well as analysis of the educational effort itself, as related to society in general.\textsuperscript{12}

Sociological research may be evaluated in terms of such criteria as resulting in the betterment of society, the effective use of philosophical hypotheses, ordered reflective thinking toward practical objectives set-up, the use of carefully selected research methods, measurement programmes objectively arranged in terms of accepted techniques standardization of worthwhile generalizations, and definite provision for further research on the problem attacked. Standardization of criteria not in the sense of regimentation of individuals and of groups but by general agreement on the attainment of practical objectives is desirable.

(f) Creative Research:

The creative type of research is in terms of reflective thinking in the realm of aesthetic values, which may also be characterized as a stylistic approach.\textsuperscript{13}

\begin{itemize}
  \item \textsuperscript{13} Alport, F. H. 'The prediction of cultural change' Hartman D.A. (University of Chicago Press, 1931).
\end{itemize}
evaluates the aesthetic product in terms of personally held standards of value. Its objective is beauty and at the same time truth\textsuperscript{14}.

Creditable creative thinking is in terms of the usual steps of mental activity in the conception and solution of a problem. It differs from other types of reflection in the fact that the original feeling or attitude is perhaps more instrumental and continuous throughout the entire process. It has all of the values attached to immediate personal possession which is so characteristic in the work of the prose writer, the poet, the dramatist, the musical composer, the dancer, the painter, the sculptor, the architect and the like.

The criteria of excellence in the realm of aesthetic production are most subtle and most difficult to isolate for discussion, evaluation and use. In the rank order list of criteria, no doubt, one should place first of all beauty, the ultimate aim of aesthetic activity, which is created by an artist and re-created by an on-looker. It is, therefore, a communication from spirit to spirit, and its value thus is of subjective nature\textsuperscript{15}.

\textsuperscript{14} Hutchison, E.O. 'How to think creatively' Nashville Tenu, Abington Cokesbury, 1949.

(g) Research in Curriculum Making:

Researches in curriculum making is an important activity and have assumed certain distinct characteristics. Curriculum making and revision isolate the problems of course content, organize methods of teaching, accept hypotheses, for solution, and get all evidence directed to obtaining certain tentative conclusions. Then, good generalisations for the conduct of educational effort are expected to appear and experimental tests of their permanency can be made for its prediction of values.16.

The procedures and techniques of curriculum making have developed from the level of tradition and individual opinion toward scientific thinking. H.O. Rugg of Teachers College, Columbia University and W.E. Peik of the University of Minnesota have published excellent analyses of the movement. The general agreement is found now on the items of things to be done, which include (1) a check of present offerings (2) an analysis of related research reports (3) determination of social objectives (4) tentative selection content (5) socio-psychological and logical organization of

the course (6) its experimental try out and (7) cyclical revision. Programmes for curriculum revision are becoming more carefully conceived and more scientifically set-up and the principles for guidance are beginning to appear in many projects in the United States. Some of the criteria for the value of curriculum research include ordered reflective thinking, generalisation of objectives, social relationship of content, careful conceptualisation and objective evaluation of outcomes, experimental treatment of method and usability in attaining well conceived educational objectives.

2.2 Methods employed in studies of philosophical nature:

Philosophy is a level of reasoning where research takes place above the smaller generalisations of science. Strictly speaking it is not a basic method of research. It is a domain, a level of value, where reflective thinking takes place. Its separate treatment here is justified by the supreme importance in the construction of ideals and standards. The view-points, the attitudes, and the philosophies of individuals and of groups and nations shape their earthly destinies.17.

The philosophical type of research may be defined as reflective thinking on levels of extensive generalisation, above the realm of fact finding science. Science deals with specific experiences and generalisations of relatively narrow import. Philosophy takes the conclusions of science in related realms and uses these as the raw material for further reflection. When we restrict our effort to science, we fail to move on to greater prophecy; the two are mutually dependent. Both are indispensable parts of the whole thinking. The work of philosophy is confined to the things of actual experience. Its business is criticism of experience as it exists at a given time and constructive projection of values, which when acted upon, will render experience more unified, stable and progressive. It provides the basis for protection of values as yet unrealised, values that are ends, that move men to action. Philosophy is concerned with making the most out of personal and social experiences. It is the function of philosophical research to point out the supreme values of reflective thinking on the level of the widest generalisations and to stimulate whatever ordered research is possible on this level.

18. Dewey, John 'The Determination of ultimate values or aims through antecedent or a priori speculation or through pragmatic or Empirical inquiry' (New York, The McMillan Company 1938), pp. 471-72.
Generally the philosopher scientist is a thinker of broad social values. Moreover it is significant to note the increasing preponderance in the philosophical content of the writings of the world's greatest natural scientist's\(^\text{19}\). It is true that science itself furnishes knowledge, feeling and motivation, but acts always in terms of generalisations. J. L. Kelley emphasises this by characterizing the first steps in the reflective process as both philosophic and scientific\(^\text{20}\). The point of view is that there is an identity of procedure in all true reflective thinking, the difference between science and philosophy being only in the basic material with which they work and the level of value at which they arrive. W. H. Kilpatrick summarises this by saying that 'all good philosophising takes its facts from the best available scientific authority'\(^\text{21}\). It was fashionable to call science as natural philosophy in the early days of combining areas under academic activities. The true philosopher is at the same time a true scientist. An outstanding example is John Dewey. As educational scientist,


he worked in the experimental laboratory school at the university of Chicago. Later, he was recognised as an educational philosopher and his leadership was acknowledged in guiding modern educational thinking in terms of worthwhile goals of scientific efforts.22.

As philosophy is reflective thinking in the ascertainment of truth or fact, if differ from science only in locus and the use of data. Philosophical research should be possible by any credible basic method of reasoning. Surveys and analysis of inclusive points of view and a skillful classification of the same would be the realm of descriptive research. The tracing of trend of events, attitudes, and interpretations of the past is a procedure essentially historical in nature. A check of individual traits or the ordered tryout of economic or social theories among individuals or groups would be the laboratory for controlled group experimentation. A genetic study of the origin of important human generalizations following their trend through an experimental period in the present and estimating their status in the future, would be prognostic research of the most valuable kind. The most important

procedures in curriculum research would be the determination of ultimate aims for course content, as well as the underlying assumptions for all educational efforts. Sociological research may deal with problems of widely conceived groups. It may be that in creative research the telic element envisages in its purpose values of wide philosophic import.

(a) Criteria for the Philosophical type of Research:

Important standards for research on the level of the more general values are to be found first of all in the procedures of all reflective thinking. The medieval or the modern pseudo-philosopher deliberates upon the first few steps of reflective thinking. He defines it, and accepts a tentative solution. He elaborates it mentally by shallow reasoning and introspective speculation. Then he accepts it as right and so a blind faith is generated to guide him all subsequent action. On the otherhand, the true scientific philosopher determines the four or five steps to consider carefully all objective evidence obtainable on some hypothetical solution. Though the pseudo-philosophic act may be more timely and fill in a pressing need, the scientifically arrived conclusion is more likely to be correct, as well as more worth while for prognosis.
A second criterion for the philosophical method considers its generality, its place on the level of true reflective thinking. It is obvious that the wider and more inclusive the concepts under consideration the more general is the value of research. Research by this method is of utmost value when evidence used consists of generalizations nearer the ultimate solution. A third consideration in philosophical thinking is its economic and social value. Generally philosophical thinking assumes greater significance when it is more closely related to the actual and recurrent problems of human culture. As in all reflective thinking, an important criterion considers the method of research chosen for the solution of the problem isolated. Sometimes a situation may demand a combined use of the experimental, the prognostic, the historical and the descriptive methods of research depending on the objectives, techniques and circumstances around a likely solution. An important first decision here is the skillful choice of the most pertinent method or methods. An adjunct to the second criterion listed above is an adequate consideration of data to be used in philosophical type of research. The facts of science should be definitely and adequately known and clearly understood.

23. Raup, R.B. 'On making research significant and vital' Advanced School Digest, 6 : I-11, 1940.
Philosophy should strive to approximate certainty, if worthwhile expectation should result from the endeavour. Generally speaking a careful definition of the data of the philosophical type of research in education is absolutely necessary, if socially valuable aims, purposes, and objectives are to be discovered.

Historical research on the level of philosophy is well illustrated in the investigation of J. B. Bury, formerly of Cambridge University. Here the concept of progress, together with contrary and pessimistic attitudes, is traced from early Greek times to the present. Analysing the Greek and Roman idea of the cyclical movement of history in a direction of decadence, he attempts to trace the facts of trend, to determine the truth with regard to the doctrine of progress. Generally this is an excellent example of the investigation of a philosophical generalisation over long historical periods. Our present research project is also historical research in the field of philosophical data, collected from different historical periods. History is a meaningful record of human achievement, which seeks to illuminate a question of current interest by an intensive

study of material that already exists\textsuperscript{25}. Historical analysis may be directed towards an individual, an idea, a movement, or an institution. A good historical research must be able to assemble all known informations\textsuperscript{26}. Then it is inter-related to break a set of pre-existing notions so that he can see a new relationship among things. In historical research data already exist in the form of crude remains and records, and therefore, any endeavour should stimulate re-thinking and re-consideration of facts and values for generalisation in a wider context. Should we here consider the activities of the historian as scientific? Those who take the negative position may point out the limitation as regards predictability. The purpose of science is prediction. But the historians cannot always generalize on the basis of past events because the past events are unplanned. The historian regorously subjects the evidence to critical analysis in order to establish its authenticity, truthfulness, and accuracy. 'In reaching the conclusions the historian always use the estimates of probability, similar to those used by physical scientists\textsuperscript{27}. This limitation also characterizes most behavioural research, particularly non-laboratory investigations in sociology.


social psychology and economics. The observations of historians are generally described in qualitative terms. But scientific research is both qualitative and quantitative. Hence we cannot ascribe historical research as a sort of scientific research.

The philosophical method considers the generality of its own observations. Such generalizations include the considerations of large group movements, attitudes toward nation and world life and similar other concepts. But there is some difference of opinion even among historians, as to whether or not historical investigations can establish generalizations. Generally the historians gather evidence and carefully evaluate its trustworthiness. If the evidence is incompatible with the consequences, a hypothesis is not confirmed. It is through such synthesis that historical generalizations are established.

2.3 Selection of topic and title:

The research problem in the present study is proposed to be a 'A critical study of the social philosophy in education'. The rising tide of population, the growth of the level of expectations and the great increase in knowledge
and productive work have posed problems for education causing changes to occur in most countries. It is an attempt to study such problems from the socialist point of view and to see whether a comprehensive socialist ideology can be conceived at the present time.

(a) Justification of the problem

The educational machinery is dependent for its values based on the needs and aspirations of the community of which it is an institution. Educational reform always depends upon the changed social values. There can hardly be a country today where education is not a major topic of debate and discussion. The reason for this is the enormous growth of population and people's participation in self rule. As a consequence in many countries it is associated with over-throwing of colonialism, achievement of independence and the growth of national consciousness. Moreover economic development of the contemporary world depends upon development of skills in the labour force and upon the rapid assimilation of new techniques in industry and agriculture. Socialist concepts have been noted by many authors of the west of whom mention can be made of John Dewey, Karl Marx, Ottaway. It has considerable value if the socialist approach as conceived by different philosophers is examined in its completeness and
and ideas scattered in the writings of great authors are set forth as belonging to a common philosophy of education.

(b) Definition:

The socialistic philosophy in education may be defined as the study of the interaction of the individual and his cultural environment including other individuals, social groups and patterns of behaviour. The social interaction is the key problem of educational sociology.

Socialistic approach in education starts with an assumption that education is an activity which goes on in a society and its aims and methods depend on the nature of the society in which it takes shape. It is concerned with the educational aims, methods, institutions, administration and curricula in relation to the economic, political, religious, social and cultural forces of the society in which they function. Regarding the education of the individual, socialistic philosophy concerns with the influence of social life and social relationships on the development of personality. So educational sociology will enable us to understand the complete development of the individual child, the social patterns that influence him, the cultural forces that modify him and produce such problems as delinquency.
The educational system evolved by a country is determined by the dominant social forces that operate in that country. This is illustrated for example in the changes that were brought about in the educational thinking and practices following the Industrial Revolution in England. Looking to India, attempts at industrialisation during the past independence period brought about a kind of rethinking for reshaping the educational system according to new demands of the present time. It is, therefore, time for us to reexamine different views expounded by socialistic philosophers and to see if some kind of a synthesis is necessary to adopt a set of ideas to newer demands of life.

The analytic-synthetic method is followed in general with regard to the present study. First the socialistic views of different philosophers and communities are analysed and then an attempt is made for synthesizing such views made by different quarters from time to time. It is believed that historicoo-philosophical studies in the field of education like the present study may be conducted with profit by organizing materials from (1) bibliographic researches (2) legal researches (3) studies relating to history of ideas (4) studies relating to the history of institutions and organizations. The present study may be

conceived of as belonging to the realm of bibliographical research. Bibliographic research aims at determining and presenting truthfully the important facts about the life, character, and achievements of important educators. In the Indian context we may study the contributions of Gandhiji, Tagore and other leading educationists and their influence on current educational practice and thought. Thus a list of major books, journals, and other documents has been prepared while selecting the problem with a view to using them in the course of study. This research problem includes besides statement and formulation of some generalisations and questions to be raised and answered, gathering and analysing of memory data and arriving at conclusions through a logical process (reasoning). There is no scope for any experimentation of data in this project. Since basic data are collected through library work by using both primary and secondary sources.

(c) Primary and Secondary Sources:

Primary sources are the first hand accounts, being the solid bases of an historical inquiry. Good, Barr and Scates have called them as the 'first witness to a fact'.

The original documents or records come under the category of primary sources. In the present study the original writings by authors and official records constitute the primary sources.

Secondary sources are the accounts of an event provided by a person who did not directly observe the event, object or condition. Text books, handbooks, yearbooks, encyclopedias provide such secondary sources which are also used in the present study.

(d) Evaluation:

After the data have been identified and collected a close evaluation or critical analysis is made. The researcher has taken adequate care at the evaluation stage to use only authentic and valid material. This process of establishing the authenticity of the data is termed as external criticism and that of establishing the validity of their content is termed as internal criticism.

External criticism, also called lower criticism, checks the genuineness and authenticity of the source of the used material. It helps to determine whether it is what it
appears or claims to be and whether it reads true to be original. The purpose of external criticism according to Maulay is not so much negative, that is the detection of fraud - as it is the establishment of historical truth. A rich fund of historical and general knowledge has been applied to determine the genuineness of these data. Van Dalen also agrees that the researcher needs a good chronological sense, a versatile intellect, good common sense, an intelligent understanding with patience and persistence.

**Internal criticism**, also called higher criticism, is concerned with the validity, creditability, or worth of the content of the document. Internal criticism is positive in nature to discover the literal and the real meaning of the text. Good, Barr and Scates are of the opinion that 'both positive and negative criticisms are essential in historical research but the researcher should not go so far as to be cynical and hyper critical.'

The validity of a historical fact contained in a document can sometimes be evaluated by comparing it with

---


the statements of other authors, when there is disagreement, it must establish which one is correct. This must be on the basis of overall credibility, reputation, independent authentication and general consistency with other known facts.

(e) Interpretation of data and reappraisal of attempted generalizations:

After the data have been collected and evaluated, the next step is interpretation of the data. The process of interpretation is essentially one of stating what the result show. Interpretation always calls for a careful, logical and critical examination of the results obtained after analysis, keeping in view the limitations of the sample chosen, the tools selected and used in the study. Because of the unique nature of historical data, the task of interpretation becomes complicated and acquires special significance. Historical causes are invariably complex and we must accept the fact that she is not dealing with clear-cut cases of cause and effect. According to Maulay 'causation is a troublesome concept in science, it is doubly so in historical research where causes are in the nature of antecedent or precipitating factors, rather than 'causes' in restricted scientific sense'. Since history is actually a record of

a chain of related events, it becomes very difficult to interpret a particular event in a chain of temporal events. Moreover, in the use of analogy in the interpretation of data also, we should be very cautious while drawing comparisons between events. Carefulness is needed to make use of similarities as well as of differences. The ultimate goal of this type of research is not only to establish facts but also to determine trends which the data may suggest and to draw influences from the data. Here the goals is one of synthesis and interpretation rather than mere summation.

A usual step following interpretation is generalisations and conclusion. As a final step of this piece of research involving critical and logical thinking the generalisations are stated and the findings are summarised. An examination of many developments of the past seems to confirm the observation that there is little in education that is really new. Thus this piece of research is in the above explained sense historical in the field of philosophical writings. It is a kind of an analysis of philosophical writings by past educators and systems and an attempt at synthesizing all relevant philosophical view points into an interwoven discourse.