Exploring the literature moves the researcher to the frontiers of knowledge where he can evaluate new findings in his field, gaps in knowledge contradictory findings and identifying needed research. He will be familiar with methods and bibliographies that may prove useful in his own investigation.

THE FUNCTIONS OF THE REVIEW OF LITERATURE

There are five functions of review of literature :

1. The conceptual frame of reference for the contemplated research.
2. An understanding of the status of research in problem area.
3. Clues to the research approach, method, instrumentation and data analysis.
4. An estimate of the probability of success of the contemplated research and the significance or usefulness of the findings and, assuming the decision is made to continue.
5. Specific information required to interpret the definitions, assumptions, limitations and hypotheses of research.

The detailed description of these functions have been given in the following paras:

1. Conceptual Frame of Reference

The first function, provides the conceptual framework of research which involves both conceptual and research literature. The most direct way of doing this is to read the basic writings in the field as well as the recent writings of key thinkers. The researcher must feel fully satisfied when he has completed this phase of his view that he is aware of all the points of view in the field and particularly that he has devoted himself diligently to learning about the points of view which differ from or are opposite to his own. All points of view relevant to the research problem should be presented as strongly as the most devoted proponents of that point of view would wish.

The first function of review of literature provides the sound conceptual framework of the research problem. He should feel that, in a debate or seminar, he is able to represent any point of view fully, in the sense that he has come to understand the arguments for that point of view.

2. Status of Research

The second function of the review of the literature is to provide an understanding of the status of research in the field. This comes from reviewing the research literature. This phase has several specific sub-functions which can be described in terms of the questions words: what, when, who and how. These four words provide the basic infromation which reveals the status of the research in hand.

First, through his review of the research literature the researcher learns what researchers have already been undertaken and completed in the problem area and the results that this research has already achieved. The unnecessary repetition can be avoided. Learning about research in progress is difficult to locate. Within specific university or the experts of research degree committee can help in this direction.

The other aspect of what, learning the results of previous research, is the best known purpose of reviewing the literature. We are more interested in learning about previous research than the result. After intensive review of conceptual and research literature in such an area, a researcher may develop confidence that he has an explanation for the inconsistencies.

In addition to learning what has been done, the researcher seeks to identify when the research has been done, specifically how current research has been done, specifically how current research in the

problem area is. There are periods of time in which a great deal of research is done in the problem area. Learning when previous research has been conducted has several meanings for researcher:

- It will determine how far back chronologically his review of the literature will follow.
- When there is a wealth of recent research in the problem area.
- When there has been a recent lack of interest in the field, he will need to go further back until he comes upon the research.
- Replication is sensible when a research study has provided the basis of some current belief that the findings still hold true.

With 'what and when' considered, let us consider the importance of 'where', that is, identifying the geographic areas in which the previous research has been completed. The major categories within this classification are national, regional, and degree of urbanization. Typically, educational research reviewed by researcher is limited nationally of Indian conditions, in that it consists of previous research done in this country.

The importance of the second category, region, depends on the problem area. For some area, primarily those in educational psychology, studying human characteristics and basic behaviour, region would seem irrelevant. For example, in research in the learning process, it seems sensible to ignore region of the country, and instead to accept the assumption that people learn through the same psychological processes in India as they do in the U.S.A. However, when the research moves into areas involving attitude, patterns administrative policy or educational history, despite the large common areas, it is not possible to assume that the regions of India present relatively the same research settings. They differ in such varied areas as the origin and tradition of the schools and, reflecting climatic and economic differences, in the length of the school as well as in the months which children spend in school. They differ also in levels of achievement, as reflected in the different regional standards of national competitive examinations like the Merit Scholarship Examination. For this reviewing research in these areas, the researcher will take careful note of the regions of the country in which the previous research has been conducted. Then he will have to decide whether or not this research applies to the region of his own research and use it accordingly.

It is important to recognize that research of national scope is now feasible to a much greater extent than was possible' only a few years ago. This is true both because of increased knowledge and facilities for obtaining research data from a broad geographic area and because of increased facilities for processing means of data quickly and inexpensively.

Much the same set of arguments can be applied to the third category, degree of urbanization. This, like region, is a characteristic whose importance depends upon the problem area. The degree of urbanization of the community in which research is done may vary from rural communities at one extreme to large metropolitan centres at the other extreme. The most cursory review of the educational literature will indicate that the preponderance of research in every problem area has been done in metropolitan settings. Thus, the researcher designing a project to be conducted in metropolitan centres will find similar research settings in the literature; the researcher designing a project with a rural setting will find little. Perhaps the most discussed area at present is the education of the culturally disadvantages child. Reading the literature one would assume that culturally disadvantaged children live only in urban centres. In fact, the educational problems they pose have a much longer history in rural settings.

The solution of this, of course, is to consider not only where previous research was conducted but who was studied. This means identifying the universes or populations which have previously been studied, how they were sampled, and the extent of the sampling. Here the researcher is interested in the

broad general levels of universes studied, as well as in the specific populations sampled. For instance, the researcher in education will seek to determine how much of the research in the problem area involves pupils, teachers, parents, administrators, or the public. He will also want to identify which groups of pupils; elementary or secondary, first graders, second, or third? Finally, he will want to note the size of the samples used. Has the researcher in the problem area typically used small samples or large samples? Is there a study which had usually broad population and substantial sample size ? To what extent has population been stratified on variables like socio-economic background, intelligence, sex, interest, and achievement in the problem area? Finally, if he has even tentatively identified his own population. he will be interested specifically in the extent to which there has been previous research on that population.

One purpose of this consideration of the 'who' of previous research is to enable the researcher to make a judgement as to the relevance of a universe and population for his own research. Theoretically, he would advise students not to plan to study those universes or populations which have already been sufficiently studied in the problem area, either at the general or specific level. In reality, with the current status of research in most problem areas in education and the social disciplines, this is not a difficulty as there are no problem areas in which populations have been sufficiently studied.

3. Research Approach, Method, Instrumentation and Data Analysis

This function of the review will serve the third function of providing clues of methodology and instrumentation. Specifically, the researcher will want to learn the extent to which previous research in the problem area has utilized the historical survey, or experimental approaches, because this will help to guide his own choice of research approach. For this same reason, he will want to identify the research methods which have been used so that experience with these can help him select his own. Finally, he seeks to become familiar with the data-gathering instruments which have been used so that if an already existing instrument is appropriate, it can be used intact or adapted for his own research.

For this consideration of the how of previous research the researcher should be as interested in identifying the rationale for the selection of a particular approach method, or instrument. Furthermore, he should also be interested in what alternative approaches methods and instruments were considered and/or tried out and why these were rejected. Unfortunately the rationale for the selection of research approach method, and instrument, and the thinking that motivated the rejection of alternatives. is generally omitted from the research literature in every branch of the social sciences.

In addition to learning rationals for method as fully as possible to completely serve the third function of the review of literature providing clues to methodology and instrumentation, the researcher should know what methods and techniques have been used in his problem area and the success achieved with each. Depending on his purpose in doing research he may decide to use a technique which has been shown to function successfully or to try one which has not been used before in the problem area. He would not try techniques which have been unsuccessfully unless he had specific reasons to believe that his use of the method was significantly different from previous attempts.

In the third function of the review of literature, the review of instruments parallels the review of techniques in that area, too, the researcher is seeking to learn what has worked and what has not. If he is fortunate enough to discover a successful instrument which he can use this is preferable to developing a new instrument for two reasons. It establishes continuity between the new research and the previous research and it spares the researcher the time-consuming and difficult job of instrument development. Even finding an instrument which can be adapted to the needs of research is a tremendous advantage.

Again, we must put in a realistic qualification. Most journals which report research do not print the actual instruments. Often these do appear in the appendix of the complete research report or thesis or dissertation on which many journal articles are based, or else can be obtained directly from the author of the article. The simplest procedure is usually to contact the author directly, since in any event he will be contacted for permission to use or adopt any instruments he has developed.

It is important to distinguish between what are generally considered standardized instruments and those specially developed for some previous research project. Standardized instruments are those which have been used widely enough for normative data to be available. The process of standardizing instruments also provides data on reliability, and sometimes on the availability of the instrument. The availability of these three kinds of data norms, estimate of reliability, and estimate of validity make standardized instruments attractive to researchers, particularly to students doing research. These attractions are quite real using an instrument with norms and established reliability does have great advantages when these data have been obtained from samples from the same universe as we plan to study.

Another instance where the availability of normative data is not enough of an advantage to use an instrument is when the literature indicates that, although standardized data are available, the previous research provides little hope that the instrument will produce meaningful data. For too often in the literature we find studies which use standardized instruments in instances where it was obvious they would not function.

The discussion above on these first three functions of the review of the literature for survey and experimental research should also imply what it is that the researcher is seeking as he reads. For the first, or overview function, he is concerned with identifying each point of view and supporting arguments and evidence for that point of view. For the second function, the status of research, he will do much more structured and specific review, concerned with identifying what was studied, the outcomes of each study, how the outcome of the several separate studies relate to each other, who had studied and where, and when the research was done. For the third function, clues to methodology and instrumentation, he is concerned with how the previous research was done and why it was done, the way it was.

In a sense, it is the combination of these first functions which yield the fourth and fifth functions of the review of the literature.

4. Probability of Success and Significance of Findings

With the full body of the previous research reviewed, the researcher is in a position to evaluate the success which others have had done research in the problem area and the usefulness of their findings. If others have been successful and the findings are useful, then the prognosis for his own research is good, and the decision to continue on with the research is clear and simple to make. However, if others have been unsuccessful and produced inconclusive research or research of little value, then the researcher has a more difficult to make decision. He must ask himself whether there are specific reasons to believe that he can succeed where all others have failed. For the literature truly to serve this function of providing as estimate of the success potential of the contemplated research, the researcher must be willing to make the negative decisions to abandon or alter the project, as well as the positive ones to continue on as intended. All too often in research, only lip service is paid to this function. Researchers do review the literature and do seek to determine the success potential of their contemplated research, but never truly entertain the possibility of altering or abandoning their plan. If no one has ever succeeded in doing what they plan, they argue that they must be the first. This author would say more power to

them, and would be the first to cheer their courage provided it was based on something more substantial than hope.

If the researcher has some new idea, some new method, some new instrument, which leads him to believe he will succeed where all others failed, then he has every right to proceed. However, if he only intends to try again what has never worked before, then he should seriously consider whether he can reasonably except to do any better than his predecessors. If not, he should devote his time, energy, and ability to a research problem in which there is a greater likelihood of his making a positive professional contribution.

5. Definitions, Assumptions, Limitations, and Hypotheses

After considering the literature the researcher can honestly conclude that there is a reasonable expectation that he will successfully complete the contemplated research with results that will make a contribution of his field. Then he will use the material from the literature as the basis for stating his definitions, assumptions, limitations, and hypotheses. Having read the works presenting opinion and theory in the problem area, and having reviewed the relevant research as well, the researcher should be thoroughly familiar with the way in which terms have been used, both in the theoretical sense in the conceptual literature, and in the more functional sense in the research literature. Thus, he should be able to formulate the definitions for his contemplated project. Where possible and sensible, he should use the definitions which have previously been used in the literature, because this is one way of making old and new research comparable. Where necessary. however, he is free to adapt previous definitions or formulate new ones. The essential point is that this be a knowledge decision made with full awareness of how key terms have been used previously.

In the same way that the review of research makes the researcher aware of how terms have been used, it (the conceptual review as well) should have made him aware of those aspects of the problem area which have been so well demonstrated by previous research that they are widely accepted as true. These he can use as the assumptions of his on research. Finally, he should have become sufficiently attuned to the controversial or open-to-question aspects of the problem area. Then, as he plans his research, he can be alert to which of these aspects he can or which he cannot handle in his own project. Those he cannot handle will form the basis for the statement of limitations of the research.

His awareness of the results of previous research, and his knowledge of the current thinking in the field, can now be combined with his own experience to produce the statement of the hypotheses, or expected results of the research. In addition of identifying the expected outcomes of his study, the researcher should identify the bases in the literature for each specific belief. In this way in both the outline and the report of his project, he can state the rationale for each hypothesis, identifying the theorist, previous research study, personal experience, or combination of these which leads him to expect this particular result.

In addition to the five direct functions discussed above, we can identify one indirect function of the review of the literature; to serve as a sounding board to help the researcher know when his research problem has been sufficiently specified. This function can best be described in terms of two different feeling tones. The first feeling tone is one in which the researcher finds that, simultaneously, all of the literature seems relevant or none of it seems relevant. This is the feeling tone characteristic of the early stages in problem development when the research problem is insufficiently specific. As the problem is specified, however, and the researcher continues to read, a subtle change takes place. He now finds that certain articles or studies have a striking and exciting relevance; others while possibly in the same problem area, are not directly related. When he experiences this feeling as he reviews the literature,

then he knows that the research problem is approaching sufficient specificity. We can restate the general rule mentioned earlier. As long as this judgement of relevance is difficult to make, the literature is reflecting insufficient clarity and/or specificity in the research problem.

HOW TO CONDUCT THE REVIEW OF THE LITERATURE

The place to begin a review of the literature varies, depending upon how familiar the researcher is with the problem area. As we stated earlier, the thoroughly well-read researcher will need to complete only a brief review of the latest writings and research. Since this researcher will also know the major thinkers and sources of research in the field, he does not usually need help in conducting this brief review. This section then, will assume that the researcher is not an expert in the problem area and discuss how the non-expert reviews the literature.

The non-expert should begin by reviewing the conceptual literature, for it is more comprehensive than the research literature and will provide a better overview of issues. An excellent place to begin is with a general text in the problem area in an encyclopaedia or review of recent works. In education, we have excellent general texts in almost all areas as well as general encyclopaedias like the Encyclopaedia of Modern Education and the Encyclopaedia of Educational Research, and more specific works like the Encyclopaedia of child Care and Guidance or the Yearbook of the National Society for the study of Education.

When the research problem has been specified, the researcher should take stock of his reading to date, particularly appraising its relevance in the light of the newly specified research problem. He will want to ascertain whether the conceptual literature already reviewed provides a thorough conceptual framework for the specific problem that he has new decided upon, or whether further work is needed in the conceptual literature. In other event, however, he will also want to move on new to the research literature, and begin to see the what, when, where, who and how of previous research on his specific research problem.

In the course of reading the conceptual literature he will have come upon references to research studies. These may be a good first set of studies to locate and read, preferably as complete report. But usually at some point, his list of references is exhausted and the non-expert will seek other references from the mass of the published literature. We are fortunate in education in having available several basic tools to use for reviewing professional literature, such as the Education Index, Child Development Abstracts, Psychological Abstracts, sociological Abstracts, and parallel tools for the lay literature such as the Cumulative Book Index, and the Reader's guide to Periodical Literature.

In fact there are two guides to reference books and a book on how to locate educational information. These, and the most frequently used indexes and abstracts are listed above, with a brief summation of the main function, purpose, and organization of each. The researcher not already familiar with all of these resources should make it a point to become familiar with each of the sources listed, since at some point in most research, any or all of them might be useful.

The non-expert begins this phase of his review by using the index or abstract most relevant to his problem area. For example, for the researcher interested in developing a research project in the area of teacher-education in the elementary school, the most relevant index is the Education Index. As noted in the list above, this is an alphabetical topical index issued monthly which lists under each topic recent relevant books and journal articles. To use the Education Index in the review of the literature for the teacher-education study, the non-expert would take the specific problem on teacher-education, also

listing several related terms like "teaching practice" criteria of admission, and "identifying teaching skills" and go to the Education Index, pick up the most recent bound volume, look under these headings, and copy every title appearing there which seems to have relevance for the problem.

SOME HINTS FOR REVIEW OF LITERATURE

Some miscellaneous hints are provided here on how to review the literature. First additional library sources will be helpful, such as Specialized dictionaries and biographical references. The dictionaries, of course, are most useful in formulating the research definitions, but also of value in making certain that we understand all of the concepts that we discover in the literature. It is a good policy to verify our understanding of all important terms and concepts, even those which are familiar. We may have enough grasp of the term to use it in conversation, yet not understand it well enough to use it in research. The listings of thesis and dissertations provide the most complete and current contact with a large part of the research done in colleges and universities, much of which is not published and so never indexed or abstracted.

A second hint is to realize that reviewing the literature is essentially the library phase of the project, and so we must become thoroughly conversant not only with the way in which libraries in general function, classify, and catalogue, but also with the way in which the specific library in which we work does these things. Obviously, we must become thoroughly familiar with the general catalogue and Library of Congress cataloguing system/Individual libraries differ. Therefore, the simplest procedure is to thoroughly familiarize ourselves with, the rules and techniques of the libraries in which we shall do our bibliographic research. Most libraries have staff available to give an overview of the procedure and rationales by which the library material is catalogued and organized, and we should take advantage of this advice. Trial and error at this stage is needlessly wasteful of that precious research commodity, time, and so is to be avoided.

A third hint is to recognize that there are only two criteria for good bibliographic research; accuracy and consistency. Therefore from the very beginning of the review of the literature it is sound practice to begin recording the essential information accurately and in exactly the same way.

A fourth hint is to copy direct quotations and not paraphrases of an author's remarks on the bibliography cards. It is impossible at the early stage of the research to know in what form we will want to use an idea abstract from the literature. If we have it transcribed directly, we can use it later in our report either as a quotation or paraphrased. If, however, we only paraphrased it and later want to use the quotation, we must make a wasteful and unnecessary trip to the library. When a quotation is put down on the bibliography card, be certain to note the page number of the book or journal on which it appears, for this will be needed in referring to the quoted remark.

Consistently, throughout this library phase of the research, we should be over-compulsive in our note taking. If we err, it is far better to err on the side of writing too much than on the side of writing too little.

The one thing we wish to avoid is the necessity, later in the project when time is precious and needed for activities like data analysis and report writing, of having to return to the library to amplify some brief note or verify a half-remembered quotation. In keeping with this thinking, at every stage of the project we should also make a note and keep a record of every information seeking activity in which we engage. This includes correspondence, conversations and discussions on appropriate techniques or methodology with consulting experts. Remember that until the research project is completed and the report written, it is impossible to know what will and will not ultimately prove to have relevance.

We should also be aware throughout the review of the functions of the review of the literature and organize our material under these different functions. This means that as we read we keep in mind that we seek seven major areas of information:

1. Support for the need for our study; its success potential, and its potential significance.
2. Delineation of the major theoretical points of view. Summary of research results.
3. Clues for the hypotheses of the proposed study.
4. The rationale for each hypotheses.
5. The definitions, assumptions and limitations of the proposed study.
6. Clues for methodology and instrumentation.

The final stage of the review of literature is to write that section of the research outline or report based on the review. There are two reasons why at least a draft of this material should be written at the point in time when the review is completed. First of all, our thinking is fresh and complete; it is astonishing how much we forget when we delay writing. Second, the review will be the foundation on which we build the structure of our study, and we should achieve the precision and closure which come only with writing. With this achieved, we are ready to move on to the next step of the research process.

SUGGESTIONS FOR LIBRARY USE

The educational research studies can be classified into two categories; library research and field research. Philosophical and historical researches are known as library research in which review of literature is considered as method of research. The survey and experimental researches are the field research in which review of research is considered as an inquiry or technique research. In both types of studies library is used for the review of literature.

The major difficulty to use library effectively is to take notes and to sit, for a longer time. For this purpose students should use the advantage of modern facilities wherever possible in the libraries.

The following facilities are available in our good libraries:

1. Most of libraries have typing facilities for the use of research scholars at very nominal changes.
2. He should make use of photo-state facilities for maps, charts, diagram or any figure or table. It is available in our libraries at the minimum changes. It is a very economical device from time and money point of view.
3. Another very satisfactory procedure is to dictate notes directly from the references into a portable tape-recorder for transcription at one's convenience.
4. There is inter-library loan facility provided. The research scholar can request the librarian for references or unpublished thesis from other university library.

Notes Taking: It is an art which can be acquired by practice and persistent efforts. The following precautions are to be taken in taking notes from the library :

1. The researcher should be well acquainted with bibliography references, foot-notes and notations are used for reporting a research work e.g. ibid, op. Cit. loc-cit, Journal no. and vol. etc.

2. The library note should not be taken on note-book papers or sheet of paper. He should make use of cards measuring $3'' \times 5''$ or $4'' \times 6''$ which are specially prepared for this purpose because they are easy to carry and easy to arrange topic wise.

3. He should make efforts that a card should include only one topic or one reference or one study on one card so that rearrangement may be easier.

4. At the top of the card library number should be noted down, after that author or editor, year of publication, title of the book or journal, publication edition or no. and volume. These should be written below the reference the reverse or back can also be used for this purpose.

5. Each card, when ready should be fitted under a definite heading or topic marked at the top of the card.

6. Notes must be complete, legible and understandable and no gap should be left.

7. Direct quotation should be carefully acknowledged.

8. The appropriate and relevant material should be noted down and he should not waste time for unnecessary material.

PRECAUTIONS IN LIBRARY USE

The following precautions are to be taken in the use of library for review of the literature:

1. Avoid intellectual dishonesty and guard against the temptation of appropriating large portions of the work of another, without acknowledging indebtedness.

2. Guard against being conditioned by the view point of an earlier investigator and the temptation of blindly following his procedure.

3. In certain cases some studies have no needed to be repeated under similar conditions in order to secure an adequate check on the results of the first investigation. Normative survey type of research which deals with current conditions needs to be replicated on a regular interval in order to keep in touch with change and developments.

4. Merely listing of previous studies without reviewing them or giving their characteristics is not enough. A very brief account of each investigation giving at least the result, the method and the sources of data and the year of research must be provided in the chapter of a research report.

5. It is always helpful to arrange the previous studies in chronological order so that the growth of the field is clearly known to the researcher as well as to the readers.

6. A researcher should have good grasp of library procedures which will help him to locate books and references needed by him without wasting most of time and energy. This process can be classified into three categories:

   (*a*) *Preliminary Reading*, for the birds eye view of the whole thing.

   (*b*) *Critical Reading*: The references and material which seem useful as a result of preliminary reading are noted down and are read critically and serious evaluation of the available information and data.

Completion of Bibliography

The bibliography of references which are really significant for the study should be read carefully and noted down systematically.

REPORTING REVIEW OF LITERATURE

Generally review of literature is reported in the second chapter of the thesis or dissertation. The purpose of reporting the review of literature is not to write down research abstracts one by one which is usual practice of the researcher of to-day. It is most difficult and creative job on the part of researcher. The following procedure should be followed in reporting it :

1. The research should go through collected research studies of the field. He should make an attempt to exhaust all sources of review of literature. He should try to evolve a criterion for classifying the studies. The usual or traditional classification is: studies conducted abroad and studies conducted in India in educational research. The educational researches can be classified: on the educational level "(primary, secondary and college); and on the basis of variables of the study.

2. After evolving criterion of classification, these studies, are arranged according to criterion. One type studies review should be reported separately. The similar type of findings should be given in next para, and he should try to relate with to his own study. This procedure should be followed for reporting all types of studies.

3. At the end of review of literature. he should try to summarize in brief to provide a global picture of whole knowledge of the studies. After that he should relate his study to them and evolve gaps. In the end he should show that his study is a derivation from these studies.

SUGGESTIONS FOR REPORTING REVIEW OF LITERATURE

The reviewing of literature is the continuous process. A researcher begins the review of literature even before selecting his problem of research. The review of literature generally helps in identifying and selecting a research problem. If researcher has selected a problem of his own or suggested by some expert; even then he has to review literature for its justification that it is a novel problem. After selecting and defining a problem, he has to formulate hypotheses for the problem. The review of literature provides the rationale or basis for these hypotheses. The rationale for method, sample tools and statistical technique are obtained from the review of the studies. The results and findings are discussed at length with the help of review of literature. The findings of earlier studies may support his formulation or contradict. He has to advance some reasons for it. The review of literature is used from selecting a problem upto reporting the findings of a study.

Second suggestion is that knowledge is increasing or advancing rapidly and research studies are on going process. A research scholar should remain in touch with library literature or the field throughout the period of his research work. He should be upto-date at the time of reporting review of literature and discussing his findings.

The reporting review of literature makes the research study very scientific and up-to-data. It is not only useful in preparing and writing a thesis but mastery of the review of literature develops the scholarship in the researcher. He justifies in any interviews, seminars, conferences and also in his teaching job and professional growth.

EXERCISES

1. Define the term 'Review of literature', how is it different from traditional meaning? Enumerate the objectives and significance of review of literature.
2. Explain the need and functions of review of literature.
3. Describe the role of review of literature in historical research and survey, experimental type of research in education.
4. Enumerate the sources of review of literature and suggestions, for the use of library for this purpose.
5. Describe principles and procedures of review of literature and precautions in consulting library material.