Structural Build up of a Thesis or a Research Project

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ABSTRACT

The present paper is an attempt to discuss the various steps for designing the thesis or a research project. In the present paper steps like Define Research Problem, Review of the Literature, Formulate Hypotheses, Design Research (Including sample design), Collect Data (Execution), Analyse Data (Test hypotheses if any) and Interpret and Report are discussed in brief.

INTRODUCTION

Thesis, dissertation, paper and articles are the branches of research. Research is a systematic discussion of science and arts. Research is a very broad term; it cannot be defined with one or two definitions. Research can be done on any subject and in any field that comes under the heaven and earth. It means that research is the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions. There are many types of research such as Applied Research, Fundamental Research, Descriptive Research, Analytical Research, Quantitative Research, Qualitative Research, Conceptual Research, Empirical Research etc. As per the title of the paper is concerned only major steps of designing thesis or research paper are discussed in the present paper.

MAJOR STEPS OF DESIGNING THESIS OR RESEARCH PAPER

There are certain steps of designing thesis and research paper. Researcher should consider these steps during the journey of research. The major steps are listed below;

1. Define Research Problem
2. Review of the Literature
3. Formulate Hypotheses
4. Design Research (Including sample design)
5. Collect Data (Execution)
6. Analyse Data (Test hypotheses if any)
7. Interpret and Report

The above listed steps indicate that the research process consists of a number of closely related activities, as shown through 1 to 7. But such activities overlap continuously rather than following a strictly prescribed sequence. At times, the first step determines the nature of the last step to be undertaken. If subsequent procedures have not been taken into account in the early stages, serious difficulties may arise which may even prevent the completion of the study. One should remember that the various steps involved in a research process are not mutually exclusive; nor they are separate and distinct. They do not necessarily follow each other in any specific order and the researcher has to be constantly anticipating at each step in the research process the requirements of the subsequent steps.

1. Define Research Problem

It is the first step to begin the journey of research. At this stage, the researcher must single out the problem he wants to study, i.e., he must decide the general area of interest or aspect of a subject-matter that he would like to inquire into. Initially the problem may be stated in a broad general way and then the ambiguities, if any, relating to the problem be resolved. Then, the feasibility of a particular solution has to be considered before a working formulation of the problem can be set up. The formulation of a general topic into a specific research problem, thus, constitutes the first step in a scientific enquiry. Essentially two steps are involved in formulating the research problem, viz., understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.

2. Review of the Literature

Once the problem is identified, a short and brief summary of the problem should be noted down on a page. It is necessary and compulsory for a researcher to submit a synopsis of the topic to the concerned committee or the department of the University for the Final Registration of the Ph.D. degree. At this stage, a researcher should go through the available literature of the same topic or field. For this purpose, the abstracting and indexing journals and published or unpublished bibliographies should be referred. Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to the study in hand should be carefully studied. A good library will be a great help to the researcher at this stage.
3. Development of Hypotheses

After extensive literature survey, researcher can build the hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. As such, the manner in which research hypotheses are developed is particularly important since they provide the focal point for research. They also affect the manner in which tests must be conducted in the analysis of data and indirectly the quality of data which is required for the analysis. In most types of research, the development of working hypothesis plays an important role. Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track. It sharpens his thinking and focuses attention on the more important facets of the problem. It also indicates the type of data required and the type of methods of data analysis to be used.

4. Design Research

Once the problem has been formulated, the researcher will be required to prepare a research design, i.e. Researcher will have to state the conceptual structure within which research would be conducted. The preparation of such a design facilitates research to be as efficient as possible yielding maximal information. In other words, the function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money. But how all these can be achieved depends mainly on the research purpose. Research purposes may be grouped into four categories, viz., (i) Exploration, (ii) Description, (iii) Diagnosis, and (iv) Experimentation.

The researcher must decide the way of selecting a sample or the sample design. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Various sample design are used in the different researches.

5. Collect Data (Execution)

Data collection is one of the important and inevitable steps in the process of the research. A researcher must be careful at the time of collecting data. He has to decide the method and means of data collection. i.e. What type of data does a researcher want for the study? From where and how can a researcher collect the data? Through which means does a researcher collect the data? Thus, a researcher can decide the method and means of data collection. If a researcher wants to generate the primary data, he has to design the questionnaire, observation, face-to-face meeting, telephonic interview, etc. In dealing with any real life problem, it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that are appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher.

6. Analyse Data

After the data have been collected, the researcher turns to the task of analysing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories. Coding operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted. Editing is the procedure that improves the quality of the data for coding. With coding the stage is ready for tabulation. Tabulation is a part of the technical procedure wherein the classified data are put in the form of tables. The mechanical devices can be made use of at this juncture. A great deal of data, especially in large inquiries, is tabulated by computers. Computers not only save time but also make it possible to study large number of variables affecting a problem simultaneously.

7. Interpret and Report

After data analysis, a researcher has to interpret the analysed data and finally, the researcher has to prepare the report of what has been done by him. Writing of report must be done with great care keeping in view the following:

i. The layout of the report should be as follows: (i) the preliminary pages; (ii) the main text, and (iii) the end matter.

In its preliminary pages, the report should carry title and date followed by acknowledgements and foreword. Then there should be a table of contents followed by a list of tables and list of graphs and charts, if any, given in the report.

The main text of the report should have the following parts:

a) Introduction: It should contain a clear statement of the objective of the research and an explanation of the methodology adopted in accomplishing the research. The scope of the study along with various limitations should as well be stated in this part.

b) Summary of findings: After introduction, there would appear a statement of findings and recommendations in non-technical language. If the findings are extensive, they should be summarized.

c) Main report: The main body of the report should be presented in logical sequence and broken-down into readily identifiable sections.

d) Conclusion: Towards the end of the main text, researcher should again put down the results of his research clearly and precisely. In fact, it is the final summing up.

At the end of the report, appendices should be enlisted in respect of all technical data. Bibliography, i.e., list of books, journals, reports, etc., consulted, should also be given in the end. Index should also be given specially in a published research report.

ii. Report should be written in a concise and objective style in simple language avoiding vague expressions such as 'it seems,' 'there may be,' and the like.

iii. Charts and illustrations in the main report should be used only if they present the information more clearly and forcibly.
iv. Calculated 'confidence limits' must be mentioned and the various constraints experienced in conducting research operations may as well be stated.

CONCLUSION

Thus, to conclude it can be said that the above-mentioned points and steps should be taken into consideration to design an ideal thesis or a research project. In any research almost all these steps are logically followed.

REFERENCES