Chapter-3
Research Design

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Chapter-3

Research Design

3.1 Introduction

Research is a purposeful process.

According to J.W. Best (1963),

Research is considered to be more formal, systematic, intensive process of carrying on the scientific method of analysis.¹

The value of research is determined on its possibilities, suggestions and extensiveness lying in the development of educational fields through its work method and inferences. A researcher has to maintain clarity and reasoning in the research work. Before conducting a research work a complete and suitable design is very essential. If the research design is appropriate and purposeful the research process becomes successful.

According to Desai, Pathak and Patel (1973),

Like other activities of life a researcher has to carefully plan a research design, because the research conducted without pre-considerations and preparation lose their goals and become more unrealistic and result in a more wastage of time energy and money.²

This chapter presents details about various things related to research design. It includes origin of subject, definitions of population, sample selection, research method, data collection and analysis methods.

3.2 Origin of the Research Problem

In research process, the first and foremost step happens to be that of selecting and properly defining a research problem. A
research problem, in general, refers to some difficulty which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same. The problem of the present research study is as under. We all know that self-concept is very essential factor for children. If their self-concept is high then they perform very well in any activity or task. Self-concept and academic achievement are closely related. Researcher reviewed so many literatures and found out that not enough research work has been done at Ph.D. level in Gujarat University in the subject of self-concept. Researcher himself is in the field of Education and academic administration. He has worked and experienced a lot in the field of SCE (School based Comprehensive Evaluation) that’s why he selected this problem to find out the relationship between self-concept and academic achievement among students.

3.3 Population

Unless the population is truly defined, it is not possible to draw inferences on the basis of the sample. If the population is not clearly defined one cannot decide which and what type of subjects should be selected.

If the whole population is covered in a research, the results are representative, precise and reliable and the possibility of errors to a longer extent becomes negligible.
According to Dipika B. Shah (2004),

**Population means a set of realistic or hypothetic people, events or things on which we wish to implement generalizations of the results of our research.**

Thus, all the subjects that are associated with events(problems) in a research become the population of the problem.

This study was conducted by keeping in mind the secondary school students so all the secondary school students of G.S.& H.S.E. Board are the population for the study.

### 3.4 Sample

For researches, the biggest question which arises is on whom should the research be conducted? In educational phenomena many subjects are involved and a researcher cannot visit and examine all the subjects and cannot even reach to the subject through inventory. Therefore sampling method is adopted. A sample of representative subjects is taken from the population and research process is carried out and the results are implemented.

According to Karliger (2004),

**Sample means a representative part of population.**

Therefore, sample is a sub-set of the units of population. In this study, the researcher had Selected 12 districts of Gujarat. After that he selected rural and urban area schools by stratified random sampling method. Researcher selected std-9th students by cluster sampling method. Five Urban area schools and five rural area schools were selected for the present study. Total 1830 students selected for present study. 930 boys and 900 girls became the
population of the study. Details of sample are given in the table given below:

<table>
<thead>
<tr>
<th>Sample of the study</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>Granted Schools</td>
<td>275</td>
<td>240</td>
<td>199</td>
</tr>
<tr>
<td>Self-Financed Schools</td>
<td>236</td>
<td>251</td>
<td>210</td>
</tr>
<tr>
<td>Total</td>
<td>511</td>
<td>491</td>
<td>409</td>
</tr>
</tbody>
</table>

3.5 Research Method

Before conducting a research a suitable method for the research is selected to solve the problem and to find out satisfactory reliable and useful results. The quality of research depends on method selection. A method is selected which is relevant in terms of research problem. The method should touch all the aspects of the problem. After precise clarification of the research problem, the researcher performs certain specific works for obtaining data suitable to the objectives of the study, which is called research method. There are many research methods such as,

1. Historical research method
2. Survey method
3. Rational study method
4. Developmental study method
5. Experimental research method
6. Causal-comparative method

“Research Methodology” involves systematic procedures starting from the initial identification of a problem to its final
conclusions. Its role is to carry on the research work in a scientific and valid manner. It involves such general activities as identifying problems, review of literature, formulating hypothesis, measurement, data collection and analysis of data interpreting results and drawing conclusion. It provides the tools and techniques for conducting a study.

The selection of the research method depends on the shape and type of the subject matter. The methodology is decided with reference to research or the type of inquiry. Therefore we can say that research method and subject both are interrelated. The present study is concerned; it comes under the preview of survey method.

Survey studies are conducted to collect detailed descriptions of existing phenomena with the intent of employing data to justify current practices or to make more intelligent plans for improving them. Survey are confined to gather all three types of information

- Data concerning existing status
- Comparison of existing status with the established status
- Means of improving the existing status while other are limited to one or two by these types.

It becomes necessary for a researcher to determine a research method on the basis of the form and type of the content of the study from the above stated research methods. Mostly, survey method is used to find out current situation in the fields of education and psychology.

In this study, Survey is conducted using a method by which responses of people, institutions, social events and current situation can be surveyed and data can be obtained. In this study, a survey is conducted with the help of a Self-Concept inventory to measure
self-concept of the students. Thus, the survey method is used keeping in mind the form and the type of content in the study.

3.6 Data Collection Tool

The quality of research depends on data and tool used in the research. If study conducted without collecting data suitable to the research, the study cannot succeed to make it complete, clear, transparent, realistic and useful. So the tool is selected accordingly. According to D.A. Uchat (2003),

A tool for collecting necessary data according to the objectives of the study is called research tool.5

In this study, a self-concept inventory was constructed and standardized by researcher to measure the self-concept in boys and girls of secondary schools students. The detailed description of tool development is given in chapter-4

Second tool used for this study for measuring students’ achievement is students’ result sheets of previous year i.e. of std 8th for their academic achievement.

3.7 Data Collection Method

Data will be collected from the students of standard-9 of secondary schools of urban and rural areas of different Districts. Firstly the prior permission from the principals of the concerned school was taken by the investigator by visiting personally. Data of the students were collected from the principals.

Then the investigator had made appropriate seating arrangement for the students of standard-9 and had given necessary instruction to the students. Then the copies of inventory were distributed to the students. The duration of 45 minutes was given to fill up the inventory. Certain queries were raised by the students
during filling up the inventories but they were explained and solved by the investigator. The inventories were collected from the students at the given time. They were thanked for their co-operation. Researcher also collected the school result of the previous academic year of the students who had appeared for filling up the inventories.

Thus, the data was collected from the schools one by one that were selected for the sample.

3.8 Data Analysis Method

The responses obtained from the students with the help of ‘Self-concept Inventory’ were of five types as there were five options for every statement. The marks allotted to negative statements for each of the five options were 5, 4, 3, 2, 1 respectively and the marks allotted to positive statements for each of the five options were 1, 2, 3, 4, 5 respectively. The students were asked to choose one of the five options against every statement and put a tick mark against the chosen option. Thus, all the students responded every statement. There were 60 statements in the final inventory and the scores obtained on the basis of the responses by the students ranged from 60 to 300. The scores obtained by the students were classified in terms of variables like gender, area and the type of school where the students are studying i.e. self-financed or grant-in-aided. Then the classified data was entered into “M.S. Excel” software of the computer and a frequency distribution accordingly to the hypotheses the mean standard deviation was found out. Moreover percentile was found out to know the level of self-concept in students. Thus, the data obtained through self-
concept inventory was analyzed. The detail of which can be seen in next chapter. Thus, the study design was implemented.

3.9 Conclusion

In this chapter researcher discussed different points like Population, Sample, Research Method, Research tool. Data Collection, procedure and data analysis method briefly.
Reference

4. Ibid, P-342.