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Base of research and research design

4.1 Introduction
The previous chapter dealt with summary of relevant studies held earlier. From reviewing such studies, the investigator has decided to work on Self Confidence scale. This chapter deals with research methodology.

4.2 Origin of the problem
The profession of a teacher is said to be the most respectable among all. The value and place of a teacher for a student is not less than God. In modern time, man becomes selfish and money oriented only and forgets his duties and responsibilities. In this situation there is a need to make the person aware about his self. Generally, in our system there is no requirement for the checking of self confidence of teachers. After reviewing the former studies, it was found that no any self confidence scale was prepared for teachers of Gujarat. So the investigator decided to construct and standardize the self confidence scale for teachers.

4.3 Definition of key terms
Construction:
According to L.P..Agarwal (2005), The first step in the construction of an adequate test is to have a full and clear understanding of the objective of the study and the nature of data needs.

Standardization:
According to Sonderson, “The establishment of uniform conditions for administrating a test and interpreting test result.”
According to Carter.V.Good, “Test standardized: A test for which content has been selected and checked empirically, for which norms have been established, for which uniform methods of
administrating and scoring have been development and which may be scored with a relatively high degree of objectivity.”

**Self Confidence Scale:**
Self confidence is the believing in you, to believe that one is able to accomplish what one sets out to do, to overcome obstacles and challenges. Self Confidence is having positive attitude and firm and belief in teacher’s own identity.
Self Confidence Scale is five points rating scale which will be able to do a systematic and detailed investigation of Self Confidence in teachers.

**Operational definition:**
Self confidence as the sum total of physical confidence, technological confidence, social confidence, psychological confidence, judgement confidence, readiness confidence, environment confidence, stage confidence, status confidence, and peer independence confidence.

**Teachers:**
One who teaches or instructs; one whose business or occupation is to instruct others; an instructor; a tutor. Who have the degree and ability to teach the children at primary, secondary and higher secondary level.

**4.4 Need of the study**
“**You have to have enough confidence in your ability, and then be tough enough to follow through.**” *Rosalynn Carter*
It’s a myth that most of the persons are confident. In fact, people who appear confident may still feel nervous inside. Self confidence is not something that child is born either with or without. Self confidence is not at all or nothing personality trait that child is stuck with for life. We are all capable of feeling more confident. Self confidence can be nurture and develop at any age by adopting new behaviour and strategies.
Imagine the plight of a boy who had a hearing problem and so could not understand teacher's instructions well. He was labelled a mentally weak child, who had no brains for studies and was
thrown out of the school! This child was none other than the great Thomas Alva Edison. Now would you agree with the school that he was dumb? How is it possible, then, for a dumb child to patent more than 1000 inventions – more than the collective patents of all the scientists of his time? The credit goes to his mother for not letting him lose his self-confidence. Such is the power of self-confidence that inspires people to achieve great feats.

Teachers are responsible for creating a safe, respectful, and caring school climate in which the students can be academically and socially successful. More and more, teachers are becoming a primary influence in children’s lives.

Twenty five years ago family structures were different, and teachers did not require the depth and variety of Social/emotional skills that are required of today’s teachers. Teachers today are not only educators, but therapists, parent substitutes, mentors, advocates, and more. So, it is necessary that teacher should have self-confidence. Self-confidence can be the vital passport to success in personal and professional life. Self-confidence enables an individual to take on new challenges, to trust him in difficult situations, to go beyond your perceived limits, to do things which have been never done before and to make full use of your natural talent and capability. Self-confidence gives courage not to worry about the consequences of failure. The hallmark of all truly confident teachers are that they can focus on preparing the good and confident citizen.

So, the present study will help in establishing relationship between various variables (gender, types of schools, boards of schools and category) and the level of self-confidence in teachers.

4.5 Objectives of the study
According to Bloom’s taxonomy (1956)
“Objectives are not only the goals towards which the curriculum is shaped and toward which instruction is guided, but they are also the goals that provide the detailed specification for the construction and use of evaluating techniques in the field of education.”

- To construct the self-confidence scale for the teachers of Gujarat.
- To standardize the self-confidence scale for the teachers of Gujarat.
- To study the self-confidence of the teachers of Gujarat.
- To study the effect of Gender of the teachers of Gujarat on their self-confidence.
- To study the effect of Types of schools of the teachers of Gujarat on their self-confidence.
• To study the effect of Boards of schools of the teachers of Gujarat on their self-confidence.
• To study the effect of Category of the teachers of Gujarat on their self-confidence.

4.6 Hypothesis of the study

According to John G. Best (1977)

“it is a shrewd guess or inference that is formulated and provisionally adopted to explain observed facts or conditions and to guide in further investigation.”

An investigator refers to the hypothesis to direct the thought process towards the solution of the research problem. It helps an investigator to collect the right kind of data needed for the investigation. A hypothesis is a conjectural statement of the relation between two or more variables. It is a tentative generalization, the validity of which remains to be tested.

Following are the hypothesis of this study:

• There is no significant difference between the mean scores of the self-confidence of the male and female teachers of Gujarat.
• There is no significant difference between the mean scores of the self-confidence of the teachers of Gujarat belonging to different types of schools.
• There is no significant difference between the mean scores of the self-confidence of the teachers of Gujarat belonging to different Boards of schools.
• There is no significant difference between the mean scores of the self-confidence of the teachers of Gujarat belonging to different categories.

4.7 Importance of the study

Gandhi's self-confidence worked and his country was freed. Whether it is a patriot defending his country's border, a swimmer giving all to get the medal for his country, a musician performing to a packed hall, a child reciting poem to her class, a fire-fighter struggling to save people, they all have something in common which makes them stand apart from other people. These people have an “I can” attitude towards life. They are full of self-confidence.
The present study is important in the context of deteriorating standard of quality education and social values which is of major concern for all of us. One of the reasons for this grim scenario is assumed to be because of lack of self-confidence both in teachers and students. The self-confidence in students can be developed by the teachers. So, this study enable to know and understand the self-confidence of the teachers in relation to gender, granted and non-granted schools, boards (CBSE and GSEB) of schools and categories (Open and Other).

4.8 Limitation of the study
Each and every research has its own limitation. So the researcher has to delimit the problem under investigation up to a certain extent, otherwise it is not possible to control all the factors involved in it. Following are the limitations of the present study:

- This study is limited to English medium school teachers only.
- This study is limited to the teachers of the schools affiliated to GSEB and CBSE Board only.
- This study is limited to the teachers of Gujarat only.

4.9 Variables of the study
Variable means to vary, change, not constant. Mainly there are five types of variable such as independent variable, dependent variable, moderate variable, control variable and intervening variable.

“A variable is any condition in a scientific investigation which may change in quantity or quality.”

Independent variables are gender, category, and types of school and boards of schools.

Dependent variable is self-confidence in this study.

4.10 Research methodology
4.10.1 Population of the study
Population is the larger group from which individual are selected to participate in a study.
According to B.R. Walter (1985), ‘‘Population means the aggregate or the totality of objects or individuals, regarding which inferences are to be made in a sampling study. It means all those people or documents etc. who are proposed to be covered under the scheme of the study.’’

According to S.P. Sukhia and Mehrotra (1976), ‘‘Population means the well defined class of people phenomenon or objects.’’

Therefore, population is an important part of each research. It is the group to which the researcher is interested in conducting research. Like, it can be objects, educational institutions, time units, geographical areas, prices of wheat etc. Some statisticians call it universe.

So, the investigator has decided to prepare self confidence scale for the teachers. The population of the present study consists of teachers of English medium schools of Gujarat.

4.10.2 Sample selection of the study

Most of the educational phenomenon consists of large number units. It would be impracticable or not possible; to test, to interview or observe each unit of the population under controlled conditions in order to arrive at principles having universal validity. Some populations are so large that their study would be expensive in terms of time, effort and man power.

A sample is a small proportion of a population selected for observation and analysis. It is a collection consisting of a part or subset of the objects or individuals of population which is selected for the express purpose of representing the population. By observing the purpose of the characterization of the sample, one can make certain inferences about the characteristics of the population from which it is drawn.

In short, a sample is representative and also a small part of the population which can be selected for observation and analysis.

According to K.S. Siddhu, ‘‘A sample is a small proportion of a population selected for observation and analysis.’’

According to K.S. Fox, ‘‘In the social sciences, it is not possible to collect data from every respondent to our study but only from some fractional part of the respondents. The process of selecting the fractional part is called sampling. Sampling design means the joint procedure of selection and estimation.’’
Sampling is the process of selecting the number of individuals for all study in such a way that the individuals represent the large group from which they were selected. The individuals selected comprise a sample and a large group is the population.

4.10.3 Methods of sampling
Mainly there are two types of sample designs or two methods of sampling

(1) Probability sampling
(2) Non-probability sampling

Probability sampling
Probability sampling normally deals with the selection of the elements from the finite population with equal chance or probability of the selection, for each element of the population as a sample. Method of sampling which gives the probability that our sample is representative of population is known as probability sampling. Probability sampling is generally used in fundamental research in which the purpose is to generalize the results.

Non probability sampling
If there is no such idea of probability then the method of sampling is known as non-probability sampling. Non probability sampling plans are those that provide no basis for estimating how closely the sample characteristics approximate the parameters of the population from which the sample was obtained. It is generally used in Action Research in which one studies a class without any generalization purpose.

Probability and non probability sampling are further classified in to the following techniques.
### Sample design

<table>
<thead>
<tr>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability Sampling</td>
</tr>
<tr>
<td>Non-probability sampling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Probability Sampling</th>
<th></th>
<th>Non-probability sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Simple random sampling</td>
<td>1</td>
<td>Convenient sampling</td>
</tr>
<tr>
<td>2</td>
<td>Systematic sampling</td>
<td>2</td>
<td>Judgement sampling</td>
</tr>
<tr>
<td>3</td>
<td>Stratified sampling</td>
<td>3</td>
<td>Purposive sampling</td>
</tr>
<tr>
<td>4</td>
<td>Multistage sampling</td>
<td>4</td>
<td>Quota sampling</td>
</tr>
<tr>
<td>5</td>
<td>Cluster sampling</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the present study the researcher has used Cluster Multistage Sampling under probability sampling method as the sample selected through this method are more comprehensive and representative of the population.

**4.10.4 Cluster Multi stage Sampling**

The sampling method whereby the samples are selected randomly from the final stage of the different stages of the population is called multistage sampling. Under this method the random selection is made of primary, intermediate and final units from a given population. Thus, the area of investigation is scientifically restricted to a small number of ultimate units which are representative of the whole.

In it the primary sample units are inclusive groups and secondary units are sub groups within these ultimate units to be selected which belong to one and only one group. When the stratification is done by the researcher stages of a population are usually available within a group or population. The individuals are selected from different stages for constituting the multistage sampling. The samples are selected from the last group which covers all the related variables which makes it cluster multistage sampling.

**4.10.5 Merits of Cluster Multistage Sampling**
• It is comparatively less time consuming and less expensive method.
• It is good representative of the population.
• It is an improvement over the other
• It is an objective procedure of sampling
• Its observation may be used for inferential purpose.

So, investigator has selected this technique for data collection.

4.11 Sample for piloting

The investigator selected Sri Mirambika school, Podar International School and Nishkal school’s teachers for piloting. The sample is presented in following table:

### Table 4.11
Sample for piloting

<table>
<thead>
<tr>
<th>School’s name</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shri Mirambika school</td>
<td>05</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Podar International school</td>
<td>06</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Nishkal school of thoughts</td>
<td>04</td>
<td>06</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td>35</td>
<td>50</td>
</tr>
</tbody>
</table>

Thus, investigator selected 50 samples by multistage sampling technique.

4.12 Sample for final run

The investigator selected 1000 teachers for final run in this study.
### Table 4.12
Sample for final run

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granted</td>
<td>175</td>
<td>185</td>
<td>360</td>
</tr>
<tr>
<td>Non granted</td>
<td>163</td>
<td>477</td>
<td>640</td>
</tr>
<tr>
<td>Total</td>
<td>338</td>
<td>662</td>
<td>1000</td>
</tr>
<tr>
<td>CBSE</td>
<td>85</td>
<td>115</td>
<td>200</td>
</tr>
<tr>
<td>GSEB</td>
<td>253</td>
<td>547</td>
<td>800</td>
</tr>
<tr>
<td>Total</td>
<td>338</td>
<td>662</td>
<td>1000</td>
</tr>
<tr>
<td>Open</td>
<td>90</td>
<td>194</td>
<td>284</td>
</tr>
<tr>
<td>Other</td>
<td>248</td>
<td>468</td>
<td>716</td>
</tr>
<tr>
<td>Total</td>
<td>338</td>
<td>662</td>
<td>1000</td>
</tr>
</tbody>
</table>

### 4.13 Research methodology

Research is a purposeful, precise and systematic search for new knowledge, skills, attitudes and values for the reinterpretation of existing knowledge, skills, attitudes and values.

According to **R.A. Sharma** (2007), “Methods refers to the formal structure of the sequence of acts commonly denoted by instruction.”

The research method which we follow should directly connect to the problem statement and goal of research. “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 scientific and valid manner. It involves such general activities as identifying problems, review of literature, formulating hypotheses, procedure for testing hypotheses, measurement, data collection, and analysis of data, interpreting results and drawing conclusions. 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 enquiry. Therefore, we can say that research method and the subject matter both are interrelated. In the present study survey method is used.

4.13.1 Survey Method
Survey method 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.

The term survey has two constitutes ‘sur’ or ‘sor’ which means to see. Accordingly the word survey means ‘to look over’ or to see and this is precisely what we understand by survey in social text; observation is the main thing in survey.

According to **S.P. Sukhia** (1976), “The survey approach at educational problem is one of the most commonly used approaches. It is followed at studying local as well as state, national and international aspects of education. It goes beyond more gathering and tabulation of data. It involves interpretation, comparison, measurement, classification, evaluation and generalization all directed towards proper understanding and solution of significant educational problem.”

According to **J.C. Aggrawal** (1983), “Survey has its usefulness both in leading to the formulation of hypotheses and at a more advance stage in pointing them at the best. Their function in a given research depends on how much is already known about the subject and on the purpose for which the information is required.”

4.13.2 Advantages of survey method
- Surveys are relatively less expensive.
- Useful in describing the characteristics of large population. No other method of observation can provide this capability.
- They can be administered from remote locations using mails, email or telephones.
- Many questions can be asked about a given topic giving considerable flexibility to the analysis.
• Very large samples are feasible making the results statistically significant even when analyzing multiple variables.

**Surveys are chiefly used or applied to gather the following 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.

Hence, considering all the aspects of Survey Method, the investigator found this method appropriate for the present study. Therefore, Survey Method was selected which was limited to Gujarat.

**4.14 Research design**

The task should be carried out as per plan for better and scientific results. The investigator designed the task before the actual task began. The research study was divided in two parts, the construction and standardization of the self confidence scale of teachers and to study the self confidence of teachers of Gujarat.

On the basis of the results obtained from the pilot testing, 100 statements of 10 different areas were selected and arranged. Than the final form of the scale was administered on the teachers. Present study was conducted to study the relationship or difference of some variables with self confidence. Gender (male and female), granted and non granted schools, open and other category and boards (CBSE and GSEB board) of the school wise consider as independent variables. Total 4 hypotheses were framed for studying the influence of four independent variables on the dependent variable.

**4.15 Tool of the study**

A researcher will require many data gathering tools or techniques which may vary in their complexity, design, administration and interpretation. Each tool is appropriate for the collection of certain type of evidence or information. The instruments that are employed to gather new facts or to explore new fields are called ‘tools’.
It is of vital importance of select suitable tools. Different tools are suitable for collecting different type of data. The use of a particular research tool depends upon the type of a research. The following tool was prepared and used for collecting the data of the present study: “Self Confidence Scale of Teachers”

For collecting the necessary data and find out the relation between independent variables and dependent variable, Self Confidence Scale was constructed and standardized.

4.16 Procedure and data collection:

The data collection is the most important stage in research study. In standardization of the test, the data collection was made at three levels as pre try out, pilot and the final form (the final run of the test) when the constructed

- The draft scale was sent to the expert of the education fields for reviewing the scale and their suggestions as pre pilot tryout. Their suggestions were incorporated before the draft prepared for the pilot tryout to be developed.
- The pilot tryout was carried out on a sample of 50 teachers. The analysis of their responses pinpointed some flows in the wording of instructions, statements and the arrangements of statements. This was modified and the final form was prepared.
- After the scale was constructed, it was found ready for its administration. As a general procedure, in the process of standardization of a scale.
- The resulting tool of the pre pilot testing known as the pilot try out version of 12 areas comprising 112 statements was administered on 50 teachers.
- Thus, the final form of 10 areas comprising 100 statements was prepared, got printed and was administered on a representative sample of 1000 teachers of Gujarat state.

After completion of sampling procedure, the investigator had written a letter to all the principals of schools, selected for the sample. They were informed about the objectives and importance of the study. A request was made for their co-operation in the process of data collection. The investigator personally visited the school on the date and time given by principals.

The investigator explained the importance and provided necessary instructions to the teachers. Then the investigator distributed the scale. Then the teachers were told to fill up the personal details. It was observed that the teachers started responding only after gaining the full knowledge/information of the manner of responding. The teachers were allotted 25 to 30 minutes
to fill the responses or they can take unlimited time. In this way the self confidence scale was administered.

4.17 Classification of data

All the self confidence scales were scored. Gathered data were classified according to variables such as gender, types of schools (granted and non-granted), boards of schools (CBSE and GSEB board), and category. Thus the obtained data were classified, necessary statistics were applied, data were analyzed, hypothesis were tested and on the basis of the obtained results, the difference and co relation between some groups were found significant and non significant. Hence, norms were computed and established.

4.18 Statistical techniques used

- The result obtained after the administration were useful in establishing reliability and validity. Norms were established while data were computed for measuring the self confidence with independent variables.
- The reliability was established with the help of Cronbach alpha method. It was $\alpha 0.91$. The validity was established using the criterion validity. It was 0.60.
- For the testing of hypothesis, the investigator calculated mean, S.D. and t value of all the respondents and co relation was found out.

4.19 Conclusion

Thus, in this chapter the investigator discussed about the significance, research methodology, and content for scale, scale length, statements and the weightage of the present study. The next chapter deals with the construction and standardization of the scale.