Toward Conclusion of the Research Study: Data Collection and Methodology

Dr. Mahmud Khan

Muzaffarpur Sanskriti University, Mathura (Uttar Pradesh)

Mohd. Saiph

Research Scholar

Muzaffarpur Sanskriti University, Mathura (Uttar Pradesh)

Abstract:

Research is an endless pursuit of knowledge as well as an endless pursuit of truth. Research is considered a more formal, scientific and intensive process to advance the scientific method of analysis. The best research is the one that is reliable, verifiable and exhaustive. The format of any research is the most important part of it which enables the researcher to collect data from the situation and the observed system of observation and helps in obtaining accurate answers to the questions. It is a conceptual framework within which research is conducted. It determines the plan for measurement, data collection, and analysis. Good research planning is also related to the purpose of the research problem and the nature of the problem to be studied.

Important words: Research-planning, verification, observation, structure, research, scientific, objective, rational, analysis, study.

Research is an endless pursuit of knowledge as well as an endless pursuit of truth. It brings to light new knowledge or corrects past errors and misconceptions and integrates it systematically into the existing stock of knowledge. The knowledge gained by research is scientific and objective and is subject to rational understanding, general verification and experience.

Research is considered a more formal, scientific and intensive process to advance the scientific method of analysis. It involves a more systematic structure of investigation. Research generally results in a formal record of the research process and a report of the results or findings.

Research is the honest and knowledgeable exploration of facts and their implications in the context of a problem. It is a process of arriving at reliable solutions to problems through planned and systematic collection, analysis and interpretation of data. The best research is one that is reliable, verifiable, and exhaustive so that it provides information we have confidence in.

After defining the topic of research, preparation of research design is an important task. In relation to the study of the research topic, what, where, when, how much, through which decision etc. is helpful in determining the type of research.

The format of any research is the most important part of it. In fact, research design is a plan, which enables the researcher to collect data from the circumstances and observed system of observation and helps in getting accurate answers to the questions raised in the research. This eliminates the possibility of getting an alternative answer. It involves a system of neutralizing all factors affecting the validity of a research result. Research design is a conceptual structure within which research is done. It determines the plan for measurement, data collection, and analysis. Thus, planning includes an outline of how the researcher will arrive at the result from the writing of the hypothesis to the final analysis of the data.

A good research plan has characteristics like flexibility, suitability, efficiency, economy etc. Increasing the reliability of the collected data by reducing bias is often a quality of a good research plan. The research plan which gives minimum experimental error is considered as the best. Thus, good research planning is also related to the purpose of the research problem and the nature of the problem to be studied. Therefore, suitable research plan should be developed for the study.

The research process includes the method of research and popular definitions of the various terms used. Techniques according to the research problem have been used in determining the applications for the study and in the selection of equipment for data collection.

Research Method

The most commonly used method is the descriptive or standard survey method of educational research. It is the method of research that attempts to describe and explain the existing factors in the form of current conditions, practices, processes, trends, influences, attitudes, beliefs etc. It is an organized effort to analyze, explain and report the current status of a social institution or group of a region. Therefore, this method is chosen to identify the problems of adolescents and the impact of parenting styles on their academic achievement.

Variables of Study

Variables are an essential requirement for any meaningful research for the purpose of comparison. The main variables considered for the present study include parenting style as dependent variable, i.e. excessive parenting, normal care and low-care, and adolescent

problems and their problems as independent variables. Academic achievements are taken. This method is chosen to identify the effect of lilies.

Sampling

After finalizing the variables, consideration was given to whether the entire population was to be the subject of data collection or a particular group was to be selected as representative of the entire population. Entire Population means the students of class XI (Boys and Girls of the age group 15 years) studying in schools recognized by the Bihar School Examination Board, Patna and Central Board of Secondary Education, New Delhi of Muzaffarpur city. In the present study, multilevel random sampling technique has been used to select the subjects from the entire population.

Initially a total of 800 male and female students of class XI studying in Muzaffarpur city schools recognized by Bihar School Examination Board, Patna and Central Board of Secondary Education, New Delhi were selected.

In the light of this list, the Headmasters of the respective schools were contacted to know the number of students studying in class XI. Thus 800 students were selected from different schools in which 400 were boys and 400 were girls. The Family Relationship Inventory (Dr. G. P. Sherry) was administered on the selected students. This work was done as a cluster. Whichever was the highest score in both male and female adolescents became the study subjects as shown in Table 1.1 below:

Table No. 1.1 Format of Study

Sample	Excessive Care	Normal Care	Low Care
Boys	40	40	40
Girls	40	40	40

Tools of Study

Research tools are an important factor in collecting data from the subjects and drawing accurate conclusions about the research problem. The findings thus obtained ultimately help in providing suitable remedial measures for the concerned problem.

Tools can be selected and used in two ways. The first is for the researcher to independently build an instrument for his own study. Second, appropriate equipment should be selected from the already standardized tools available in the area of study. Thus, standardized questionnaires have been used in the present study.

1. Family Relationship Inventory created by Dr. G. P. Sherry

The Family Relationship Questionnaire was used to determine the type of parenting style of the subjects' parents based on their level of care, i.e. excessive, normal or low care.

Thus, a decision was taken about the method of classification of students and 800 students of class 11th taken from different schools of Muzaffarpur district were given Family Relationship Inventory (FRI) prepared by Dr. G. P. Sherry. There are 150 questions in this questionnaire.

While collecting data by this method, care was taken that the subjects fully understood each condition and response categories. To do this (according to the instructions in the test manual) the investigator was required to memorize the entire questionnaire and describe each situation in a natural way. The investigator had the freedom to explain the questions to the subjects and record their responses. But the responses of the users were recorded only when they understood the questions well and recorded their response.

Administration of the Family Relations Inventory

Inspired by many modern research suggestions, a rapport should be established between the researcher and the applicants to get accurate and honestly expressed feedback from the users. Questionnaires were distributed to the subjects following the general guidelines of the Family Relationship Inventory (FRI). They were also encouraged to clear any doubts. The subjects from different schools were seated quite apart from each other in the classrooms. After these initial formalities, applicants were asked to start by providing their resume and answering the required questions as given on the cover page of the questionnaire. Thus the operation of the questionnaire was supervised with the help provided by the schools. In the course of the conduct of the tests, care was taken to ensure that all the applicants completed the questionnaire along with their resume in all respects as per the specific instructions. After this the booklets were collected after checking them thoroughly. Finally, each student was thanked for their cooperation. The same procedure was followed in the case of the second stage students also.

Scores of Family Relationship Inventory

The next step (III) after the conduct of the questionnaire on the entire population of the users i.e. 800 adolescents (400 boys and 400 girls) of different schools of Muzaffarpur district was to determine the scores for the response obtained on the test. One mark is awarded for any correct answer checked by the applicants as (✓). The total score for each question was first written on the first page of the questionnaire according to the type of parenting style, i.e. highly caring, normal caring, low caring. The scores for each test were the total scores of the subjects.

Identifying students with different parenting styles

Since one of the objectives of the research was to identify children according to parenting styles, it was considered appropriate to

divide the entire sample of 800 students into three categories according to parenting styles. Thus, the scores of boys and girls of both the categories of the subjects were analysed. Those with the highest scores in the Family Relationship Inventory (FRI) were marked. In this process of classification, only 240 students (120 boys, 120 girls) out of 800 appeared in the list.

2. Student Problem Inventory by Dr. Harkant D. Badmi

Modern education system emphasizes on understanding of each student. To understand a student it is necessary to know his immediate and real problems. The Student Problem Inventory is a simple and systematic tool for identifying student problems that helps students articulate those problems. This questionnaire can be used for group guidance, counseling interviews, better understanding of students, mitigating students' problems and research work. The problems included in the list are mainly based on independently listed statements of problems by the students of all the faculties i.e. Science, Arts, Commerce. There are total 265 questions in this list.

The Student Problem Inventory collects data related to the problems faced by students in the following key areas:

(a) Physical health and fitness

(b) Self image

(c) Economic and physical facilities

(d) Friendship, marriage and sex

(e) Family

(f) Social

(g) Educational

(h) Professional

(i) Tradition, Morality and Religion

Administering and Scoring the Student Problem Inventory

This list is self-administered. It can be administered to a single student or a group of students. It takes at least 60 minutes to complete. There needs to be a good synergy between the person administering this inventory and the respondents. The information collected in this way is considered highly confidential.

Inventory yields two types of scores - the first counts the number of problem-statements each student has checked and the second is problem-frequencies that count the number of students in a particular group who have checked each problem-statement. There is no right or wrong answer for the problem-statements. The students' score is the number of problem-statements marked by them.

3. Academic Achievement

In this age of tough competition, it is the performance of the students on the basis of which they are categorized as good or weak, sharp intelligence or normal intelligence, which decides their fate later. Therefore it becomes important to perform well in all walks of life, especially in examinations, to progress in life. The success achieved by a person through his efforts in his field of work is called achievement.

People achieve achievement in various fields such as academics, sports, economics, politics, achievement in the form of academic knowledge or skills developed in school subjects. This achievement can be in line with the merit list prepared on the basis of the list of specified marks after checking by the teachers.

Achievement tests are used to measure the nature and extent of students learning in a particular subject. In different situations of life, there are different criteria to measure achievement. In the present study, the marks obtained by the students in the 10th examination is considered as their achievement.

Data Collection Process

The data collected in Phase I and II were analyzed and interpreted with the help of appropriate statistical tools. Firstly The Family Relationship Inventory created by Dr. G. P. Sherry was administered to 800 students selected from different schools as per prescribed preparation. The purpose of administering the Inventory was to find out from a population of 800 students whose parents are classified into different parenting styles. Points were awarded to each student by checking the pooled Family Relationship Inventory filled out by the student population. The students were classified in descending order of the scores of the questionnaire. The 240 students who got the highest marks in the test of the questionnaire were separated. Out of 240 students, there were 120 boys and 120 girls. These students were from families adopting different parenting styles. Thus 240 students became the subject of study. The Students Problem Inventory (SPI) prepared by Dr. Harkant D. Badami was administered. Points were assigned to the responses received from students for the statements in the Student Problem Inventory and the mean and standard deviation of the scores obtained were ascertained. Thus, the statistical technique of analysis of variance (ANOVA) was used to determine the relationship between parenting styles and adolescent problems.

Statistical Techniques Used

To achieve the study objectives and test the hypotheses, the mean, standard deviation, ANOVA and Duncan's Range Test are used. The test was used for statistical analyses.

(1) Mean

It is usually taken as the arithmetic average. It is calculated by dividing the sum of all the digits by the number of digits.

$$M = \frac{\Sigma x}{N}$$

M = Mean

x = Marks obtained

Σ = Sum of marks scored

N = Number of marks scored

(2) Standard Deviation

It is used as a measure of the spread of points in a distribution.

Authentic Deviation (S. D.) = $\sqrt{\frac{\Sigma x^2}{N}}$

Analysis of Variance

The significance of the difference between the means of two samples can be assessed by means of 't' test. However, these techniques were not found useful in the course of testing the hypotheses in relation to the present study.

Basic Principles of ANOVA

The analysis of variance (ANOVA) technique enables us to perform this test simultaneously. Using this technique, it can be concluded whether the samples are drawn from a population with the same mean or not.

ANOVA technique is useful in context of all those situations where we want to compare more than two groups. Such as comparing the smoking habits of five groups of university students. In such circumstances, it generally appears difficult not to consider all possible combinations of the two groups at a time and a large number of trials would be required to reach a decision. This process will also cost a lot of time and money, and even then some aspects may remain unknown. In this situation, the ANOVA technique proves to be very useful and through this the difference between the means of all the groups can be checked simultaneously.

'ANOVA' is essentially a procedure to test the difference between inter-groups of data for homogeneity. The essence of ANOVA is that the variance data is analyzed by splitting it into two parts. Therefore, ANOVA is a method of analyzing variance for which the response corresponds to the sources of variation in its various components. Thus, through this technique, the factors affecting the hypothesized or dependent variables can be checked. Differences between different categories can also be checked within each factor, which can have a large number of possible values. ANOVA is also used to examine the differences between a single factor and its various categories with multiple possible values.

The basic principle of ANOVA is to test the difference between the means by checking the amount of deviation. In examining population means, we assume that the difference between the mean and the mean and the mass mean of the major term of the population is called a distinguishing factor. This is technically described as a computed effect. Thus while using ANOVA, we assume that each sample is drawn from the general population and each population has the same deviation. We also believe that all factors for testing have been effectively collected and that all factors that could affect the conclusion of the study have been removed.

Duncan Range Test:- This test was used to find the significance of the difference between the groups after the overall 'F' value. To indicate the importance and direction of the differences, DRT was implemented. It is capable of checking the difference between more than two means at the same time. Administration of DRT is useful to obtain more information through the use of T-test with less labor or time spent.

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