Chapter III

Methodology

The investigation's methodology is crucial because it decides the standards used in the investigation. The current study examines the connection between secondary school pupils' mathematical achievement and emotional intelligence. The use of the proper procedure, tools, pertinent data collection, and statistical techniques is necessary for the testing of hypotheses.

In a research or piece of work, methodology is the systematic and sequential process that must be followed. It is based on a well-defined plan of action. It serves as a manual to help the researcher gather and analyze data in a meaningful way.

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In research, a method is a set of sequential steps used to study an issue with predetermined goals. They outline the various stages in the plan of attack to be used in solving research problems, including the formulation of the problems, the definition of terms, the selection of the investigation's topics, the gathering, analysis, and generalization of data.

The technique used affects the findings' validity and dependability as well. An appropriate methodology aids the researcher in exploring the various study standards and measuring them correctly to meet the requirements. It is therefore a means to a goal.

In this chapter, the investigator gives a description about the methodology followed in order to study Self- Efficacy in Relation to Spiritual Intelligence and Emotional Intelligence Among Prospective Teachers at Secondary Level.

3.1 METHOD ADOPTED FOR THE STUDY

For the current study, the researcher chose the survey method from a variety of approaches, including the history method and experimental method. Surveys are frequently conducted to determine what constitutes a normal or typical practice situation.

When researching local, state, national, and foreign aspects of education, a survey approach to educational issues is used. It extends beyond data collection and analysis. In order to properly comprehend and address significant educational problems, it includes interpretation, comparison, measurement, classification, evaluation, and generalization. (Sukhia 1963).

The methodology chosen for the investigation of the subject under inquiry should be appropriate. It must conform to scientific principles and be sufficient to support reliable generalizations. The main objective of the present study is to find out the Self- Efficacy in Relation to Spiritual Intelligence and Emotional Intelligence Among Prospective Teachers at Secondary Level. For this, the investigator adopted Survey method. It is the approach to study that has received the greatest scientific attention. It is described as being observed under supervised circumstances.

3.3VARIABLES IN THE EXPERIMENT

Variables are the conditions or characteristics, the investigator manipulates, controls or observes.

VARIABLES

EMOTIONAL

INTELLIGENCE

SPIRITUAL

INTELLIGENCE

SELF- EFFICACY

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3.4 SAMPLE SELECTED FOR THE STUDY

The researcher selected sample from different B.Ed colleges in Ernakulam district. Sampling describes the method of making such a decision. The investigator chose random sampling among 300 prospective teachers at secondary level in Ernakulam district and study's nature.

Sample Selected for the Study

The main goal of study is to identify universally applicable principles. However, it would be impractical to study a whole community in order to draw generalizations. Therefore, a representative sample of the prospective teachers at secondary level is used for research. A sample is a small part of a population that has been chosen for observation and analysis, according to Best (2003). 300 prospective teachers at secondary level in Ernakulam district were randomly selected by giving due representation to Gender (Boys/Girls), Locality (Urban Rural) Type of Management of colleges (Government/Aided) are given in table 3.1.

 3.4.1 Sample Size

The identical sample is small enough to be chosen economically in terms of subject availability, cost in terms of both time and money, and complexity of data analysis while being large enough to serve as an adequate representation of the population that the researcher desires to generalize. Best (2003). The sample for the study constituted Prospective Teachers at Secondary Level from Ernakulam district .The total sample consist of 300 Prospective Teachers at Secondary Level.

 TABLE 3.1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sl no. | Name of the College | Locality | Type of Management | No. of Girls | No. of Boys | Total no. of Students |
| 1.2.3.45. | St.Joseph College of Teacher Education for Women, Ernakulam.Adi Sankara Training College, Kalady Nirmala Training College,Thalacode.S.N Training College, OkkalSt. Xavier’s Training College, Aluva | UrbanRuralRuralRuralUrban | AidedUnaidedUnaidedUnaidedUnaided | 2001510 15 20  | 40 | 20015501520 |
|  |  |  |  |  |  | 300 |

3.5 TOOLS USED FOR THE STUDY

For research to be effective, choosing the right tools is crucial.

The precision of the assessment has a significant impact on evaluation effectiveness.

The precision of the device in turn determines the measurement's accuracy.

A tool is described as a way to gather proof. The researcher carefully chose tools to assess the various variables.

To acquire the required data or evidence, the researcher will need a variety of data collection tools. The instruments that were chosen would produce the data needed for hypothesis testing. Tools are the various devices used in tandem to investigate new areas. The following resources were used by the researcher in the current study to gather the required data.

1. Self- Efficacy Scale developed by Singh and Narain, 2014
2. Spiritual Intelligence Scale
3. Emotional Intelligence Inventory

The details of the tools are given below

* + 1. Self- Efficacy Scale

Self-efficacy is the conviction that one can carry out a task or accomplish an objective. It includes a person's self-assurance in their ability to manage their behavior, have an impact on their surroundings, and remain motivated in the chase of their objective. Self-efficacy is a trait that people can possess in a variety of contexts and domains, including relationships, employment, and other crucial areas.

Self-efficacy is crucial because it affects how you perceive yourself and whether or not you succeed in reaching your life's objectives. Albert Bandura's social cognitive theory, which stresses the function of observational learning, social experience, and reciprocal determinism in personality development, is centered on the idea of self-efficacy.

Self-efficacy, in Bandura's view, is a component of the self-system, which also includes one's dispositions, capacities, and cognitive abilities. This system has a significant impact on how we view and react to various situations. An important component of this self-system is self-efficacy.

Albert Bandura defined self-efficacy as "the confidence in one's abilities to organize and carry out the courses of action necessary to manage potential situations." Self-efficacy is the conviction that one can achieve in a specific circumstance. These ideas influence how individuals think, act, and feel.

There are 20 statements regarding to the Self- Efficacy. Each statement has five possible modes of responses such as strongly agree, agree, neither agree or disagree, disagree and strongly disagree. There both positive and negative statements. Then a score of 1 to 5 is given to the responses and the score of each statement ranges between 1 to 5 strongly agree, agree, neither agree or disagree, disagree and strongly disagree for negative statements and in the reverse order for positive statements. Total score for Self –Efficacy is obtained by adding the scores of 20 statements.

This Self- Efficacy Scale was developed by Dr. Arun Kumar Singh and Dr. Shruthi Narain in 2014. Reliability Coefficient using test re-retest method = 0.82. Reliability Coefficient using split half method = 0.74. Concurrent validity = 0.92.

* + - 1. Dimensions of Self- Efficacy Scale.

The items for Self- Efficacy Scale were drawn for the major dimensions to measure the Self- Efficacy among Prospective Teachers at Secondary Level. A brief description of factors are given below.

* Self Confidence

An attitude of self-confidence in our talents and skills. It implies that we feel in charge of your life and that we accept and trust ourselves. We have a favorable opinion of yourself and are aware of our strengths and weaknesses. You can handle criticism, communicate assertively, and establish reasonable standards and goals.

* Efficacy Expectation

An efficacy expectation is a person's belief that they can successfully carry out the behavior necessary to create a specific outcome, whereas an outcome expectation is a person's expectation that a particular behavior will result in a specific outcome.

* Positive Attitude

Being optimistic about circumstances, relationships, and oneself is what is meant by having a positive mindset. Even in the most challenging circumstances, those with positive dispositions maintain optimism and see the best.

* Outcome Expectation

Personal beliefs about how a particular action will affect achieving a specific result are known as outcome expectations. The main factor considered to be significant in deciding to alter behavior is outcome expectations. (i.e., the motivation phase). Positive (pros, such as "If I exercise five times a week, I will reduce my cardiovascular risk") and negative (cons, such as "If I exercise five times a week, I will have less time to hang out with my friends") outcome expectations are both possible.

The table given below shows, the distribution of items according to dimensions.

 Table 3.2

The factorial wise Analysis of Self -Efficacy

|  |  |  |
| --- | --- | --- |
| Dimensions | Item Number | Total Items |
| Self Confidence | 1,2,3,4,5,7 | 6 |
| Efficacy Expectation | 6,8,9,10,12 | 5 |
| Positive Attitude | 11,13,16,19 | 4 |
| Outcome Expectation | 14,15,17,18,20 | 5 |

* + 1. Spiritual Intelligence Scale

The ability to contemplate life's fundamental purpose and the interconnectedness of oneself with one's environment is referred to as spiritual intelligence. As a consequence, people experience an improvement in their psychological health and have a life goal.

Wisdom, compassion, integrity, joy, love, creativity, and serenity are some of the traits and abilities of the true self (or the soul), which are activated by spiritual intelligence, which is a higher dimension of intelligence. Spiritual intelligence leads to an increased level of critical life and work skills as well as a sense of greater meaning and purpose.

In the present study the investigator selected 60 statements among 65 statements after the experts’ opinion Final draft was made with 60 statements with positive and negative statements.

There are 60 statements regarding to the Self- Efficacy. Each statement has five possible modes of responses such as always, often, sometimes, rarely, never. There both positive and negative statements. Then a score of 1 to 5 is given to the responses and the score of each statement ranges between 1 to 5 strongly agree, agree, neither agree or disagree, disagree and strongly disagree for negative statements and in the reverse order for positive statements. Total score for Spiritual Intelligence is obtained by adding the scores of 60 statements.

* + - 1. Dimensions of Spiritual Intelligence Scale

The items for Spiritual Intelligence Scale were drawn for the major dimensions to measure the Spiritual Intelligence among Prospective Teachers at Secondary Level. A brief description of factors are given below.

* Self- Awarness: Knowing what I believe in value, and what deeply motives me. The statements 1-5 measure this factor of Spiritual Intelligence.
* Spontaneity : Living in and being responsive to moment. Statements 6-10 measure this factor of Spiritual Intelligence.
* Being Vision and Value- Led : It is the acting from principles and deep beliefs and living accordingly. Statements 11-15 represents this dimension.
* Holism seeing large patterns, relationships, and connections : It is being having a sense of belonging ; Statements 16-20 mention this dimension accordingly.
* Compassion : It is having the quality of stealing with deep empathy represents 21-25 statements.
* Celebration of diversity: Valuing other people for their differences , not despite them. Statements 26-30 measure this factor of Spiritual Intelligence.
* Field Independence: Standing again, the crowd and having one’s own convictions. Items 31-35 represents this dimension.
* Humility: Having the sense of being a player in a larger dramas, of one’s true place in the world. Items 36-40 represents this factor of Spiritual Intelligence.
* Tendency to ask fundamental ‘why’ questions: Needing to understand things and get to the bottom of them. Items 41-45 measure this factor of Spiritual Intelligence.
* Ability to reframe: Standing back from a situation or problem and seeing the bigger picture. 46-50 measure this factor of Spiritual Intelligence.
* Positive use of adversity: Learning and growing from mistakes, setbacks, and suffering. Statements 51-55 represent this dimension.
* Sense of vocation: Feeling called upon to serve, to give something back. Statements 56-60 represent this dimension.

 Table 3.3

|  |  |  |
| --- | --- | --- |
| Dimensions  | Item No. | Total No. |
| Self- Awarness | 1,2,3,4,5, | 5 |
| Spontaneity | 6,7,8,9,10 | 5 |
| Being Vision and Value- led | 11,12,13,14,15 | 5 |
| Holism seeing large patterns, relationships and connections | 16,17,18,19,20 | 5 |
| Compassion | 21,22,23,24,25 | 5 |
| Celebration of diversity | 26,27,28,29,30 | 5 |
| Field independence | 31,32,33,34,35 | 5 |
| Humility | 36,37,38,39,40 | 5 |
| Tendency to ask fundamental ‘why’ questions | 41,42,43,44,45 | 5 |
| Ability to reframe | 46,47,48,49,50 | 5 |
| Positive use of adversity | 51,52,53,54,55 | 5 |
| Sense of vocation | 56,57,58,59,60 | 5 |

* + 1. Emotional Intelligence Inventory

The capacity to recognize, use, and regulate your own emotions in order to reduce stress, communicate clearly, sympathize with others, overcome obstacles, and diffuse conflict is known as emotional intelligence (EQ). The capacity to recognize, understand, exhibit, manage, and use feelings in communication and interpersonal interactions is known as emotional intelligence (EI). The capacity to comprehend, interpret, and react to the emotions of others is just as important as the capacity to express and control one's own emotions.

In the present study the investigator selected 50 statements among 55 statements after the experts’ opinion Final draft was made with 50 statements.

There are 50 statements regarding to the Emotional Intelligence. Each statement has five possible modes of responses such as always, often, sometimes, rarely, never. There are 50 positive statements. Then a score of 1 to 5 is given to the responses and the score of each statement ranges between 1 to 5 agree, strongly agree, neither agree or disagree, disagree and strongly disagree in the reverse order for positive statements. Total score for Emotional Intelligence is obtained by adding the scores of 50 statements.

* + - 1. Dimensions of Emotional Intelligence Inventory

The items for Emotional Intelligence Inventory were drawn for the major dimensions to measure the Spiritual Intelligence among Prospective Teachers at Secondary Level. A brief description of factors are given below.

* Self- Awareness : Knowing what we are feeling in the moment, and using those preference to guide our decision making; having a realistic assessment of our own abilities and a well grounded sense of self-confidence. Statements 1-10 represents this dimension.
* Self-Regulation: Handling our emotions so that they facilitate rather than inference with the task at hand; being conscientious and delaying gratification to pursue goals; recovering well from emotional distress. Items 11-20 mention this dimension.
* Self- Motivation: Using our deepest preferences to move and guide us toward our goals, to help us take initiative and strive to improve, and to preserve in the face of setbacks and frustrations. Statements 21-30 represents this dimension.
* Empathy: Sensing what people are feeling, being able to take their perspectives, and cultivating rapport and attunement with a broad diversity of people. Items 31-40 mention this dimension.
* Social Skills: Handling emotions in relationships well and accurately reading social situations and networks; interacting smoothly, using these skills to persuade and lead , negotiate and settle disputes for cooperation and teamwork. Statements 40- 50 mention this statements.

 Table 3.4

|  |  |  |
| --- | --- | --- |
| Dimensions | No. of Items | Total No. |
| Self- Awareness | 1,2,3,4,5,6,7,8,9,10 | 10 |
| Self- Regulation | 11,12,13,14,15,16,17,18,19,20 | 10 |
| Self- Motivation | 21,22,23,24,25,26,27,28,29,30 | 10 |
| Empathy | 31,32,33,34,35,36,37,38,39,40 | 10 |
| Social Skills | 41,42,43,44,45,46,47,48,49,50 | 10 |

* 1. Data Collection Procedure

The gathering of data is vitally important to the research process in order to validate or reject the hypotheses and held inferences as valid or invalid. If the investigator is meticulous in their strategy, data collection will be methodical.

The investigator contacted the college authority to request permission to conduct the study after deciding on the sample and tools to be used. The researcher began gathering data from various B.Ed colleges in the Ernakulam District with the permission of the institution's head. The data gathering process began on January 10 and was finished on January 27.

3.7 STATISTICAL TECHNIQUES EMPLOYED FOR THE STUDY

The investigator can understand the value of a specific group using the average values provided by the statistical treatment. Covariance is a statistical method for determining the relationship between research variables. The development of conclusions and the creation of generalizations are made easier by data measures.

For the present study the following statistical techniques were employed. They are the following:

1. Arithmetic Mean (M)

The term "arithmetic mean" refers to a value that is calculated by dividing the total number of values in a data collection by the sum of all the values.

 X= $\sum\_{}^{}$fx/N

X= Arithmetic Mean

f = Frequency x = Score

N = Sample Size

1. Median

In statistics, the median is the number that, when arranged in order, falls in the middle of the given collection of data. Either descending or ascending order can be used to organize the data or observations.

1. Standard Deviation

The sample standard deviation is the most frequently used measure of dispersion/ variability and it is not easily understood as range. It can be considered as a kind of average of absolute deviations of observed values from the mean of the variable in question. The standard deviation measures the variability and consistency of the sample. The formula for calculating standard deviation of grouped data is Standard Deviation

f = Frequencies of the distribution

X = Given set of scores

M = Mean of given set of scores

N = Total frequency

1. Karl Pearson’s Coefficient of correlation

Karl Pearson's coefficient of correlation is defined as a linear correlation coefficient that falls in the value range of -1 to +1. Value of -1 signifies strong negative correlation while +1 indicates strong positive correlation