Chapter IV
Research Procedure
## CHAPTER - IV

### RESEARCH PROCEDURE

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4.1 Introduction

A study cannot be evaluated unless its procedure is reported in sufficient detail. The investigator should adopt a systematic and appropriate procedure in conducting the research. A careful consideration is being given in selection of tools, collection of data and analysis of data. The accuracy, reliability and validity of the research findings depend on the correct and careful choice of the tools. The details regarding the choice of the tools, selection of the sample, collection and analysis of data are outlined in this chapter.

4.2 Research Design

The present study is a normative survey (ex-post-facto) type research. The research design specifies the questions to be investigated, the process of sample selection, methods of procedure to be followed, measurements to be obtained and comparison and other analyses to be made. The research design of the study is presented in Table 4.1.
### Table 4.1: Research Design

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variable Studied</th>
<th>Tools Used</th>
<th>Sample</th>
<th>Statistics Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Students’ Behaviour Adjustment to school</td>
<td>Behaviour in School Inventory</td>
<td>70 schools</td>
<td>Descriptive, Inferential</td>
</tr>
<tr>
<td>2</td>
<td>Students’ Motivation Towards School</td>
<td>Kozeki’s Motivational Inventory</td>
<td>700 students</td>
<td>Univariate, Bivariate, Multivariate Analyses</td>
</tr>
<tr>
<td>3</td>
<td>Students’ Involvement in School Activities</td>
<td>Students’ Involvement Questionnaire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Teachers’ Involvement in School Activities</td>
<td>Teachers’ Involvement Questionnaire</td>
<td>490 teachers</td>
<td>ANOVA Correlation Discriminant Function Analysis</td>
</tr>
<tr>
<td>5</td>
<td>Teachers’ Job Satisfaction</td>
<td>Job Satisfaction Questionnaire</td>
<td></td>
<td>Regression Analysis</td>
</tr>
<tr>
<td>6</td>
<td>Teachers’ Ego State Level</td>
<td>Ego State Inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Leadership Qualities of Heads of Schools</td>
<td>Leadership Qualities Questionnaire</td>
<td>70 Heads of Schools</td>
<td>Profile Analysis</td>
</tr>
<tr>
<td>8</td>
<td>Time Management of Heads of schools</td>
<td>Time Energy Memory Survey Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>School Atmosphere</td>
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<td></td>
<td></td>
</tr>
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<td>10</td>
<td>Organizational Health</td>
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<td></td>
<td></td>
</tr>
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<td>11</td>
<td>Classroom Climate</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 Hypotheses

The objectives of the study are stated in Chapter 1. The following hypotheses are generated based on the objectives of the study.

Major Hypothesis 1

Students in schools with different levels of effectiveness differ in their behaviour adjustment to school.

Sub Hypotheses

Students in schools with different levels of effectiveness differ in their

(a) Studiousness
(b) Compliance
(c) Teacher contact

Major Hypothesis 2

Students in schools with different levels of effectiveness differ in their motivation towards school.

Sub Hypotheses

Students in schools with different levels of effectiveness differ in their motivation in

(a) Cognitive domain
(b) Affective domain and
(c) Moral domain
**Major Hypothesis 3**

Students in schools with different levels of effectiveness differ in their involvement in school activities.

**Sub Hypotheses**

Students in schools with different levels of effectiveness differ in their involvement in:

(a) Discipline problems
(b) Willingness to work
(c) Organisation ability
(d) Participation in extra curricular activities

**Major Hypothesis 4**

Teachers in schools with different levels of effectiveness differ in their involvement in school activities.

**Sub Hypotheses**

Teachers in schools with different levels of effectiveness differ in their involvement in

(a) Planning the school work
(b) Decision making
(c) Administration
(d) Extra Curricular Activities.

**Major Hypothesis 5**

Teachers in schools with different levels of effectiveness differ in their job satisfaction.
Major Hypothesis 6

There is association between school effectiveness and the predominant ego state level of teachers as perceived by students.

Sub Hypotheses

Teachers in schools with different levels of effectiveness differ in their ego state level related to

(a) Critical parent
(b) Nurturing parent
(c) Adult
(d) Adopted child
(e) Rebellious child
(f) Natural child

Major Hypothesis 7

Heads of schools with different levels of effectiveness differ in their time management.

Sub Hypotheses

Heads of schools with different levels of effectiveness differ in their:

(a) Knowledge of time management
(b) Attitude towards time management

Major Hypothesis 8

Heads of schools with different levels of effectiveness differ in their leadership qualities.
Sub Hypotheses

Heads of schools with different levels of effectiveness differ in their:

(a) Assertive administration
(b) Instructional leadership
(c) Assumption of responsibility
(d) Personal vision and character
(e) Decision making
(f) Standard

Major Hypothesis 9

Schools with different levels of effectiveness differ with respect to classroom climate.

Sub Hypotheses

Schools with different levels of effectiveness differ with respect to:

(a) Authenticity
(b) Legitimacy
(c) Productivity

Major Hypothesis 10

Schools with different levels of effectiveness differ with respect to organizational health.
Sub Hypotheses

Schools with different levels of effectiveness differ with respect to

(a) Institutional integrity
(b) Principal influence
(c) Consideration
(d) Initiating structure
(e) Resource support
(f) Morale
(g) Academic emphasis

Major Hypothesis 11

Schools with different levels of effectiveness differ with respect to school atmosphere.

Sub Hypotheses

Schools with different levels of effectiveness differ with respect to

(a) Esprit
(b) Authority
(c) Hindrance
(d) Administration

Major Hypothesis 12

Schools under different managements differ in their levels of effectiveness.
Major Hypothesis 13

Schools of different types differ in their levels of effectiveness.

4.4 Tools

The tools that are used for the present study are described in detail in the following pages.

4.4.1 Behaviour in School Inventory

Behaviour in School Inventory developed and standardised by Youngman (1979) consists of thirty four items with 'Yes or 'No' alternative responses. It was administered to the students to identify the following three dimensions of behavioural adjustment in school:

1. Studiousness
2. Compliance
3. Teacher contact

Studiousness scale consists of twelve items and measures the time spent (in terms of more or less) and also the interest towards learning by the students.

Compliance scale consists of fifteen items and measures the activities of students in terms of others' expectations.

Teacher contact scale consists of seven items and measures the relationship with teachers. The scoring scheme of the tool is Yes = 1 and No = 0. Reverse scoring was adopted for negative items.
Reliability and Validity

The reliability was established by the author and worked out to 0.86. In the present study the reliability of the tool was established by test and retest method and the correlation between the two tests worked out to be 0.84. The validity of the inventory as measured from reliability was found as 0.91.

4.4.2 Kozeki’s Motivational Inventory

Kozeki’s Motivational Inventory consists of eighteen statements with ‘Yes’ or ‘No’ alternative responses. It was administered to the students to assess the motivation of students in the following three domains:

1. Affective domain
2. Cognitive domain and
3. Moral domain.

Affective domain consists of six statements and measures the following dimensions of motivation:

(a) Warmth
(b) Identification and
(c) Sociability.

Warmth refers to the encouragement and interest actively shown by parents. Identification refers to the feeling of empathy with adults and wanting to please them and sociability refers to enjoying collaborative work and activities with peers.
Cognitive domain contains six statements and measures the following dimensions of motivation:

(a) Independence
(b) Competence
(c) Interest

Independence refers to satisfaction from working without help from others. Competence refers to rewards from a recognition of developing knowledge and skills and interest refers to enjoyment derived from ideas.

Moral domain contains six statements and measures the following three dimensions of motivation:

(a) Trust
(b) Compliance and
(c) Responsibility

Trust refers to satisfaction from doing things thoroughly well. Compliance refers to preferring a secured behaviour according to rules or norms and responsibility refers to accepting the consequences of action and monitoring one’s own behaviour accordingly. The scoring scheme of the tools is Yes = 1, No = 0. Reverse scoring was adopted for negative items.

Reliability and Validity

The reliability was established by the author Kozeki and reported to be 0.74. The researcher also established the reliability of
the tool by test and retest method and the correlation between the two tests worked out to be 0.71. The validity of the tool was measured by the index of reliability and it was 0.84.

4.4.3 Students' Involvement Questionnaire

A four point Likert type rating scale was developed by Selvaraju (1993). The questionnaire has sixteen statements and was administered to the teachers to measure the following four dimensions of students' involvement in school activities.

1. Discipline problem
2. Willingness to work
3. Organization ability
4. Participation in extra curricular activities.

The scoring scheme of the tool is of four anchoring points (3, 2, 1 and 0). Reverse scoring was adopted for negative items.

Reliability and Validity

The reliability was computed for the questionnaire by the author and it worked out to be 0.69. In the present study test-retest reliability was established which worked out to be 0.70. The validity as measured by the index of reliability was found as 0.83.

4.4.4 Teachers' Involvement Questionnaire

A four point Likert type rating scale was developed by Selvaraju (1993). Sixteen statements were listed out to measure four dimensions of teachers' involvement in school activities.
1. Planning the school work
2. Decision making
3. Involvement in administration and
4. Involvement in extra curricular activities.

The scoring scheme of the tool is of four anchoring points (3, 2, 1 and 0). Reverse scoring was adopted for negative items.

**Reliability and Validity**

The reliability established by the author worked out to be 0.76. In the present investigation the reliability of the tool was established by test-retest method and the correlation between two tests worked out to be 0.79. The validity was measured by the index of reliability and it was 0.89. (Garrett, 1966).

**4.4.5 Teachers’ Job Satisfaction Questionnaire**

Job satisfaction questionnaire selected for the study was developed by Galloway (1978) and subsequently modified by the Australian Council of Educational Research (Ainlay 1981 and Galloway et al. 1982). It was further modified by Santhappan (1987). The investigator selected the questionnaire developed by Santhappan (1987) for the present study as it would be suitable for Indian conditions.

It consists of 30 items to be responded on a five point scale as ‘very satisfied’, ‘fairly satisfied’, ‘neither satisfied nor dissatisfied’, ‘fairly dissatisfied’ and ‘very dissatisfied’. And the scoring scheme is (4, 3, 2, 1 and 0.)
Reliability and Validity

The reliability established by the author worked out to be 0.89. And in the present study the reliability of the tool was established by test-retest method and the correlation between the two tests worked out to be 0.79. The validity as measured by the index of reliability was found as 0.89.

4.4.6 Ego State Inventory

It was constructed by James (1976). It is meant for measuring the personality structure of the teacher by the pupils. As ego states are directly related with an individual’s communication behaviour the ego state inventory was selected for the study.

To measure the ego state levels of teacher-parent, adult and child, ego state inventory was used. The ego state inventory was an internationally standardized tool and was adopted to our conditions after consulting experts in the field of behaviour psychology.

The ego state inventory consists of 42 items. They are divided into six sub groups. Each sub group contains 7 statements.

The following are the sub-groups.

1. Critical parent
2. Nurturing parent
3. Adult
4. Adopted child
5. Rebellious child
6. Natural child
All the feelings and experiences people are exposed to during infancy and childhood are unconsciously recorded in the brain. These recorded messages greatly influence our behaviour for the rest of our lives. They are observable as three distinct modes of behaviour, called ego states, which considerably affect our styles of communication and its effectiveness. Everybody has three ego states: Parent, Adult and Child.

**Parent:** "The parent in you feels and behaves in the same ways you perceived the feelings and behaviours of your mother and father (or other influential grown-ups) when you were a baby. You express a parent ego state when you give advice, criticise, discipline, moralise, nurture and protect, make rules and regulations, teach and judge."

**Adult:** "Your adult ego state helps you gather factual information and use it to make rational decisions. It is not related to age. You are adult when you store information, plan, check alternatives, make decisions, reason, recall information, evaluate, estimate, probabilities and set limits."

**Child:** "The child ego state contains impulses and responses you felt and made when you were very young. Besides spontaneous feelings, the child is the origin of adapted behaviour. The child ego state is observable when you show anger, fear, rebelliousness, curiosity, creativity, trust, love, excitement, self-indulgence, aggression, servility."
These three ego states are within us all the time when a person acts, speaks, makes gestures that are influenced by parents' behaviour, he is acting from his parent. His child within him influences emotions and spontaneous behaviour.

The ego state level of the teacher is decided on the basis of the scores that the students have awarded to the teacher for each state. The state (parent, adult, child) that gets the highest score is assigned to the teacher.

Reliability and Validity

In the present study test-retest method was used to find out the reliability which worked out to 0.76. The validity of the tool was measured by the index of reliability and it was 0.87.

4.4.7 Leadership Qualities Questionnaire

A five point Likert type rating scale was developed by Selvaraju (1993). The questionnaire was administered to the teachers to measure the following six dimensions of the leadership qualities of the heads of schools.

1. Assertive administration
2. Instructional leadership
3. Assumption of responsibility
4. Personal vision and character
5. Decision making and
6. Standard
Assertive administration refers to the determined functioning style of the head of the school. Instructional administration refers to the style of carrying out the work (well planned) by the head. Assumption of responsibility refers to the self involvement of the heads in the various school activities. Personal vision and character implies how the heads of the school is being viewed by others. Decision making refers to the procedure followed by the heads of the schools to arrive at any conclusion and standard refers to the personal ability of the heads of schools. The scoring scheme of the tool is of 5 anchoring points of (5, 4, 3, 2, 1) and reverse scoring was adopted for negative items.

Reliability and Validity

Test-retest reliability was computed for the questionnaire and it worked out to be 0.74 and the validity as measured by the index of reliability and it was 0.86.

4.4.8 Time Energy Memory Survey Scale

Managers, administrators, professionals, practitioners and educationists are defined by Peter Drucker as “knowledge workers”. These professionals are not expected to punch time clocks nor are they expected to be clock watchers but their use of time, energy and memory (TEM) determines to a great extent how successful, they will be in a work environment that is limited by hours, human energy and the capacity to retain information. Many people have
inefficient attitudes about time, energy and memory management or they do not know how to become more effective users of these precious resources.

Most people can be defined as workers, users or achievers in terms of their use of time, energy or memory. The Time, Energy and Memory (TEM) Survey developed by Petrello (1976) will help to ascertain whether one needs to improve his/her attitude or increase their skills in this area.

It consists of fifty sets of statements concerning attitudes and knowledge about time, energy and memory management. The scoring scheme of the total is counting the number of responses marked from the given alternatives.

Reliability and Validity

Test-retest reliability was computed by the present investigator for the scale and it worked out to be 0.79. The validity of the total was measured by the index of reliability and it was 0.88.

4.4.9 School Atmosphere Questionnaire

A four point Likert type rating scale was developed by Selvaraju (1993). The questionnaire consists of twenty statements and was administered to the teachers to measure the following four dimensions of school atmosphere:

1. Esprit
2. Authority
3. Hindrance
4. Administration

Esprit refers to the high degree of pride about the school. Authority refers to the quality of leadership in the school, whereas, hindrance refers to the ease of getting along in the school and administration refers to the procedural formalities of the school. The scoring scheme of the tool is of 4 anchoring points (4, 3, 2, 1) and reverse scoring was adopted for negative items.

Reliability and Validity

Test-retest reliability was computed for the questionnaire by the author and it worked out to be 0.83. In the present study also test-retest reliability was established which worked out to be 0.85. The validity as measured by index of reliability and it was 0.92.

4.4.10 Organizational Health Inventory

Organizational Health Inventory of Hoy and Feldman (1987) is a four point Likert type rating scale. The OHI contains forty four statements, whereas in the present study only twenty one statements are considered which cover all the seven elements of school health. They are:

1. Institutional integrity
2. Principal Influence
3. Consideration
4. Initiating structure
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5. Resource support
6. Morale
7. Academic emphasis.

Institutional integrity is the school's ability to cope with its environment in a way that maintains the educational integrity of its programme. Teachers are protected from unreasonable community and parental demands.

Principal influence is the principal's ability to influence the actions of superiors. Being able to persuade superiors to get additional consideration and not to be impeded by the hierarchy are important aspects of school administration.

Consideration is principal behaviour that is friendly, supportive, open and collegial; it represents a genuine concern on the part of the principal for the welfare of the teachers.

Initiating structure is principal behaviour that is both task and achievement oriented. Work expectations, standards of performance and procedures are clearly articulated by the principal.

Resource support refers to a school where adequate classroom supplies and instructional materials are available and extra materials are readily supplied if requested.

Morale is a collective sense of friendliness, openness, enthusiasm and trust among faculty members. Teachers like each other, like their jobs and help each other and they are proud of their school and feel a sense of accomplishment in their jobs.
Academic emphasis is the extent to which the school is driven by a quest for academic excellence. High but achievable academic goals are set for students. The learning environment is orderly and teachers believe in their students' ability to achieve. Students work hard and respect those who do well academically.

Thus, institutional integrity serves as an indicator of health at the institutional level. Principal influence, consideration, initiating structure and resource support provide measures of the health of the managerial system. Morale and academic emphasis are the indices of health at the technical level. The scoring scheme of the tool is of 4 anchoring points (4, 3, 2, 1) and reverse scoring was adopted for negative items.

**Reliability and Validity**

Test-retest reliability was computed for the Inventory and it worked out to be 0.67. The validity of the tool was measured by the index of reliability and it was 0.81.

The construct validity was established by factor analysis by Hoy and Feldman.

**4.4.11 Authenticity, Legitimacy and Productivity Questionnaire (ALP) (Classroom Climate)**

To assess the classroom climate the Authenticity, Legitimacy and Productivity Questionnaire developed and standardised by Thelan (1981) was administered to the students. The students were asked to
indicate their responses on a four point scale namely, very frequently 'occurs', 'often occurs', 'sometimes occurs' and 'rarely occurs'. The ALP instrument consists of twenty four statements and they are keyed to identity the following three dimensions of classroom:

1. Authenticity
2. Legitimacy and
3. Productivity

Authenticity refers to the emotional involvement and mental stimulation of the students in the classroom. Legitimacy refers to the individual and group behaviour of the students which are regulated by authoritative cultural agreements and the productivity refers to the amount and quality of output from the classroom climate. The scoring scheme of the tool is of 4 anchoring points (4, 3, 2, 1) and reverse scoring was adopted for negative items.

Reliability and Validity

The reliability of the tool was established by the author and worked out to be 0.72.

The researcher also established the reliability of the tool by test-retest method and the correlation between the two tests worked out to be 0.76. The validity of the tool was measured by the index of reliability and it was 0.87. The detailed description about the tools is presented in Table 4.2.
Table 4.2: Description of the Tools

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Tool</th>
<th>Dimensions</th>
<th>Total Statements</th>
<th>Under each Dimension</th>
<th>Sl. No. of Negative Items</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Behaviour in School Inventory</td>
<td>3</td>
<td>34</td>
<td>A = 12, B = 15, C = 07</td>
<td>1, 2, 3, 5, 11, 13, 16, 17, 19, 21, 22, 24, 25, 26, 27 &amp; 33</td>
<td>Yes = 1, No = 0</td>
</tr>
<tr>
<td>2</td>
<td>Kozenki’s Motivational Inventory</td>
<td>3</td>
<td>18</td>
<td>6</td>
<td>1, 2, 4, 6, 7, 11, 12 &amp; 18</td>
<td>Yes = 1, No = 0</td>
</tr>
<tr>
<td>3</td>
<td>Students’ Involvement</td>
<td>4</td>
<td>16</td>
<td>4</td>
<td>12</td>
<td>4 anchoring points (4, 3, 2 &amp; 1)</td>
</tr>
<tr>
<td>4</td>
<td>Teachers’ Involvement Questionnaire</td>
<td>4</td>
<td>12</td>
<td>3</td>
<td>7 &amp; 9</td>
<td>4 anchoring points (3, 2, 1 &amp; 0)</td>
</tr>
<tr>
<td>5</td>
<td>Ego State Inventory</td>
<td>6</td>
<td>42</td>
<td>7</td>
<td>Nil</td>
<td>4 anchoring points (3, 2, 1 &amp; 0)</td>
</tr>
<tr>
<td>6</td>
<td>Job Satisfaction Questionnaire</td>
<td>Nil</td>
<td>30</td>
<td>Nil</td>
<td>Nil</td>
<td>5 anchoring points (4, 3, 2, 1 &amp; 0)</td>
</tr>
<tr>
<td>7</td>
<td>Leadership Qualities Questionnaire</td>
<td>6</td>
<td>30</td>
<td>5</td>
<td>15 only</td>
<td>5 anchoring points (5, 4, 3, 2 &amp; 1)</td>
</tr>
<tr>
<td>8</td>
<td>Time Energy Memory Survey Scale</td>
<td>2</td>
<td>50</td>
<td>25</td>
<td>Nil</td>
<td>Yes = 1, No = 0</td>
</tr>
<tr>
<td>9</td>
<td>School Atmosphere Questionnaire</td>
<td>4</td>
<td>20</td>
<td>5</td>
<td>8, 9, 12, 13, 18, 19 &amp; 20</td>
<td>4 anchoring points (4, 3, 2 &amp; 1)</td>
</tr>
<tr>
<td>10</td>
<td>Organizational Health Inventory</td>
<td>7</td>
<td>21</td>
<td>3</td>
<td>2, 3, 6 &amp; 18</td>
<td>4 anchoring points (4, 3, 2 &amp; 1)</td>
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<tr>
<td>11</td>
<td>Authenticity Legitimacy Productivity Questionnaire</td>
<td>3</td>
<td>24</td>
<td>8</td>
<td>Nil</td>
<td>4 anchoring points (4, 3, 2 &amp; 1)</td>
</tr>
</tbody>
</table>

Note: 1. Except the negative items mentioned in the above table, all other items are positive.
2. Reverse scoring was adopted for negative items.
4.5 Academic Achievement

To assess the academic achievement the percentage of results of the public examination of the Standard X for the past five years were obtained by personally visiting the schools by the investigator. The percentage of average results of five years was considered in the study. The list of schools visited is presented in Appendix.-L

4.6 Sample

The population of the schools of Hubli-Dharwad Corporation area numbering upto 83 formed the sample of the study. The data was collected from schools giving due consideration to the type of management and type of schools. Eight Government schools, twenty six aided schools and fourteen private schools were selected. Out of these seven were boys schools, sixteen girls schools and forty seven co-education schools. Totally the data was collected from 70 schools.

From each school data was collected from ten students and seven teachers selected at random. In all, the data was collected from 70 schools - 700 students, 490 teachers and 70 heads of schools. This is presented in Table 4.3.
Table 4.3: Sample for the Present Study

<table>
<thead>
<tr>
<th></th>
<th>Government Schools</th>
<th>Aided Schools</th>
<th>Private Schools</th>
<th>Total</th>
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<tbody>
<tr>
<td>No. of Schools</td>
<td>1</td>
<td>-</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>No. of Teachers</td>
<td>7</td>
<td>-</td>
<td>49</td>
<td>42</td>
</tr>
<tr>
<td>No. of Students</td>
<td>10</td>
<td>-</td>
<td>70</td>
<td>60</td>
</tr>
</tbody>
</table>
4.7 Data Collection

Data was collected from students, teachers and the heads of schools. The investigator personally visited the 70 schools of Hubli-Dharwad Corporation area and with the prior permission of the heads of schools administered the tools to ten students of Standard X and seven experienced teachers in each school and to the heads. Clear cut instructions were given to fill up the questionnaires.

All the students were administered the following questionnaires:

1. Behaviour-in-School Inventory
2. Kozeki’s Motivational Inventory
3. Authenticity, Legitimacy and Productivity Questionnaire
4. Ego State Inventory.

The teachers were administered the following questionnaires:

1. Teachers’ Involvement Questionnaire
2. Job Satisfaction Questionnaire
3. Students’ Involvement Questionnaire
4. School Atmosphere Questionnaire
5. Organizational Health Inventory
6. Leadership Qualities Questionnaire

The heads of schools were administered the following questionnaire:

1. Time, Energy, Memory Survey Scale.
4.8 Data Analyses

For the analysis of data collected, descriptive, inferential univariate, bivariate and multivariate statistics, such as mean, standard deviation, correlation, ANOVA, discriminant function analysis, regression analysis and profile analysis were used.

The succeeding chapter spells out the details of the data analyses.