CHAPTER III

METHODOLOGY

The purpose of the present study was to determine and develop the psychological profiles of Physical Education teachers working at various levels of education.

Objectives

The objectives of the present study were as follows:

1. To understand the characteristics of Physical Education teachers in respect of the selected criterion variables, such as, extroversion - introversion, neuroticism, leadership effectiveness, self-concept, self-analysis (self-conflict), motivation and job satisfaction.

2. To find out the influence of secondary variables such as, school type, and sex on the selected criterion variables.

3. To extract the major sub-factors of selected criterion variables, which best predict the sports achievements of physical education teachers.

4. To find out whether any relationship existed among the various sub-factors of the selected criterion variables.

5. To identify and develop the profile emerging from the results of the study.

The delineation of the chapter is as follows:

- Universe
- Sampling
- Design of the Study
• Variables selected
• Tools employed
• Procedure
  - Pilot study
  - Administration of the tools
  - Scoring
  - Statistical Measures

Universe

The subjects for the present study were drawn from the schools in the jurisdiction of Mysore District, which is one of the major districts of Karnataka State. The population of the district is approximately 70 lakhs. The Primary and High Schools are spread over eight Talukas of the district. The Primary Schools as considered by Karnataka State Government and Education department provides formal education to students from 1st through 7th standards. The High Schools provide formal education to students from 8th through 10th grades and in certain case upto 12th standard. There are about 2759 schools out of which 2358 are Primary schools and 401 schools are high schools. Out of 2358 primary schools 1930 are Government Schools, 108 schools are private aided schools and 319 schools are un-aided schools. Whereas, among High Schools 147, 85 and 169 schools belonged to Government, Private aided and private un-aided institutions respectively. Many schools do not employ physical education teachers appointed. There are about one thousand and fifty physical education teachers employed in different schools within the district. About 743 teachers were selected as subjects for the present
study. Out of them six hundred and eighty two teachers volunteered as subjects for the present study. The total subjects drawn for the study constituted about 50% of the total universe.

**Sampling Technique**

The purposive-cum-stratified sampling technique method was employed for the purpose of the present investigation.

**Design of the Study**

The present study was basically an empirical research study. It was a descriptive-cum-analytical study.

**Sample Size**

**Description of the sample**

Tables 1 gives the description of the distribution of the sample according to school type and sex.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Frequency Male</th>
<th>Frequency Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School</td>
<td>293</td>
<td>119</td>
<td>412</td>
</tr>
<tr>
<td>%</td>
<td>71.1%</td>
<td>28.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>High School</td>
<td>243</td>
<td>27</td>
<td>270</td>
</tr>
<tr>
<td>%</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>536</td>
<td>146</td>
<td>682</td>
</tr>
<tr>
<td>%</td>
<td>78.6%</td>
<td>21.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**TABLE 1**

**DISTRIBUTION OF SAMPLE ACCORDING TO SCHOOL TYPE AND SEX**
The sample for the present study consisted of six hundred and eighty two (682) physical education teachers drawn from different primary and high schools of Mysore District. The sample consisted of 412 primary school teachers and 270 high school teachers.

Variables Selected for the present study.

<table>
<thead>
<tr>
<th>Independent Variables (Secondary Variables)</th>
<th>Dependent Variables (Criterion Variables)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* School type</td>
<td>* Personality (E-I/N)</td>
</tr>
<tr>
<td>* Sex</td>
<td>* Job Satisfaction</td>
</tr>
<tr>
<td></td>
<td>* Self-Analysis (Self-conflict)</td>
</tr>
<tr>
<td></td>
<td>* Self Concept</td>
</tr>
<tr>
<td></td>
<td>* Motivation</td>
</tr>
<tr>
<td></td>
<td>* Leadership</td>
</tr>
</tbody>
</table>

Achievement

Sports achievement of physical education teachers is also one of the dependent variable under study. It is considered for the purpose of finding out the influence of various sub factors of the selected criterion variables for the purpose of regression analysis.

Tools Employed for the Study

The following psychological tools were employed for the purpose of the study.

1. Personality Inventory designed, developed and standardized by Eysenck (1962).
2. Teacher's Job Satisfaction Scale designed and developed by Dr. Sudha and Dr. Satyanarayana (1985).

3. Self Analysis Test (Self-conflict) designed and developed by Rama Tiwari.

4. Self Concept Questionnaire developed by Dr. Rajkumar Saraswath (1984).

5. Employees Motivation Schedule developed by Dr. A.K. Srivastava (1985, and,

6. Leadership Effectiveness Scale designed and developed by Dr. (Mrs.) Haseen Taj (2000).

The purpose of the study necessitated employing the tools for collection of relevant data. The research scholar reviewed the literature pertaining to various available psychological tools. After a thorough search and review of literature, it was decided by the investigator in consultation with Psychologists to administer the tools mentioned because of the following reasons.

1. The tools are highly reliable and valid.

2. The tools were simple enough and also economical and the subjects could easily understand the items in the tools.

3. The tools have been widely accepted and have been used extensively in the fields of psychology, education and other disciplines.

4. The tools could be used for specific purposes of the present study without much alteration.

5. The information obtained by testing through these tools was objectively scorable.
6. The tools would give the most complete coverage possible of the criterion variables in a brief time.

7. The information could be easily collected and converted into raw scores with the help of appropriate and suitable keys.

8. The tools would measure the factors, which the research scholar had decided upon.

9. The way the questions have been framed and arranged would control distortion and deliberate faking on the part of respondents, which would give more reliable information.

Description of Tools

Eysenck Personality Inventory

The Eysenck personality Inventory (E.P.I.) is a development of The Maudsley personality Inventory. Like the parent instrument, it sets out to measure two major dimensions of personality, extraversion and neuroticism. It is sufficiently similar to the M.P.I., and correlates sufficiently enough with it, to make it almost certain that the experimental findings reported for the older instrument will also apply to the newer instrument. Nevertheless, the improvements incorporated in the E.P.I. make it more useful from many practical points of view. These advantages are as follows:

1. The E.P.I consists of two parallel forms, thus making possible retesting after experimental treatment without interference from memory factors.
2. The E.P.I. items have been carefully reworded so as to make it understandable even by subjects of low intelligence and/or education; the M.P.I. items were found to be rather too difficult for the subjects of this type.

3. The correlation between Extraversion and Neuroticism on the E.P.I was small but nevertheless marginally significant; suitable item selection has caused it to disappear in the E.P.I.

4. The E.P.I. contains a Lie Scale which may be used to eliminate subjects showing "desirability response set"; no such scale was contained in the published form of the M.P.I.

5. The test retest reliability of the E.P.I. is somewhat higher than that of the M.P.I.; even after periods of several months it is still in excess of 0.85.

6. Direct evidence is available of the validity of the E.P.I as a descriptive instrument of the behavior manifestations of personality.

Nature of E and N

Descriptively, the factorial studies of E have resulted in a picture, which may resemble, but is certainly not identical with that given by Jung. Below is given a brief account of the "typical" extravert; these may be regarded as idealized end-points of a continuum to which real people may approach to a greater or lesser degree.

"The typical extravert is sociable, likes parties, has many friends, needs to have people to talk to, and does not like reading or studying by himself. He craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment, and is generally
an impulsive individual. He is fond of practical jokes, always has a ready answer, and generally likes change; he is carefree, easy-going, optimistic, and likes to ‘laugh and be merry’. He prefers to keep moving and doing things tends to be aggressive and lose his temper quickly; altogether his feelings are not kept under tight control and he is not always a reliable person.

The typical introvert is a quite, retiring sort of person, introspective, fond of books rather than people; he is reserved and distant except to intimate friend. He tends to plan ahead, ‘looks before he leaps’, and distrusts the impulse of the moment. He does not like excitement, takes matters of everyday life with proper seriousness, and likes a well-ordered mode of life. He keeps his feelings under close control, seldom behaves in an aggressive manner, and does not lose his temper easily. He is reliably, somewhat pessimistic, and places great value on ethical standards.

Reliability of Scales

There are two forms of reliability, which determine the excellence of a scale; repeat reliability (test-retest) and split-half reliability (consistency). The former is the more important; it was studied on two groups of normal subjects, to be called group X and group Y. The time lapsing between test and retest was approximately 1 year for the former and 9 months for the latter. Results are presented in a tabular form.

<table>
<thead>
<tr>
<th>Table I</th>
<th>Number</th>
<th>$E_A$</th>
<th>$E_B$</th>
<th>$E$</th>
<th>$N_A$</th>
<th>$N_{11}$</th>
<th>$N$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group X</td>
<td>92</td>
<td>0.82</td>
<td>0.82</td>
<td>0.88</td>
<td>0.84</td>
<td>0.81</td>
<td>0.84</td>
</tr>
<tr>
<td>Group Y</td>
<td>27</td>
<td>0.97</td>
<td>0.80</td>
<td>0.94</td>
<td>0.88</td>
<td>0.91</td>
<td>0.92</td>
</tr>
</tbody>
</table>
It will be seen that the retest reliabilities are quite satisfactory, running between 0.84 and 0.94 for the complete test and between 0.80 and 0.97 for the separate forms. Considering the long time that elapsed between test and retest, this is encouragingly high. (The subscripts “A” and “B” in this and all other tables refer to the two forms of each scale: when “E” and “N” are given without subscripts, they refer to the combined forms, i.e., A + B.

The following are the Split-half reliabilities, i.e., A Vs B, for 1,655 normal, 210 neurotics and 90 psychotics. Also given are the reliabilities for the whole scales (A + B), obtained by using the spearman-Brown prophecy formula. The figures are lower than those for retest reliabilities, which is an unusual but not an undesirable finding. For the combined scales they run from 0.85 to 0.95; for the separate scales they run from 0.74 to 0.91. If individual decisions are to be made on the basis of the inventory clearly both forms should be used; for experimental studies one form alone may be sufficient.

<table>
<thead>
<tr>
<th>Factor</th>
<th>n = 2000</th>
<th>n = 210</th>
<th>n = 90</th>
</tr>
</thead>
<tbody>
<tr>
<td>E_A Vs E_B</td>
<td>0.757</td>
<td>0.750</td>
<td>0.741</td>
</tr>
<tr>
<td>N_A Vs N_B</td>
<td>(0.862)</td>
<td>(0.857)</td>
<td>(0.851)</td>
</tr>
<tr>
<td></td>
<td>0.811</td>
<td>0.873</td>
<td>0.906</td>
</tr>
<tr>
<td>N_A Vs N_B</td>
<td>(0.896)</td>
<td>(0.932)</td>
<td>(0.951)</td>
</tr>
</tbody>
</table>
Validity of Scales

The concept of validity is a vexed one in relation to personality. The notion of "agreement with a criterion" is clearly inapplicable, as an agreed criterion exists in the usual case. One possible criterion of validity, which is in line with procedure in the more exact sciences, is that the tests should fit in with predictions made from a more general theory. This type of validation exists in profusion in relation to the M.P.I. In virtue of the close similarity of the E.P.I. Scales to those of the M.P.I. it seems reasonable to argue that this proof would also apply to the new scale. Independent proof would, of course, be required in due course, but is not yet available.

An alternative type of proof, however, is available. Using the method of nominated groups, S.B.G. Eysenck (1962) and Eysenck and Eysenck (1963) have several times shown that when independent judges are asked to nominate extraverted and introverted, or stable and unstable subjects, and when these nominees are then asked to fill in the E.P.I., there are clear and predictable differences on the scales between the respective extreme groups. In other words, individuals who impress others as showing introverted or extraverted behaviour patterns, or as being stable or unstable in their everyday behaviour, answer the E.P.I. in a corresponding manner. There is some evidence that where there is lack of agreement, it is the judges who are at fault, rather than the inventory answers. On the whole, there seems little doubt that questionnaire responses given under the usual conditions give a reasonably valid picture of the subject's habitual behaviour patterns.
Lie Scale

An 18-item Lie scale (L) has been included in the E.P.I. The M.M.P.I. “L” scale was again re-written and adapted for use with the M.P.I., and extensive item analyses and factor analyses were carried out over the years; one or two only of these have been published (Eysenck, 1959b; Gibson, 1962). These studies showed the scale to be valid, reliable, and useful in detecting individuals “faking good” accordingly, it has been included in the present Inventory. No absolute guidance can be given for its use, as different groups differ from each other, but in general it may be said that there is considerable evidence to show that a score of 10 or above on the scale shows that “faking good” is likely to have occurred, and that the E and particularly the N scores should be regarded with considerable scepticism. If only scale A or scale B is employed, an “L” score of 4 or 5 would be considered to constitute the cutting point where inventory answers ceased to be acceptable. Tendency to have high L scores may in itself be an interesting personality trait (Eysenck and Eysenck, 1963d). The scale has not been used very much in conjunction with the E.P.I., and little in the way of documentation can therefore be offered at this stage.

The mean score of a group of 651 subjects on Form A was 2.263, with a standard deviation of 1.572; the mean score of a group of 329 subjects on Form B was 1.383, with a standard deviation of 1.354, mean L score for the latter group (A&B) was 3.565, 2.475. In addition, data are available of a group of 482 apprentices who were tested under conditions which made them believe that the inventory was given as part of selection procedure; this presumably caused many of them to “fake good”. Under these conditions
The mean on Form A was 4.529, with a standard deviation of 1.803 (Form B was not given to this group).

The test-retest correlation for form A was 0.776, that of Form B 1.736 and that of the combined forms 0.810 (n=50). Correlation's between forms A and B were calculated for four separate groups totaling 329 subjects: the average 0.54 Nearetest reliability on group of 50 subjects was 0.81 for the total L scales, and 0.78 and 0.74 for La and Lb. Table 4 shows the make-up of the normal standardization group, not unexpectedly, are engineering apprentices (whose high extraversion has already been noted on the M.P.I. Salesmen and student occupational therapists. The most introverted groups are clerks, teachers and students. The most stable groups are the professional and managerial ones, with skilled working class subjects the least stable. Student teacher and student nurses also were relatively unstable. The total mean score of all these groups may perhaps be acceptable as a good approximation to a national mean; the detailed examination of the data does not suggest any gross departure from good sampling practices.

Administration of the E.P.I.

Instructions for literate subjects are printed on each copy of the E.P.I.; these should be read aloud to groups of subjects, or be read silently by subjects tested individually. They should not be amplified or altered in any way. When the questionnaires are collected after completion, care should be taken to check that all

Questions have been answered; where answer are missing, subjects should have their attention drawn to the omissions. With illiterate of blind subjects, the questions may
be read aloud, and the answers recorded. This should never be done when anyone else
but the subject is present, and on no account must the examiner change the wording of
the question, amplify or interpret it, or give advice to the subject on how to answer it.

Scoring is accomplished by aligning the scoring keys furnished with the Manual,
counting one point for each underlined answer uncovered by the holes in the key.

**Leadership Effectiveness Scale**

Dr. (Mrs.) Haseen Taj (2001), Lecturer, Department of Education, Bangalore
University, Bangalore developed this scale. In identifying the areas of leadership
effectiveness scale, six (6) major areas were finalised, which covers almost all the aspects
of leadership effectiveness qualifying itself for adequate content validity and
conceptualization. A brief description of each area is as follows:

1. **Interpersonal relations**: leadership effectiveness depends upon followers
   perceiving and responding to the leader display of competence, fairness and
   identification. In this area, statements on leaders ability to give direction to activity
   to acquaint his members of staff with their roles in the main efforts giving guidance.
   to school staff and also the ability to discriminate between good and bad in addition
   to heads perceived interest in members of staff and interest in staff activities are
   included.

2. **Intellectual operations**: The most effective leaders appear to exhibit greater degree
   of versatility and flexibility that enables them to adapt their behavior to the changing and
contradictory demands made on them. Items related to group problem and using expedient methods for solving group problems are included in this area.

(iii) **Behavioral and emotional stability.** Leaders’ regularity and practicability of behavior is important in smoothening the on-going interaction. In case of a leader, this stability of behaviour provides a basis for the group to function on an even plane, without unnecessary disturbance.

The behavioral stability alone does not judge the leaders effectiveness, in addition, he should possess the emotional stability too. When a leader behaves on the basis of momentary whim, or seems to be arbitrary in making decisions, a destructive element is introduced into the leadership process. Therefore, the leader should possess predictable behaviour and emotional stability to exhibit effective leadership. In this area the institutional leaders ability to challenge the crisis with calmness self-confidence, dependability and consistency in words and actions are included.

(iv) **Ethical and moral strength**

The leader who has ethical and moral commitment/strength is fully committed to the goals of the organization and his role in accomplishing these goals. A leader who values his organization goals and takes great pride in fulfilling his organizational role will example of his moral strength. He believes it morally right to belong to the organization. He is likely to be defensive to the criticism of his firmness and criticism of those he sees are not putting forth-maximum efforts in their work. A leader should also serve as a behaviour model for the group members. His behaviour should be congruent
with the norms of trust. His modeling serves as an important function of enabling the members to experiment with new kinds of behaviour that may turn out to be effective for them. Statements reflecting the ethical and moral behaviors of heads in either accepting or rejecting his mistakes, welfare, and problems of their group are included in this area.

(v) Adequacy of communication:

Adequacy of communication is vital to the process of effective leadership. Effective leadership uses communication to get people committed to a joint activity with a common plan. Barnard (1962) said, "infusing a belief in a common purpose is an essential executive function". The leader who keeps communication less open on a developing issue will find that followers are less able to understand the necessity for a particular course of action. In short, they will not as readily see the leader definition of the situation as realizing. This area includes items pertaining to the ability of an institutional organizational head in receiving processing, retaining and transmitting the information.

(vi) Operation as a citizen

An effective leader should be a friendly liaison officer between the organization and the community. He should adapt in fostering good public relations, securing community participation for improving and developing his institution, making institution conscious of the need to serve the community better. In this area, statements pertaining to the ability of a leader of the institution / organization to fulfil his obligations,
developmental skills, getting interested in contemporary events of the organizational community, public and other agencies are included.

Scoring

LES: The respondents would be asked to indicate the behaviour of their group leader or head on the five points given against each statement. All the statements were scored giving a weightage to each of the alternative responses of the statements in the pattern given below for all the positive items:

<table>
<thead>
<tr>
<th>Always (A)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often (B)</td>
<td>4</td>
</tr>
<tr>
<td>Occasionally (C)</td>
<td>3</td>
</tr>
<tr>
<td>Rarely (D)</td>
<td>2</td>
</tr>
<tr>
<td>Never (E)</td>
<td>1</td>
</tr>
</tbody>
</table>

For all the negative items of the scale, scoring was reversed ranging from 1 to 5. Items marked are negative items. The total score of a respondent could range from 90 to 450.

Administration of the LES:

The LES is based on the perceptions of observed leadership effectiveness by the other members of staff. The scale can be administered either individually or to small groups. The purpose, of course, should be explained besides the respondent or group members should be guaranteed the protection of their anonymity. The group leader should not be physically present while the group members are describing his acts. A minimum of 4 to 10 respondents is needed to provide a satisfactory index score for the
Leadership effectiveness. While administering LES, the respondents should be asked to describe the acts of their group leader as accurately as possible without letting them know the effective and ineffective leadership.

Reliability

Two types of reliabilities were established for the scale, i.e., test-retest and split-half reliability, using a sample of 140 group members from educational, industrial and other organizations representing different management in the city of Bangalore.

The test – retest reliability co-efficient was found to be 0.60 with a time gap of 2 weeks and split half - reliability co-efficient by odd and even and first half and second half, 1st half Vs 2nd half method were found to be 0.64 and 0.67, respectively. After the application of spearman – brown prophecy formula to split – half reliability co-efficient (r) gave rise to a co-efficient of 0.78 and 0.80 respectively.

Validity

(1) Content validity: The scale possesses content validity because the statements were selected based on the 85% unanimity of experts on content adequacy, conceptualization and distribution of statements over different areas.

(2) Intrinsic validity: The intrinsic validity was found to be 0.77 and 0.88.

(3) Item validity: The item validity was found to be significant at 0.05 level.
Interpretation of Scores

The respondents who score 320 and above are called effective leaders, those who score between 320 and 165 are called moderate leaders and those who score below 165 are called ineffective leaders.

Description of Self-concept Questionnaire

Dr. Raj Kumar Saraswat (1999) of the department of Educational Psychology, Counselling and Guidance, New Delhi, developed the Self-concept Questionnaire.

The self-concept inventory provides six separate dimensions of self-concept, Viz., Physical, social, Intellectual, Moral, Educational and Temperamental self-concept. It also gives a total self-concept score.

The operational definitions of self-concept dimensions measured by this inventory are:

1. Physical- Individual’s view of their body, health, physical appearance and strength.
2. Social-Individual’s sense of worth in social interactions.
3. Temperamental-Individual’s view of their prevailing emotional state or predominance of a particular kind of emotional reaction.
4. Educational-Individual’s view of themselves in relation to school, teachers and extracurricular activities.
5. **Moral**—individuals' estimation of their moral worth; right and wrong activities.

6. **Intellectual**—Individual's awareness of their intelligence and capacity of problem solving and judgement.

Self-concept Dimensions along with their Item Numbers are presented in tabular form.

**Self-concept dimensions Alongwith their Item Numbers**

<table>
<thead>
<tr>
<th>Self-Concept Dimensions</th>
<th>Code No.</th>
<th>Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>A</td>
<td>2, 3, 9, 20, 22, 27, 29, 31</td>
</tr>
<tr>
<td>Social</td>
<td>B</td>
<td>1, 8, 21, 27, 40, 43, 46, 48</td>
</tr>
<tr>
<td>Temperamental</td>
<td>C</td>
<td>4, 10, 14, 16, 19, 23, 24, 28</td>
</tr>
<tr>
<td>Educational</td>
<td>D</td>
<td>5, 13, 15, 17, 25, 26, 30, 32</td>
</tr>
<tr>
<td>Moral</td>
<td>E</td>
<td>6, 34, 3, 41, 42, 44, 45, 47</td>
</tr>
<tr>
<td>Intellectual</td>
<td>F</td>
<td>7, 11, 12, 18, 33, 36, 38, 39</td>
</tr>
</tbody>
</table>

The inventory contains 48 items. Each dimension contains eight items. Each item is provided with five alternatives. Responses are obtained on the test booklet itself. There is no time limit but generally 20 minutes have been found to be sufficient for responding to all the items. Instructions for the time limit for answering the inventory are also given on the test booklet.
Scoring Method

The respondent is provided with five alternatives to give his responses ranging from most acceptable to least acceptable description of his self-concept. The alternatives or responses are arranged in such a way that the scoring system for all the items will remain the same i.e. 5, 4, 3, 2, 1 whether the items are positive or negative. If the respondent puts a (√) mark for first alternative the score is 5, for second alternative the score is 4, for third alternative score is 3, for the fourth it is 2 and for the fifth and last alternative the score is one. The summated score of all the forty-eight items provide the total self-concept score of an individual. A high score on this inventory indicates a higher self-concept, while a low score shows low self-concept. The score of each item is transferred on the front page against that item. All the scores of eight items given in that column are added. This will give the score for that particular dimension of Self-concept.

Reliability

Reliability of the inventory was found by test-retest method, and it was found to be 91 for the total self-concept measure. Reliability coefficients of its various dimensions vary from 67 to 88. The following table shows the test-retest reliability for each dimension.
Test-Retest Reliability of the Self-concept Inventory

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Self-concept Dimensions</th>
<th>No. of Items</th>
<th>Reliability coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Physical</td>
<td>8</td>
<td>.77</td>
</tr>
<tr>
<td>B</td>
<td>Social</td>
<td>8</td>
<td>.83</td>
</tr>
<tr>
<td>C</td>
<td>Temperamental</td>
<td>8</td>
<td>.79</td>
</tr>
<tr>
<td>D</td>
<td>Educational</td>
<td>8</td>
<td>.88</td>
</tr>
<tr>
<td>E</td>
<td>Moral</td>
<td>8</td>
<td>.67</td>
</tr>
<tr>
<td>F</td>
<td>Intellectual</td>
<td>8</td>
<td>.79</td>
</tr>
<tr>
<td></td>
<td>Total Self-concept</td>
<td>48</td>
<td>.91</td>
</tr>
</tbody>
</table>

Validity

Expert's opinions were obtained to establish the validity of the inventory. 100 items were given to 25 psychologists to classify the items to the category to which it belongs. Items of highest agreement and not less than 80% of agreement were selected. Thus the content and construct validity were established.

Self Analysis Test (Self-conflict)

For the observation and measure of various psychological concept, Osgood presented a method known as S.D. method. In this method there is a seven-point scale in which the subject has to rate a concept according to the degree. Each scale has opposite adjectives at the extreme ends as-

Good.........................................................Bad
The present test follows the Osgood's pattern. There are 30 pairs of adjectives followed by the responses in seven alternative category as Strongly Agree (7), Much Agree (6), Agree (5), Cannot Say (4), Disagree (3), Much Disagree (2), Strongly Disagree (1).

From the statistical analysis, it is found that the adjective pair of the scales fall in three categories displaying activity involved in a concept, strength of Potency and evaluation. The present scale consists of 12 items of activity, 10 items of potency or strength and the remaining 8 items of evaluation, as given below-

Activity – 1, 6, 7, 10, 13, 17, 21, 22, 23, 24, 26, 30.

Potency or Strength – 3, 4, 5, 8, 9, 11, 12, 16, 18, 25.

Evaluation – 2, 14, 15, 19, 20, 27, 28, 29.

Thus 30 items are presented under two heads in the test as –

(i) I consider myself as…….(Perceived-self)

(ii) I should be as ……. (Ego. Ideal or the ideal self)

Administration:

The test can be administered individually as well as in group. It is a self-administering test. If the test is to be administered in-group then there should be considerable distance between two individuals so that no one can discuss while giving the responses. The instructions are given on the test paper, which should be read carefully before starting the test.
Employees Motivation Schedule (EMS)

The employee motivation Schedule was developed by Dr. A.K. Srivastava, (1985) Department of Psychology, B.H.U., Varanasi. This Schedule consists of 70 items (ten for each area) relating to Need for personal growth, Need for achievement, Need for self control, Need for monetary gains, needs for non financial gains, Need for social affiliation and conformity and Need for autonomy and self actualization.

Reliability

The following table records the reliability co-efficient of the seven sub-scales of the Schedule:

<table>
<thead>
<tr>
<th>Sub-scales</th>
<th>Serial No of The items</th>
<th>Split-half (N=200)</th>
<th>Retest (N=95)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Scale – 1</td>
<td>1 – 10</td>
<td>.82</td>
<td>.86</td>
</tr>
<tr>
<td>Sub Scale – 2</td>
<td>11 – 20</td>
<td>.79</td>
<td>.84</td>
</tr>
<tr>
<td>Sub Scale – 3</td>
<td>21 – 30</td>
<td>.74</td>
<td>.84</td>
</tr>
<tr>
<td>Sub Scale – 4</td>
<td>31 – 40</td>
<td>.77</td>
<td>.81</td>
</tr>
<tr>
<td>Sub Scale – 5</td>
<td>41 – 50</td>
<td>.81</td>
<td>.83</td>
</tr>
<tr>
<td>Sub Scale – 6</td>
<td>51 – 60</td>
<td>.79</td>
<td>.84</td>
</tr>
<tr>
<td>Sub Scale – 7</td>
<td>61 – 70</td>
<td>.72</td>
<td>.70</td>
</tr>
</tbody>
</table>

Validity

In the process of validation of the scale the homogeneity of the items constituting even sub-scales was ascertained. For the purpose correlation (bi-serial) between the score on each item and the score on the sub-scale, of which the item was part, was
computed. The responses on the items selected to be included in various scales were found to be considerably consistent with the responses on the corresponding sub-scales as a whole.

The validity of the scale was further ascertained by correlating the scores on the Employees Motivation Schedule with the scores on the measures of job involvement and role stress. The following table provides the obtained results:

<table>
<thead>
<tr>
<th>Work Motivation</th>
<th>Job involvement (N=101)</th>
<th>Role Stress (N=200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Personal growth</td>
<td>.78</td>
<td>- 65</td>
</tr>
<tr>
<td>2. Achievement</td>
<td>.73</td>
<td>- 57</td>
</tr>
<tr>
<td>3. Self Control</td>
<td>.65</td>
<td>- 50</td>
</tr>
<tr>
<td>4. Monetary gain</td>
<td>.55</td>
<td>- 32</td>
</tr>
<tr>
<td>5. Non-financial gains</td>
<td>.53</td>
<td>- 31</td>
</tr>
<tr>
<td>6. Social affiliation</td>
<td>.67</td>
<td>- 39</td>
</tr>
<tr>
<td>7. Self actualization</td>
<td>.53</td>
<td>- 38</td>
</tr>
<tr>
<td>8. The whole scale</td>
<td>.83</td>
<td>- 51</td>
</tr>
</tbody>
</table>

The responses given to the items may be converted into scores according to the following guidelines:

<table>
<thead>
<tr>
<th>Categories of responses</th>
<th>Scores to be given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1</td>
</tr>
<tr>
<td>Seldom</td>
<td>2</td>
</tr>
<tr>
<td>Mostly</td>
<td>3</td>
</tr>
<tr>
<td>Always</td>
<td>4</td>
</tr>
</tbody>
</table>
Description of Teachers' Job Satisfaction Scale (TJSS)

The Teachers' Job Satisfaction Scale was developed (in English and Kannada versions) by Dr. Sudha and Dr. Sathyanarayana in 1985. This tool measures job satisfaction of teachers as consisting of five components viz. Economic Sufficiency, Social Status, Professional Growth, Personal Contentment and Inter Personal Cooperation. There are 8 items in each component, thus constituting the total of 40 items on the scale. Each item is to be answered on a scale of four alternatives i.e. SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. The scale could be administered individually or in-group. There is no time limit to complete this scale, but teachers can be asked to give their responses as reasonable fast as possible. To score the items on the scale weightages of 4,3,2 and 1 were given in the case of positive statements, 1,2,3, and 4 and in case of negative statements for SA, A, D and SD respectively. Thus the range of scores on this scale for each area varied from 8 to 32. The scores obtained on Job Satisfaction Scale could be categorized under 3 level using the criteria – the average of the maximum weightage and minimum weightage for the total number if items in the scale + SD of the scores obtained on the scale. The details of the categories with score limits are given below.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Score Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above average</td>
<td>Average + 0 above</td>
</tr>
<tr>
<td>Average</td>
<td>Between Average -- 0</td>
</tr>
<tr>
<td></td>
<td>And average = 0</td>
</tr>
<tr>
<td>Below Average</td>
<td>Below Average -- 0</td>
</tr>
</tbody>
</table>
The scale was deemed to be valid and reliable as the selection of the items was based on item analysis employing 't' test and it has test re-test reliability of 0.6 to 0.8 as found out by different studies (Rajanna, 1985). Some of the relevant details of the Job Satisfaction Scale are given in Tabular form

**Details of Teachers' Job Satisfaction Scale**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Components of Job</th>
<th>Total No. of Items</th>
<th>Specific Item No.</th>
<th>Reliable Coefficient as per Shanthakumari's study</th>
<th>Reliable Coefficient as per Sudha's study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Economic Sufficiency</td>
<td>8</td>
<td>1,6,11,16,21,26,31,36</td>
<td>n= 25</td>
<td>n = 26</td>
</tr>
<tr>
<td>2.</td>
<td>Social Status</td>
<td>8</td>
<td>2,7,12,17,22,27,32,37</td>
<td>0.93</td>
<td>0.80</td>
</tr>
<tr>
<td>3.</td>
<td>Professional Growth</td>
<td>8</td>
<td>3,8,13,18,23,28,33,38</td>
<td>0.80</td>
<td>0.60</td>
</tr>
<tr>
<td>4.</td>
<td>Personal Contentment</td>
<td>8</td>
<td>4,9,14,19,24,29,34,39</td>
<td>0.80</td>
<td>0.80</td>
</tr>
<tr>
<td>5.</td>
<td>Interpersonal Cooperation</td>
<td>8</td>
<td>5,10,15,20,25,30,35,40</td>
<td>0.80</td>
<td>0.80</td>
</tr>
</tbody>
</table>

**Secondary Variables**

**Socio-demographic Data**

Socio-demographic data was prepared to elicit information regarding secondary factors like school type and sex. These secondary variables were the independent variables for the present study.
Achievement

The achievement of physical education teachers working at different grade levels of education was to be determined. The achievement of physical education teachers was determined by a panel of experts. The experts rated the physical education teachers' achievement on the basis of the performance and achievements of their students in Interscholastic Sports Competition conducted from Taluka level to National level school games. The details of the performance and achievements of their school students and school teams were collected in the form of general information during test administration and collection of required data. The subjects had furnished the information sought and the information furnished by them were duly verified through the registers available in the office of the District Superintendent of Physical Education.

A panel of five experts were requested to rate the achievements of physical education teachers on a five-point scale based on the performance and achievements of their students in the inter-scholastic competitions at Taluka level, District level, Divisional level, State level and National level. The total of points given by judges for achievement of physical education teachers were averaged and the average was considered as their achievement scores. The points could range from zero to one hundred.

Procedure Followed

Pilot Study

The scales selected for the present study were tried out on one hundred physical education teachers who were selected at random from different Primary and High
Schools of the district. The doubts and ambiguity were cleared. The questionnaires were sent to psychologists and experts and their opinions were collected. The opinions of the respondents were also collected. Only 7 items in the Self-concept Questionnaire developed by Dr. Rajkumar Saraswath were modified as per the suggestions given by the respondents. This was done in consultation with the psychologists and their expert opinions were taken. The modifications were made to suit the necessity of present study, however, did not drastically change the major content of the questionnaire, and it was felt that it would definitely serve the purpose of the present study.

Administration of Tools

The subjects selected for the present study were present during the Interscholastic Competitions that were organised as a regular feature of the annual academic calendar of education department. All those subjects who readily and willingly accepted as subjects to respond to the questionnaire were considered for the present study. The tournaments would be organised for three days. It was during this period when the tournaments were on, the subjects were requested to fill in the questionnaires and scales. The subjects filled the questionnaires during their free time. The subjects were assembled in a hall and were divided into small sub-groups.

The importance of the present investigation was explained to all the six hundred and eighty two subjects who were selected for the present study. For the purpose of convenience the subjects were divided into small groups of 50 teachers. It was further divided into small groups of five teachers and made into batches. The subjects were gradually introduced and initiated to the procedure of the investigation. It was also
explained that it was purely a group study and not an individual assessment. Some of the questions and words in the questionnaire, which were not understood by the subjects, were interpreted and sometimes translated to the local language to ensure that the subjects understood the questions thoroughly. As far as possible the investigator has taken care to establish similar testing conditions for all the subjects. The subjects were motivated as much as possible to answer the questionnaires and scales sincerely and in the time given to them.

Many physical education teachers who volunteered to assist the investigator were trained and oriented to the ways of test administration and testing procedure. The investigator administered the selected questionnaires to the subjects in small batches of five subjects. A trained volunteer was assigned to each group. With the assistance of trained volunteers the investigator administered one scale in each session for three days. The investigator within his limitations has made sincere efforts to create proper conditions of testing by creating confidence on the part of the subjects by providing a free, frank and cordial atmosphere and establishing a strong support, communication and relationship before and during the test administration. After the subjects responded to the questionnaire, the questionnaires were collected back and the responses were scored as per the instructions in the respective manuals that would represent the data for the study.

The leadership effectiveness scale was sent to the concerned heads of the institutions and selected colleagues, in the respective schools where the subjects were working, to collect data / information regarding the various aspects of leadership effectiveness of the selected subjects.
Scoring

The information furnished by the subjects in response to the questionnaire were converted into raw scores as per the directions and instructions given in the respective manuals of different tools used for the purpose of the present study.

Data for the Present Study

The relevant data for the present study was obtained from the scores derived for different factors of each scale in total as well as from the scores of each sub-factor in each scale or questionnaire. The data thus obtained were analysed statistically using SPSS Windows version 10.0.1 package.

Socio-demographic data with regard to secondary variables were collected through the general information furnished by the subjects and the information furnished was verified with the District Superintendent of the Department of Physical Education.

Statistical Methods Employed in the Analysis

Following statistical methods were employed to analyse the data in the present investigation.

- Contingency Table Analysis
- Analysis of variance- Two Way
- Stepwise Multiple Regression
- Hierarchical Cluster Analysis
Contingency Table Analysis

This test tests the hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. Pearson chi-square, likelihood-ratio chi-square, and linear-by-linear association chi-square are displayed. Tests the hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. Pearson chi-square, likelihood-ratio chi-square, and linear-by-linear association chi-square are displayed. For 2x2 tables, Fisher's exact test is computed when a table that does not result from missing rows or columns in a larger table has a cell with an expected frequency of less than 5. Yates' corrected chi-square is computed for all other 2x2 tables.

In the present investigation this test was applied to find out the association between school types (Primary and High schools) in various selected criterion variables.

Analysis of Variance - Two Way – General Linear Model (GLM)

The GLM Univariate procedure provides analysis of variance for one dependent variable by one or more factors and/or variables. The factor variables divide the population into groups. Using this General Linear Model procedure, one can test null hypotheses about the effects of other variables on the means of various groupings of a single dependent variable. You can investigate interactions between factors as well as the effects of individual factors, some of which may be random. In addition, the effects of covariates and covariate interactions with factors can be included. For regression analysis, the independent (predictor) variables are specified as covariates.
Both balanced and unbalanced models can be tested. A design is balanced if each cell in the model contains the same number of cases. In addition to testing hypotheses, GLM Univariate produces estimates of parameters.

In the present experiment most of the secondary variables like, school type, sex, age, area, educational qualification, nature of appointment, salary and management were considered as Independent variables and all the selected criterion variables were considered as Independent variables.

**Stepwise Multiple Regression**

Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. For example, one can try to predict a salesperson’s total yearly sales (the dependent variable) from independent variables such as age, education, and years of experience. The significance values in the output are based on fitting a single model. Therefore, the significance values are generally invalid when a stepwise method is used. All variables must pass the tolerance criterion to be entered in the equation, regardless of the entry method specified. The default tolerance level is 0.0001. Also, a variable is not entered if it would cause the tolerance of another variable already in the model to drop below the tolerance criterion.

All independent variables selected are added to a single regression model. However, one can specify different entry methods for different subsets of variables. For
Example, one can enter one block of variables into the regression model using stepwise selection and a second block using forward selection.

In the present investigation, stepwise-multiple regression was applied to extract major contributing factors of selected criterion variables on the achievement of the physical education teachers- Overall and independent.

Hierarchical Cluster Analysis

This procedure attempts to identify relatively homogeneous groups of variables based on selected characteristics, using an algorithm that starts with each variable in a separate cluster and combines clusters until only one is left. One can analyze raw variables or can choose from a variety of standardizing transformations. Distance or similarity measures are generated by the Proximity procedure. Also one can generate dendrograms to which can be used to assess the cohesiveness of the clusters formed and can provide information about the appropriate number of clusters to keep.