CHAPTER V

SUMMARY

AND

CONCLUSIONS
5.1 STATEMENT OF THE PROBLEM

The study was undertaken with an intention of making “A Study of Emotional Intelligence, Burnout, Adjustment Needs and Personality Needs and Creativity of Effective and Non-Effective Science Teachers of Central Government and State Government Secondary Schools”.

5.2 OBJECTIVES OF THE STUDY

General Objectives:

1. To measure the level of Emotional Intelligence of science teachers of State Government and Central Government secondary schools.

2. To compare the Emotional Intelligence of science teachers of State Government and Central Government secondary schools.

3. To develop Emotional Intelligence Scale suitable for teachers.

Specific Objectives

Entire Sample

1. To study whether there is any significant difference between effective and non-effective science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

2. To study whether there is any significant difference between effective and non-effective science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).
3. To study whether there is any significant difference between effective and non-effective science teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

4. To study whether there is any significant difference between effective and non-effective science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

5. To study whether there is any significant difference between effective and non-effective science teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality- non-verbal).

Type of Schools – State and Central Government Secondary School Science Teachers

6. To study whether there is any significant difference between science teachers of State and Central government secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

7. To study whether there is any significant difference between Science teachers of State and Central secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

8. To study whether there is any significant difference between Science teachers of State and Central government secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

9. To study whether there is any significant difference between Science teachers of State and Central secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).
10. To study whether there is any significant difference between Science teachers of State and Central government secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality- non-verbal).

11. To study whether there is any significant difference between Science teachers of State and Central government secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

**Gender – Male and Female Science Teachers**

12. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

13. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

14. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

15. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

16. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality- verbal and originality- non-verbal).
17. To study whether there is any significant difference between male and female science teachers of secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

**Subjects of Teaching – PCM and CBZ Science Teachers**

18. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

19. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

20. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

21. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

22. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-non-verbal).

23. To study whether there is any significant difference between PCM and CBZ science teachers of secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication,
systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

**Medium of Teaching – Kannada and English Medium Science Teachers**

24. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

25. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

26. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

27. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

28. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality- verbal and originality- non-verbal).

29. To study whether there is any significant difference between Kannada and English medium science teachers of secondary schools with respect to teacher effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).
Experience - Junior and Senior Science Teachers

30. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

31. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

32. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

33. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

34. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality- non-verbal).

35. To study whether there is any significant difference between junior (<5 years) and senior (>5 years) science teachers of secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

Relationship between Variables:

36. To study whether there is any significant relationship between the effectiveness of science teachers of secondary schools and their emotional
intelligence, emotional exhaustion, depersonalisation, personal accomplishment, personality needs, adjustment needs and creativity (total).

37. To study whether there is any significant relationship effectiveness of science teachers of secondary schools and their emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity (State).

38. To study whether there is any significant relationship effectiveness of science teachers of secondary schools and their emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity (Central).

39. To study whether there is any significant relationship between emotional intelligence, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools (total).

40. To study whether there is any significant relationship between emotional intelligence, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools (State government).

41. To study whether there is any significant relationship between emotional intelligence, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools (Central government).

Predictors of Teacher Effectiveness

42. To study whether Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity are significant predictors of effectiveness of science teachers of secondary schools (total).

43. To study whether Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment
needs and creativity are significant predictors of effectiveness of science teachers of state government secondary schools.

44. To study whether Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity are significant predictors of effectiveness of science teachers of central government secondary schools.

**Direct and Indirect Effect of Variables**

45. To study whether there is any significant direct and indirect effect of Emotional intelligence, emotional exhaustion burnout, depersonalization burnout, personal accomplishment burnout, personality needs, adjustment needs and creativity on effectiveness of science teachers of secondary schools (total).

46. To study whether there is any significant direct and indirect effect of Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity on effectiveness of science teachers of state government secondary schools.

47. To study whether there is any significant direct and indirect effect of Emotional intelligence, emotional exhaustion burnout, depersonalization burnout, personal accomplishment burnout, personality needs, adjustment needs and creativity on effectiveness of science teachers of central government secondary schools.

**5.3 VARIABLES CONSIDERED IN THE STUDY**

The following are the variables considered for the present study.

1) **Dependent Variable (Criterion)**
   a) Teacher Effectiveness of science teachers

2) **Independent Variable (Predictors)**
   a) Science teachers' emotional intelligence
b) Science teachers’ burnout

c) Science teachers’ personality needs

d) Science teachers’ adjustment needs

e) Science teachers’ creativity (Elaboration – verbal and non-verbal, originality – verbal and non-verbal)

3) Moderator Variables

a) Gender (Male / Female)

b) Type of School (State Government and Central Government Secondary Schools)

c) Subject of Teaching – PCM and CBZ

d) Medium of instruction (Kannada and English)

e) Teaching Experience

The above variables were selected based on the related literature, self observation and the teaching experience of the investigator in the college of education.

5.4 RESEARCH HYPOTHESES

Specific Hypothesis

Entire Sample

1. There is no significant difference between effective and non-effective science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

2. There is no significant difference between effective and non-effective science teachers of secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).
3. There is no significant difference between effective and non-effective science teachers of secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

4. There is no significant difference between effective and non-effective science teachers of secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

5. There is no significant difference between effective and non-effective science teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-non-verbal).

Type of School: State Government and Central Government Secondary Schools

6. There is no significant difference between science teachers of State and Central government secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

7. There is no significant difference between Science teachers of State and Central secondary schools with respect to burnout and its components (i.e. emotional exhaustion, depersonalization and personal accomplishment).

8. There is no significant difference between Science teachers of State and Central government secondary schools with respect to personality needs and its dimensions (i.e. extroversion-Introversion, neuroticism).

9. There is no significant difference between Science teachers of State and Central secondary schools with respect to adjustment needs and its dimensions (i.e. academic and general environment, socio-psycho-physical adjustment, professional relationship adjustment, personal life adjustment and financial adjustment & job satisfaction).

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dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-non-verbal).

11. There is no significant difference between Science teachers of State and Central government secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

Gender: Male and Female Science Teachers

12. There is no significant difference between male and female science teachers of secondary schools with respect to emotional intelligence and its dimensions (i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

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room management, clarity, structure, warmth, enthusiasm and opportunity to 
learn).

**Subjects of Teaching: PCM and CBZ Science Teachers**

18. There is no significant difference between PCM and CBZ science teachers of 
secondary schools with respect to emotional intelligence and its dimensions 
(i.e. Self-awareness, Self-regulation, Motivation, Empathy and Social skills).

19. There is no significant difference between PCM and CBZ subjects science 
teachers of secondary schools with respect to burnout and its components (i.e. 
emotional exhaustion, depersonalization and personal accomplishment).

20. There is no significant difference between PCM and CBZ subjects science 
teachers of secondary schools with respect to personality needs and its 
dimensions (i.e. extroversion-Introversion, neuroticism).

21. There is no significant difference between PCM and CBZ subjects science 
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dimensions (i.e. academic and general environment, socio-psycho-physical 
adjustment, professional relationship adjustment, personal life adjustment and 
financial adjustment & job satisfaction).

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teachers of secondary schools with respect to creativity and its dimensions (i.e. 
elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-
non-verbal).

23. There is no significant difference between PCM and CBZ subjects science 
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**Medium: Kannada and English Medium Science Teachers**

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Experience: Junior and Senior Science Teachers

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34. There is no significant difference between junior (<5 years) and senior (>5 years) teachers of secondary schools with respect to creativity and its dimensions (i.e. elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-non-verbal).

35. There is no significant difference between junior (<5 years) and senior (>5 years) science teachers of secondary schools with respect to effectiveness and its dimensions (i.e. socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn).

Relationship between Variables

36. There is no significant relationship between the effectiveness of science teachers of secondary schools and their emotional intelligence, emotional exhaustion, depersonalisation, personal accomplishment, personality needs, adjustment needs and creativity (total).

37. There is no significant relationship effectiveness of science teachers of secondary schools and their emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity (State).

38. There is no significant relationship effectiveness of science teachers of secondary schools and their emotional intelligence, emotional exhaustion,
depersonalization, personal accomplishment, personality needs, adjustment needs and creativity (Central).

39. There is no significant relationship between emotional intelligence, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools (total).

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**Predictors of Teacher Effectiveness**

42. Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity are not significant predictors of effectiveness of science teachers of secondary schools (total).

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44. Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity are not significant predictors of effectiveness of science teachers of central government secondary schools.
Direct and Indirect Effect of Independent Variables on Effectiveness

45. There is no significant direct and indirect effect of Emotional intelligence, emotional exhaustion burnout, depersonalization burnout, personal accomplishment burnout, personality needs, adjustment needs and creativity on effectiveness of science teachers of secondary schools (total).

46. There is no significant direct and indirect effect of Emotional intelligence, emotional exhaustion, depersonalization, personal accomplishment, personality needs, adjustment needs and creativity on effectiveness of science teachers of state government secondary schools.

47. There is no significant direct and indirect effect of Emotional intelligence, emotional exhaustion burnout, depersonalization burnout, personal accomplishment burnout, personality needs, adjustment needs and creativity on effectiveness of science teachers of central government secondary schools.

5.5 DELIMITATIONS OF THE STUDY

- The study was delimited to 364 teachers of Mandya and neighbouring districts.
- The study was delimited to science teachers of Mandya and neighbouring districts.
- The study was delimited to assess emotional intelligence based on the self reporting questionnaires from the science teachers of state and central government secondary schools of Mandya and neighbouring districts.
- The study was delimited to assess teacher effectiveness based on the replies to the questionnaire from only 3 students (Below average, Average and Above average) per teacher.
- The study was confined to state government and central government secondary schools science teachers.
5.6 LIMITATIONS OF THE STUDY

- The subject does manage to get some insight into what the purpose is. So there is always the factor of social desirability and faking.

- The limitation on the part of data collection has been the absence of data on arts and language teachers. The data on arts and language teachers could have not only increased the sample size, but also could have strengthened certain arguments.

- The limitation with respect to the presentation of thesis is the lack of availability of more recent literature related to emotional intelligence, creativity, and teaching effectiveness of teachers in India.

However, it can be claimed that in whatever small way, the study has brought out some of the emotional competencies, burnout, personality needs and adjustment needs and creativity of effective and non-effective science teachers. May be the later investigators can overcome the limitations faced in the present work and advance the research in the field of emotional intelligence and teacher effectiveness.

5.7 RESEARCH DESIGN AND METHOD

Ex post facto research design was used in the proposed study. Ex post facto research is systematic empirical inquiry in which the investigator does not have direct control of independent variables because their manifestations have already occurred or because they are indirectly not manipulable. Inferences about relations among variables are made, without direct interaction, from concomitant variation of independent and dependent variables.

Tools used for the Study

(i) Suitable tools for the assessment of teachers' burnout, teachers personality needs, teachers adjustment needs and creativity are readily available. Hence, it was decided to use Maslach Professional Burnout Inventory, Eysenck Personality Inventory, Sharmas Personality Needs Inventory, Mangal's Teacher Adjustment Inventory, Baquer Mehdis Creativity Test (Thinking Creatively with Figures) and Shashikala Deshpande's Students Rating of Teacher Effectiveness Scale.
A test for the assessment of Emotional Intelligence of teachers is conspicuous by its absence. Hence, it was decided to construct a suitable scale for the assessment of emotional intelligence of teachers.

5.8 DATA GATHERING TOOLS

The following tools were used for collecting data related to different variables of the study.

Table 5.1: Variable studied/ tools used and the authors devised /adopted

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variable</th>
<th>Questionnaire/Inventory</th>
<th>Developed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emotional Intelligence</td>
<td>TEIS, Teachers Emotional Intelligence Scale</td>
<td>Investigator</td>
</tr>
<tr>
<td>2</td>
<td>Burnout</td>
<td>MPBI, Maslach Professional Burnout Inventory</td>
<td>Maslach</td>
</tr>
<tr>
<td>3</td>
<td>Personality</td>
<td>E.P.I, Eysenck Personality Inventory</td>
<td>Hans J.Eysenk</td>
</tr>
<tr>
<td>4</td>
<td>Adjustment</td>
<td>MTAI, Mangal’s Teacher Adjustment Inventory</td>
<td>S. K. Mangal</td>
</tr>
<tr>
<td>5</td>
<td>Creativity</td>
<td>Baquer Mehdi’s Creativity Test Test Verbal and Non–verbal tests</td>
<td>Baquer Mehdi</td>
</tr>
<tr>
<td>6</td>
<td>Teaching effectiveness</td>
<td>SROTES, Students’ Rating of Teacher Effectiveness Scale</td>
<td>Shashikala Deshpande</td>
</tr>
</tbody>
</table>

5.10 SAMPLE

Selection of Sample

The population for the present study was all those science teachers who were teaching PCM and CBZ subjects at the State Government and Central Government secondary schools in Mandya district and neighbouring districts.

Stratified Random Sampling was done in order to get school representation, teacher representation and also the student representation.
In addition to the above, in order to get the ratings of the teaching effectiveness of teachers, students studying in X standard who were taught science subjects by the teachers who were involved in the present study were selected. From each class, 3 students (including above average, average and below average were selected to rate each teacher. Thus the present study includes 364 teachers who were rated by total number of (364*3 =) 1092 students.

Distribution of Sample

Table 5.2: Showing break up of sample in terms of variables

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Variable</th>
<th>Breakup</th>
<th>No. of Teachers</th>
<th>Percentage</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Type of School</td>
<td>State Govt</td>
<td>238</td>
<td>65.38</td>
<td>364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central Govt</td>
<td>126</td>
<td>34.62</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gender</td>
<td>Male</td>
<td>206</td>
<td>43.41</td>
<td>364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>158</td>
<td>56.59</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Subject taught</td>
<td>PCM</td>
<td>194</td>
<td>53.30</td>
<td>364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CBZ</td>
<td>170</td>
<td>46.70</td>
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<td>4</td>
<td>Medium</td>
<td>Kannada</td>
<td>209</td>
<td>57.42</td>
<td>364</td>
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<td></td>
<td></td>
<td>English</td>
<td>155</td>
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<td>5</td>
<td>Experience</td>
<td>Junior</td>
<td>206</td>
<td>57.40</td>
<td>364</td>
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<tr>
<td></td>
<td></td>
<td>Senior</td>
<td>158</td>
<td>42.60</td>
<td></td>
</tr>
</tbody>
</table>

5.11 COLLECTION OF DATA AND SELECTION OF APPROPRIATE STATISTICAL TECHNIQUE

The procedure followed in data collection is as follows:

Initially schools in Mandya district were randomly selected. The teachers were enunciated the purpose of the study. Only those science teachers who gave consent in conducting the study, both male and female, in that particular school were selected. Questionnaires were administered in a group of 2-4 teachers and orientation address was delivered to establish rapport before handing over the questionnaires. Clarifications were made as and when required to the teachers and explanation was also given both in English and Kannada languages by the investigator. The teachers whose mother tongue was Kannada were given the Kannada versions of all the five...
questionnaires. The teachers were insisted and requested to answer to the questions within the time limit means for it. Data was collected by administering the questionnaires to the selected sample of 364 teachers and 1092 students. The investigator visited all the schools and administered the scales, inventories and tests in person.

The procedure followed in data collection from the students about the teaching effectiveness of those teachers who responded to the 5 questionnaires was different from that of the procedure followed to collect data from students. After seeking permission from the head, the investigator selected 3 students from each class for whom the teachers were dealing with science subjects. The concerned teachers were totally avoided from influencing their students while responding to Students’ Rating of Teacher Effectiveness Scale (SROTES). Teachers were not given any hints regarding the day and data of collecting the data from teachers. The investigator himself collected back the answer sheets from students.

5.12 STATISTICAL TECHNIQUES USED

The data was analysed with reference to the objectives stated and hypothesis formulated. The following statistical techniques were used for this purpose.

Description statistics – such as Mean and Standard Deviation, t-test, ANOVA, were used to study the significant difference among the mean scores of the groups.

Correlation Analysis was used to investigate the relationship between independent variables and dependent variables. Karl Pearson correlation technique was applied and simple relationships were obtained.

Regression Analysis – was used to analyse the group of data on variables.

Path Analysis – was used to find out the direct and indirect influence of independent variables on the dependent variable

ANOVA Test and t-test were applied to investigate the significant and non-significant relationship among variables. All the statistical techniques were carried out by using SPSS 11.0 statistical software.
5.13 FINDINGS OF THE STUDY

Major Findings

1. Effective and non-effective science teachers differ significantly with respect to emotional intelligence. Effective science teachers have higher emotional intelligence and non-effective science teachers have lower emotional intelligence.

2. Effective and non-effective science teachers differ significantly with respect to burnout. Effective science teachers have lower degree of burnout and non-effective science teachers have higher degree of burnout.

3. Effective and non-effective science teachers differ significantly with respect to personality needs. Effective science teachers have higher personality needs and non-effective science have lesser personality needs.

4. Effective and non-effective science teachers differ significantly with respect to adjustment needs. Effective science teachers have higher adjustment needs and non-effective science teachers have lower adjustment needs.

5. Effective and non-effective science teachers differ significantly with respect to creativity. Effective science teachers have higher creativity and non-effective science teachers have lower creativity.


7. Science teachers of state government secondary schools and science teachers of central government secondary schools statistically do not differ significantly with respect to burnout. Science teachers of state and central government secondary schools have similar burnout.

8. Science teachers of state government secondary schools and science teachers of central government secondary schools do not differ significantly with respect to personality needs. Science teachers of state government secondary schools and
Science teachers of central government secondary schools have similar personality needs i.e., similar extroversion-introversion.

9. Science teachers of state government secondary schools and central government secondary schools do not differ significantly with respect to overall adjustment needs. Science teachers of state government secondary schools and central government secondary schools similar needs.

10. Science teachers of state and central government secondary schools differ significantly with respect to creativity. Science teachers of state government secondary schools have lower creativity when compared to science teachers of central government schools.

11. Science teachers of state and central government secondary schools differ significantly with respect to effectiveness. Science teachers of state government secondary schools have higher teacher effectiveness when compared to science teachers of central government secondary schools.

12. Male and female Science teachers of secondary schools do not differ significantly with respect to emotional intelligence. Male and female science teachers of state and central government secondary schools have similar emotional intelligence.

13. Male and female Science teachers of secondary schools do not differ significantly with respect to burnout. Male and female science teachers of state and central government secondary schools have similar burnout.

14. Male and female Science teachers of secondary schools do not differ significantly with respect to personality. Male and female science teachers have similar personality needs.

15. Male and female Science teachers of secondary schools do not differ significantly with respect to adjustment needs. Male and female science teachers have similar adjustment needs.

16. Male and female Science teachers of secondary schools do not differ significantly with respect to creativity. Male and female science teachers have similar creativity.
17. Male and female Science teachers of secondary schools do not differ significantly with respect to effectiveness. Male and female science teachers have similar teacher effectiveness.

18. PCM and CBZ Science teachers of secondary schools differ significantly with respect to emotional intelligence. PCM science teachers have higher emotional intelligence compared to CBZ science teachers of secondary schools.

19. PCM and CBZ Science teachers of secondary schools do not differ significantly with respect to burnout. PCM and CBZ Science teachers of secondary schools have similar level of overall burnout.

20. PCM and CBZ Science teachers of secondary schools differ significantly with respect to personality needs. PCM science teachers of secondary schools have higher personality needs and CBZ science teachers have lesser personality needs.

21. PCM and CBZ Science teachers of secondary schools differ significantly with respect to adjustment. PCM Science teachers are higher in adjustment and CBZ Science teachers of secondary schools are lower in adjustment.

22. PCM and CBZ Science teachers of secondary schools do not differ significantly with respect to creativity. PCM and CBZ Science teachers of secondary schools have similar creativity.

23. PCM and CBZ Science teachers of secondary schools differ significantly with respect to teacher effectiveness. PCM Science teachers of secondary schools have higher teacher effectiveness scores and CBZ Science teachers of secondary schools have lower teacher effectiveness scores.

24. Kannada and English medium Science teachers of secondary schools differ significantly with respect to emotional intelligence. Kannada medium science teachers have higher emotional intelligence and English medium science teachers have lower emotional intelligence.

25. Kannada and English medium Science teachers of secondary schools do not differ significantly with respect to burnout and its components. Kannada and English medium science teachers have similar burnout levels.
26. Kannada and English medium Science teachers of secondary schools differ significantly with respect to personality needs. Kannada medium science teachers have greater number of personality needs and English medium science teachers have lesser number of personality needs.

27. Kannada and English medium Science teachers of secondary schools differ significantly with respect to adjustment needs. Kannada medium science teachers are well adjusted and English medium Science teachers are not well adjusted.

28. Kannada and English medium Science teachers of secondary schools do not differ significantly with respect to creativity. Kannada and English medium science teachers have similar creativity.

29. Kannada and English medium Science teachers of secondary schools differ significantly with respect to effectiveness. Kannada medium science teachers have higher teacher effectiveness and English medium science teachers have lower teacher effectiveness.

30. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to emotional intelligence. Junior science teachers have lower emotional intelligence and senior science teachers have higher emotional intelligence.

31. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to burnout. Junior science teachers (<5yrs) have higher degree of burnout and Senior science teachers (>5yrs) have lower degree of burnout.

32. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to personality needs. Junior science teachers (<5yrs) have lesser personality needs and Senior science teachers (>5yrs) have greater personality needs.

33. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to adjustment needs. Junior science teachers (<5yrs) have lower adjustment needs and Senior science teachers (>5yrs) have higher adjustment needs.
34. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to creativity. Junior science teachers (<5yrs) have lower creativity and Senior science teachers (>5yrs) have higher creativity.

35. Junior (<5yrs) and senior (>5yrs) science teachers of secondary schools differ significantly with respect to effectiveness. Junior science teachers (<5yrs) have lower effectiveness and senior science teachers (>5yrs) have higher effectiveness.

36. A significant and negative relationship was observed between Emotional intelligence and emotional exhaustion burnout, emotional intelligence and depersonalization burnout. Emotional intelligence is increased emotional exhaustion, depersonalization needs are decreased linearly in the case of science teachers of secondary schools.

37. A significant and positive relationship was observed between emotional intelligence and personal accomplishment burnout, emotional intelligence and creativity, emotional intelligence and effectiveness. Emotional intelligence is increased as personal accomplishment, adjustment, creativity and effectiveness are increased linearly in the case of state government secondary school science teachers.

38. A significant and positive relationship was observed between emotional intelligence and personal accomplishment burnout, emotional intelligence and creativity, emotional intelligence and effectiveness. Emotional intelligence is increased as the levels of adjustment, creativity and effectiveness are increased linearly in the case of central government secondary school science teachers.

39. A significant and positive association was observed between emotional intelligence and self-awareness, emotional intelligence and self regulation, emotional intelligence and motivation, emotional intelligence and empathy, emotional intelligence and social skills, emotional intelligence and personal competence and emotional intelligence and social competence of science teachers of secondary schools. The emotional intelligence significantly increases with increase in its dimensions i.e., self-awareness, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools.
40. A significant and positive association was observed between emotional intelligence and self-awareness, emotional intelligence and self-regulation, emotional intelligence and motivation, emotional intelligence and empathy, emotional intelligence and social skills, emotional intelligence and personal competence and emotional intelligence and social competence of science teachers of secondary schools. The emotional intelligence significantly increases with increase in its dimensions i.e., self-awareness, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

41. A significant and positive association was observed between emotional intelligence and self-awareness, emotional intelligence and self-regulation, emotional intelligence and motivation, emotional intelligence and empathy, emotional intelligence and social skills, emotional intelligence and personal competence and emotional intelligence and social competence. The emotional intelligence significantly increases with increase in its dimensions i.e., self-awareness, self-awareness, self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of central government secondary schools.

42. The emotional intelligence, depersonalization, personal accomplishment and creativity are significant predictor of effectiveness of science teachers of secondary schools.

43. The effect of emotional intelligence was found to be positive and significant on effectiveness of science teachers of state government secondary schools. The emotional intelligence is a significant predictor of effectiveness of science teachers of state government secondary schools.

44. The effect of emotional intelligence was found to be positive and significant on effectiveness of science teachers of central government secondary schools. The emotional intelligence is a significant predictor of effectiveness of science teachers of central government secondary schools.
Direct and Indirect Effect of Variables

45. The direct effect of Emotional intelligence, Depersonalization, Personal accomplishment and Creativity are found to be statistically significant on effectiveness of science teachers of secondary schools.

46. The direct effect of Emotional intelligence, Depersonalization Burnout, Personal accomplishment Burnout and Personality Needs on science teachers of state government secondary schools are found to be statistically significant.

47. The direct effect of Emotional intelligence, Personality Needs and Adjustment needs are found to be statistically significant on effectiveness of science teachers of central government secondary schools.

Other Findings

1. Effective science teachers have higher Self-awareness, higher Self-regulation, higher Motivation, higher Empathy, higher Social skills and as a whole higher Personal competence and higher social competence whereas non-effective science teachers have lower self-awareness, lower self-regulation, lower motivation, lower empathy, lower social skills and as a whole lower personal competence and lower social competence.

2. Effective science teachers have lower emotional exhaustion burn out and non-effective science teachers have higher emotional exhaustion burnout.

3. Effective science teachers have lower depersonalization and non-effective science teachers have higher depersonalization burnout.

4. Effective science teachers have higher personal accomplishment and non-effective science teachers have lower personal accomplishment.

5. Effective science teachers have lesser n-neuroticism scores and non-effective science teachers have higher n-neuroticism scores.

6. Effective science teachers have higher personality needs and non-effective science teachers have lesser personality needs.
7. Effective science teachers have lower neuroticism scores and non-effective science teachers have higher neuroticism scores.

8. Effective science teachers have higher adjustment need n-academic and general environment and non-effective science teachers have lesser adjustment needs n-academic and general environment.

9. Effective science teachers have higher needs in relation to n-socio-psycho-physical adjustment when compared to non-effective science teachers.

10. Effective science teachers have higher needs in relation to n-professional relationship adjustment when compared to non-effective science teachers.

11. Effective science teachers have higher needs with respect to n-personal life adjustment and non-effective science teachers have lesser needs with respect to personal life adjustment

12. Effective science teachers have higher needs and non-effective science teachers have lesser needs with respect to n-financial adjustment & job satisfaction.

13. Effective science teachers have higher elaboration-verbal creativity and non-effective science teachers have lower elaboration-verbal creativity.

14. Effective science teachers have higher elaboration-non-verbal creativity and non-effective science teachers have lower elaboration-non-verbal creativity.

15. Effective and non-effective science teachers do not differ significantly with respect to dimensions of creativity i.e. originality- verbal and originality- non-verbal.

16. Science teachers of state government secondary schools have higher self-awareness, empathy and Social competence compared to science teachers of central government secondary schools.

17. Science teachers of state government secondary schools and central government secondary schools have similar competence with respect to self-regulation, motivation, social skills and personal competence.
18. Science teachers of state government secondary schools have lower degree of emotional exhaustion burnout compared to science teachers of central government secondary schools.

19. Science teachers of state government secondary schools have lower degree of depersonalization burnout compared to science teachers of central government secondary schools.

20. Science teachers of state government secondary schools have higher personal accomplishment scores compared to science teachers of central government secondary schools.

21. Science teachers of state government secondary schools have higher personality needs compared to science teachers of central government schools.

22. Science teachers of state government secondary schools have lesser n-neuroticism scores compared to science teachers of central government schools.

23. Science teachers of state government secondary schools and science teachers of central government secondary schools have similar need in terms of adjustment with academic and general environment.

24. Science teachers of state government secondary schools have higher n-socio-psycho-physical adjustment compared to science teachers of central government schools.

25. Science teachers of state and central government secondary schools have similar professional relationship adjustment needs.

26. Science teachers of state government secondary schools have higher personal life adjustment compared to science teachers of central government secondary schools.

27. Science teachers of state and central government secondary schools have similar adjustment with respect to financial adjustment & job satisfaction needs.
28. Science teachers of state and central government secondary schools have similar elaboration-verbal creativity.

29. Science teachers of state and central government secondary schools have similar elaboration-non verbal creativity.

30. Science teachers of state government secondary schools have lower originality- verbal creativity compared to central government school teachers.

31. Science teachers of state government secondary schools have lower originality- non verbal creativity when compared to science teachers of central government secondary schools.

32. Science teachers of state government secondary schools are more effective in terms of socio-emotional climate, competency, communication, systematic behaviour, clarity, and structure and warmth components of teacher effectiveness when compared to science teachers of central government secondary schools.

33. Science teachers of state and central government secondary schools have similar teacher effectiveness in terms of class room management, enthusiasm and opportunity to learn components of teacher effectiveness.

34. Male and female science teachers of state and central government secondary schools have similar emotional intelligence.

35. Male and female science teachers of state and central government secondary schools have similar self-awareness, self-regulation, motivation, empathy, social skills, and in overall personal competence and social competence.

36. Male and female science teachers are similar in all the dimensions of burnout viz., emotional exhaustion, depersonalization burnout and personal accomplishment.

37. Male and female science teachers have similar Extroversion-Introversion and Neuroticism scores.

38. Male and female science teachers have similar academic and general environment, socio-psycho-physical adjustment, professional relationship
adjustment, personal life adjustment and financial adjustment & job satisfaction needs.

39. Male and female science teachers have similar elaboration-verbal, elaboration-non-verbal, originality-verbal and originality-non-verbal creativity.

40. Male and female science teachers are similar in all the dimensions of teacher effectiveness, socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn.

41. PCM science teachers have higher competence in self-awareness compared to CBZ science teachers of secondary schools.

42. PCM science teachers have higher self-regulation compared to CBZ science teachers of secondary schools.

43. PCM and CBZ science teachers of secondary schools have similar competence of motivation.

44. PCM science teachers have higher level of empathy compared to CBZ science teachers of secondary schools.

45. PCM science teachers have higher social skills compared to CBZ science teachers of secondary schools.

46. PCM science teachers have higher personal competence when compared to CBZ science teachers of secondary schools.

47. PCM science teachers have higher social competence compared to CBZ science teachers of secondary schools.

48. PCM Science teachers have lower degree of emotional exhaustion and CBZ Science teachers have higher degree of emotional exhaustion burnout.

49. PCM and CBZ Science teachers of secondary schools have similar level of depersonalization burnout.

50. PCM Science teachers have higher personal accomplishment burnout compared to CBZ Science teachers of secondary schools.
51. PCM and CBZ Science teachers of secondary schools have similar extroversion-introversion scores.

52. PCM science teachers of secondary schools have lesser neuroticism scores and CBZ science teachers have higher neuroticism scores.

53. PCM Science teachers have higher adjustment with academic and general environment and CBZ Science teachers of secondary schools have lower adjustment with academic and general environment.

54. PCM Science teachers have higher socio-psycho-physical adjustment needs and CBZ Science teachers of secondary schools lower socio-psycho-physical adjustment needs.

55. PCM science teachers have higher needs in relation to professional relationship adjustment whereas CBZ science teachers have lesser needs in relation to professional relationship adjustment.

56. PCM science teachers have higher needs in terms of personal life adjustment whereas CBZ science teachers have lesser needs in relation to personal life adjustment. In other words, PCM Science teachers have higher personal life adjustment and CBZ Science teachers of secondary schools have lower personal life adjustment.

57. PCM science teachers have higher needs in terms of financial adjustment & job satisfaction whereas CBZ science teachers have lesser needs in relation to financial adjustment & job satisfaction.

58. PCM and CBZ Science teachers of secondary schools have similar elaboration-verbal creativity.

59. PCM and CBZ Science teachers of secondary schools have similar elaboration-non-verbal creativity.

60. PCM Science teachers have lower originality-verbal creativity and CBZ Science teachers of secondary schools higher originality-verbal.
61. PCM Science teachers have lower originality non-verbal creativity and CBZ Science teachers of secondary schools have higher originality- non-verbal creativity.

62. PCM Science teachers of secondary schools have higher and CBZ Science teachers of secondary schools have lower effectiveness in the areas of socio-emotional climate, competency, communication, systematic behaviour, classroom management, clarity, structure, warmth, enthusiasm and opportunity to learn.

63. Kannada medium science teachers have higher Self-awareness, Self-regulation, Motivation, Empathy and Social skills. They are good at both personal competence and Social competence. English medium science teachers have lower Self-awareness, Self-regulation, Motivation, Empathy and Social skills. They are not good at Personal competence and Social competence.

64. Kannada medium science teachers have lower level of emotional exhaustion and English medium science teachers have higher level of emotional exhaustion.

65. Kannada medium science teachers have lower degree of depersonalization and English medium science teachers have higher degree of depersonalization.

66. Kannada medium science teachers have higher degree of personal accomplishment and English medium science teachers have lower degree of personal accomplishment.

67. Kannada medium science teachers have higher extroversion-introversion scores and English medium science teachers have lower extroversion-introversion scores.

68. Kannada medium science teachers have lower neuroticism and English medium science teachers have higher neuroticism scores.

69. Kannada medium science teachers have higher academic and general environment adjustment and English medium science teachers have lower academic and general environment adjustment.
70. Kannada medium science teachers have higher socio-psycho-physical adjustment and English medium science teachers have lower socio-psycho-physical adjustment.

71. Kannada medium science teachers have higher professional relationship adjustment needs and English medium science teachers have lower professional relationship adjustment needs.

72. Kannada medium science teachers have higher personal life adjustment needs and English medium science teachers have lower personal life adjustment needs.

73. Kannada medium science teachers have higher financial adjustment & job satisfaction needs and English medium science teachers have lower financial adjustment & job satisfaction needs.

74. Kannada and English medium Science teachers of secondary schools do not differ significantly with respect to dimensions of creativity i.e. elaboration-verbal, elaboration-non-verbal, originality- verbal and originality- non-verbal. Kannada and English medium science teachers have similar elaboration-verbal, elaboration-non-verbal, originality- verbal and originality- non-verbal creativity.

75. Kannada medium science teachers have higher teacher effectiveness and English medium science teachers have lower teacher effectiveness in terms of the areas of socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn.

76. Junior science teachers (<5yrs) have lower Self-awareness, Self-regulation, Motivation, Empathy, Social skills, Personal competence and Social competence and Senior science teachers (>5yrs) have higher Self-awareness, Self-regulation, Motivation, Empathy, Social skills, Personal competence and Social competence.

77. Junior science teachers (<5yrs) have higher emotional exhaustion burnout and Senior science teachers (>5yrs) have lower emotional exhaustion burnout.
Junior science teachers (<5yrs) have higher depersonalization burnout and Senior science teachers (>5yrs) have lower depersonalization burnout.

Junior science teachers (<5yrs) have lower personal accomplishment scores and Senior science teachers (>5yrs) have higher personal accomplishment scores.

Junior science teachers (<5yrs) have lower extroversion-introversion scores and Senior science teachers (>5yrs) have higher extroversion-introversion scores.

Junior science teachers (<5yrs) have higher neuroticism scores and senior science teachers (>5yrs) have lower neuroticism scores.

Junior science teachers (<5yrs) have lower adjustment needs with academic and general environment and senior science teachers (>5yrs) have higher adjustment needs with academic and general environment.

Junior science teachers (<5yrs) have lower socio-psycho-physical adjustment needs and senior science teachers (>5yrs) have higher socio-psycho-physical adjustment needs.

Junior science teachers (<5yrs) have lower professional relationship adjustment needs and senior science teachers (>5yrs) have higher professional relationship adjustment needs.

Junior science (<5yrs) teachers have lower personal life adjustment needs and Senior (>5yrs) science teachers have higher personal life adjustment needs.

Junior science teachers (<5yrs) have lower financial adjustment & job satisfaction needs and senior science teachers (>5yrs) have higher financial adjustment & job satisfaction needs.

Science teachers (<5yrs) have lower elaboration-verbal creativity and senior science teachers (>5yrs) have higher elaboration-verbal creativity.

Junior science teachers (<5yrs) have lower elaboration-non-verbal and senior science teachers (>5yrs) have higher elaboration-non-verbal creativity.
89. Junior science teachers (<5yrs) have higher originality verbal creativity and senior science teachers (>5yrs) have lower originality verbal creativity.

90. There is no significant difference between creativity of junior science teachers (< 5yrs) and senior science teachers (> 5 yrs) with respect to the originality non-verbal creativity.

91. Junior science teachers (<5yrs) have lower scores in the areas of effectiveness in terms of socio-emotional climate, competency, communication, systematic behaviour, class room management, clarity, structure, warmth, enthusiasm and opportunity to learn.

92. As emotional intelligence is increased the personal accomplishment, personality needs, adjustment needs, creativity and effectiveness are also increased linearly in the case of science teachers of secondary schools.

93. Increase in emotional exhaustion burnout leads to increase in the depersonalization burnout and personality needs of science teachers of secondary schools.

94. Increase in the emotional exhaustion dimension of burnout leads to decrease in the personal accomplishment dimension of burnout, adjustment, creativity and effectiveness of secondary school science teachers.

95. Depersonalization burnout decreases with increase in personality scores of secondary school science teachers.

96. Depersonalization increases with the decrease in personal accomplishment, adjustment, creativity and effectiveness of secondary school science teachers.

97. Personal accomplishment increases with increase in the levels of adjustment, creativity and effectiveness of secondary school science teachers.

98. Personal accomplishment burnout increases with decrease in personality needs of science teachers of secondary school teachers.

99. A significant and positive relationship was found between personality needs and creativity. Personality scores increase with increase in creativity of secondary school teachers.
100. Personality needs increase with increase in adjustment of secondary school science teachers.

101. Adjustment needs increase with increase in creativity. Adjustment needs decrease with increase in teacher effectiveness.

102. A significant and positive relationship was observed between creativity and effectiveness. Creativity increases with increase in the effectiveness of secondary school science teachers.

103. Emotional intelligence is increased as adjustment, creativity and effectiveness are increased linearly of state government secondary school science teachers.

104. Emotional exhaustion dimension of burnout leads to increase in the depersonalization burnout, personality needs and adjustment needs of state government secondary school science teachers.

105. Increase in emotional exhaustion leads to decrease in the personal accomplishment, creativity and effectiveness of state government secondary school teachers.

106. Depersonalization burnout increases with increase in personality needs of state government secondary school science teachers.

107. Depersonalization increases with decrease in personal accomplishment, creativity and effectiveness of state government secondary school science teachers.

108. Personal accomplishment burnout increases with increase in creativity and effectiveness of state government secondary school science teachers.

109. Personal accomplishment increases with decrease in personality needs and adjustment needs of state government secondary school science teachers.

110. Personality needs increase with increase in adjustment needs of state government secondary science school teachers.

111. As personality needs are increased, creativity and effectiveness of state government secondary school science teachers are decreased.
112. Level of adjustment increases with increase in creativity and effectiveness of state government secondary school science teachers.

113. A significant and positive relationship was creativity and effectiveness. Creativity increases with the increase in the effectiveness of state government secondary school science teachers.

114. Emotional intelligence is increased as the emotional exhaustion burnout, depersonalization burnout, personality needs and adjustment needs are decreased linearly of central government secondary school science teachers.

115. Emotional exhaustion leads to increase in the depersonalization, personality needs and adjustment needs of central government secondary school science teachers.

116. Increase in emotional exhaustion dimension of burnout leads to decrease in the personal accomplishment dimension of burnout, creativity and effectiveness of central government secondary school science teachers.

117. Depersonalization increases with increase in personality needs and adjustment needs of central government secondary school science teachers.

118. Depersonalization increases with decrease in personal accomplishment, creativity and effectiveness of central government secondary school science teachers.

119. Personal accomplishment increases with increase in creativity and effectiveness of central government secondary school science teachers.

120. Personal accomplishment increases with decrease in personality needs and adjustment needs of central government secondary school science teachers.

121. Personality needs increase with increase in adjustment needs of central government secondary school science teachers.

122. Personality needs increase with decrease in creativity and effectiveness of central government secondary school science teachers.
123. A significant and positive relationship was observed between adjustment and creativity. Adjustment needs increase with increase in creativity of central government secondary school teachers.

124. A significant and positive relationship was found between creativity and effectiveness. Creativity increases with increase in the effectiveness of central government secondary school science teachers.

125. The self-awareness significantly increases with increase in self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools.

126. The self-regulation significantly increases with increase in motivation, empathy, social skills, personal competence and social competence of science teachers of secondary schools.

127. The motivation significantly increases with increase in empathy, social skills, personal competence and social competence of science teachers of secondary schools.

128. The empathy significantly increases with increase in social skills, personal competence and social competence of science teachers of secondary schools.

129. The social skills significantly increase with increase in personal competence and social competence of science teachers of secondary schools.

130. The personal competence increases with increase in social competence of science teachers of secondary schools.

131. The self-awareness significantly increases with increase in self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

132. The self-regulation significantly increases with increase in motivation, empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.
133. The motivation significantly increases with increase in empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

134. The empathy significantly increases with increase in social skills, personal competence and social competence of science teachers of state government secondary schools.

135. The social skills significantly increase with increase in personal competence and social competence of science teachers of state government secondary schools.

136. The personal competence increases with increase in social competence of science teachers of state government secondary schools.

137. The self-awareness significantly increases with increase in self-regulation, motivation, empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

138. The self-regulation significantly increases with increase in motivation, empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

139. The motivation significantly increases with increase in empathy, social skills, personal competence and social competence of science teachers of state government secondary schools.

140. The empathy significantly increases with increase in social skills, personal competence and social competence of science teachers of state government secondary schools.

141. The social skills significantly increase with increase in personal competence and social competence of science teachers of state government secondary schools.

142. The personal competence increases with increase in social competence of science teachers of state government secondary schools.
143. The depersonalization burnout is a significant predictor of effectiveness of science teachers of secondary schools.

144. The personal accomplishment is a significant predictor of effectiveness of science teachers of secondary schools.

145. The creativity is a significant predictor of effectiveness of science teachers of secondary schools.

146. The personality needs and adjustment needs are not the significant predictors of teacher effectiveness of science teachers of secondary schools.

147. The depersonalization burnout is a significant predictor of effectiveness of science teachers of state government secondary schools.

148. The personal accomplishment burnout is a significant predictor of effectiveness science teachers of state government secondary schools.

149. The Personality Needs is a significant predictor of effectiveness of science teachers of central government secondary schools.

150. The Adjustment needs is a significant predictor of effectiveness of science teachers of central government secondary schools.

151. The indirect effects of Emotional intelligence through Depersonalization and Creativity are found to be statistically significant on effectiveness of science teachers of secondary schools.

152. The indirect effects of Emotional exhaustion dimension of burnout through Depersonalization, Personal accomplishment, Personality Needs and Creativity are found to be statistically significant on effectiveness of science teachers of secondary schools.

153. The indirect effects of Depersonalization through Emotional intelligence, Emotional exhaustion and Personal accomplishment are found to be statistically significant effectiveness of science teachers of secondary schools.

154. The indirect effects of Personal accomplishment through Emotional intelligence, Emotional exhaustion, Depersonalization, Personality Needs,
Creativity on teacher effectiveness are found to be statistically significant on the effectiveness of science teachers of secondary schools.

155. The indirect effects of Personality Needs through Emotional exhaustion, Personal accomplishment, Personality Needs, Adjustment needs, Creativity teacher effectiveness are found to be statistically significant.

156. The indirect effects of Adjustment needs through Personality Needs are found to be significant on effectiveness of science teachers of secondary schools.

157. The indirect effects of Creativity through Emotional intelligence, Emotional exhaustion, personal accomplishment, Personality Needs are found to be statistically significant on effectiveness of science teachers of secondary schools.

158. The direct effect of Emotional intelligence, Depersonalization Burnout, Personal accomplishment Burnout and Personality Needs on science teachers of state government secondary schools are found to be statistically significant.

159. The indirect effects of Emotional intelligence through Emotional exhaustion Burnout, Depersonalization Burnout, Adjustment needs and Creativity are found to be statistically significant.

160. The indirect effects of Emotional exhaustion Burnout through Emotional intelligence, Depersonalization Burnout and Personal accomplishment Burnout are found to be statistically significant.

161. The indirect effects of Depersonalization Burnout through Emotional intelligence, Emotional exhaustion Burnout, and Personal accomplishment Burnout, Adjustment needs and Creativity are found to be statistically significant.

162. The indirect effects of Personal accomplishment Burnout through Emotional intelligence, Emotional exhaustion Burnout and Depersonalization Burnout are found to be statistically significant.
163. The indirect effects of Personality Needs through Adjustment needs and Creativity are found to be statistically significant.

164. The indirect effects of Adjustment needs through Emotional intelligence, Emotional exhaustion Burnout, Depersonalization Burnout, Personality Needs and Creativity are found to be statistically significant.

165. The indirect effects of Creativity through Emotional intelligence, Emotional exhaustion Burnout, Depersonalization Burnout, Personality Needs and Adjustment needs are found to be statistically significant.

166. The direct effect of Emotional intelligence, Personality Needs and Adjustment needs are found to be statistically significant.

167. The indirect effects of Emotional intelligence through Emotional exhaustion Burnout, Depersonalization Burnout, Personal accomplishment Burnout, Personality Needs and Adjustment needs are found to be statistically significant.

168. The indirect effects of Emotional exhaustion Burnout through Emotional intelligence, Depersonalization Burnout, Personal accomplishment Burnout, Personality Needs and Adjustment needs are found to be statistically significant.

169. The indirect effects of Depersonalization Burnout through Emotional intelligence, Emotional exhaustion Burnout, Personal accomplishment Burnout and Personality Needs are found to be statistically significant.

170. The indirect effects of Personal accomplishment Burnout through Emotional intelligence, Emotional exhaustion Burnout, Depersonalization Burnout, Personality Needs and Adjustment needs are found to be statistically significant.

171. The indirect effects of Personality Needs through Emotional intelligence, Emotional exhaustion Burnout, Depersonalization Burnout, Personal accomplishment Burnout, Adjustment needs and Creativity are found to be statistically significant.
172. The indirect effects of Adjustment needs through Emotional intelligence, Emotional exhaustion Burnout, Personal accomplishment Burnout and Personality Needs are found to be statistically significant.

173. The indirect effects of Creativity through Personality Needs are found to be statistically significant.

5.14 RESULTS

It would be recalled that the present study sought to examine the association of Emotional Intelligence Burnout, Personality Needs, Adjustment Needs and Creativity with Teacher Effectiveness of science teachers of state and central government secondary schools. The results of the study revealed that the different dimension of all the variables such as emotional intelligence, burnout, personality needs, adjustment needs and creativity were found to be significantly associated with teacher effectiveness in general.

The investigator has made an attempt here to put the summary of the results of the entire study in a nutshell as follows:

Effective science teachers have higher emotional intelligence, lesser degree of burnout, higher personality and adjustment needs and higher creativity. Whereas non effective science teachers have lower emotional intelligence, higher degree of burnout, lesser personality and adjustment needs and lower creativity.

State government secondary school science teachers have higher emotional intelligence, lesser degree of burnout, average personality and adjustment needs and lower creativity and greater teacher effectiveness. Whereas central government secondary school science have lower emotional intelligence, higher degree of burnout, average personality and adjustment needs, higher creativity and lower teacher effectiveness.

Male science teachers and female science teachers have registered similar emotional intelligence burnout, personality and adjustment needs, creativity and teacher effectiveness.
PCM science teachers have higher emotional intelligence, lesser degree of burnout, higher personality and adjustment needs and non significant creativity and higher effectiveness. Whereas CBZ science teachers have lower emotional intelligence, higher degree of burnout, lesser personality and adjustment needs and non-significant creativity and lower teacher effectiveness.

Kannada medium science teachers have higher emotional intelligence, lesser non significant burnout, higher personality and adjustment needs, non significant creativity and greater teacher effectiveness. Whereas English medium science have lower emotional intelligence, non significant burnout, lesser personality and adjustment needs, non significant creativity and lower teacher effectiveness.

Junior science teachers are not emotionally intelligent, have non significant burnout, lesser personality adjustment needs, lower creativity and lower teacher effectiveness. Whereas senior science teachers are emotionally intelligent, have lower degree of burnout, higher personality, adjustment needs and higher teacher effectiveness.

The results of correlation analysis of the present study have revealed that, there is significant and negative relationship between emotional intelligence and different dimensions of burnout such as emotional exhaustion and depersonalization. It is also found that emotional intelligence is positively correlated with personality needs and personal accomplishment burnout.

There is a significant positive relationship between emotional intelligence and teacher effectiveness in the case of state government secondary school science teachers. The same result was obtained even in the case of central government secondary school science teachers.

When the total contribution of independent variables on effectiveness of science teachers of secondary schools was considered, it was found that emotional intelligence is the first predictor of effectiveness followed by personal accomplishment burnout creativity and emotional exhaustion.

Emotional intelligence, depersonalization burnout, personal accomplishment burnout and creativity are significant predictors of teacher effectiveness.
The effects of emotional exhaustion personality needs and adjustment needs are found to be non-significant, when the whole sample of science teachers was taken into consideration. But personal accomplishment burnout is the first best contributor of effectiveness of State government secondary school science teachers followed by emotional intelligence, creativity and adjustment needs. It is also found that personal accomplishment burnout is the first contributor of effectiveness followed by emotional exhaustion burnout, personality needs of science teachers of Central government secondary schools.

The direct effect of emotional intelligence, depersonalization, personal accomplishment and creativity on effectiveness of science teachers of secondary schools are found to be statistically significant.

5.15 DISCUSSION

a) Emotional intelligence and teacher effectiveness: From the results obtained in the present study, it was found that the effective science teachers have higher emotional intelligence and non-effective science teachers have lower emotional intelligence. That means they differ significantly with respect to emotional intelligence. The reason might be that both the concepts of emotional intelligence and teacher effectiveness have some similarities of the underlying structure in the sense that, both link cognitive and affective factors of human personality. Emotional Intelligence refers to “a different way of being smart. It includes knowing your feelings and using them to make good decisions; managing your feeling well; motivating yourself with zeal and persistence; maintaining hope in the face of frustration; exhibiting empathy and compassion; Interacting smoothly; and managing your relationship effectively”. The dimensions of emotional intelligence such as self awareness, self-regulation, motivation, empathy and social skills have direct bearing on the dimensions of teacher effectiveness. It appears that people with emotional intelligence skills in terms of self-awareness, self-regulation, motivation, empathy and social skills would have higher teacher effectiveness because of emotional stability, control and expression. As Malandro et. al., pointed out, the teachers who are not aware of their own feelings cannot make intelligent choices. They are often low in expressiveness- they do not show
their feelings clearly through facial expressions, body language or other cues most of use to recognize others' feelings. It is proved that a set of specific emotional competencies including empathy, systematic behavior and interaction in teaching distinguishes the effective teachers from those who are merely good enough to keep the jobs. Those science teachers who are emotionally intelligent can create conducive socio-emotional climate, communicate with clarity, manage the classrooms properly, exhibit warmth behavior and can enthuse the student to learn effectively and can create ample opportunities to learn which might lead to the enhancement of teacher effectiveness. Thus EI may contribute to greater teacher effectiveness.

The results of the study conducted by Gupta (1976), Satyagirirajan (1985), Bass (1961), Wangoo (1984), Lamke (1951), Jones (1956), Balachandram indirectly support the findings of the present study. Madden (2000) study directly supports the findings showing that the teacher effectiveness is related to teacher emotions. So, the findings of the present study may be accepted widely. This idea needs to be examined further with more varied examples and inclusions of more educationally relevant items.

b) Burnout and Teacher Effectiveness: The present study revealed that the effective science teachers have lower degree of burnout and non-effective science teachers have higher degree of burnout. Teacher effectiveness is negatively predicted by burnout. The reason might be that burnout as represented by emotional exhaustion and depersonalisation might prevent teacher to get the cooperation from others and in turn disqualifies teachers in establishing emotional rapport with students, colleagues, authorities and others. Since the curricular and co-curricular transactions between teacher and the students depend much upon emotional supports, the success and effectiveness of a teacher too might depend upon the degree of emotional exhaustion and depersonalisation. Both components of burnout jointly might constitute to decreasing teacher's effectiveness in his profession. By implication, it might be argued that EI competencies, lesser degree of burnout would be helpful in increasing teacher effectiveness through increasing personal effectiveness. At the same time personal accomplishment, the other dimension of burnout, predicted teacher effectiveness positively. The reason might be that the teachers who are very studious enough to accomplish something
good always would be successful in becoming better teachers. The results of the
studies of other investigators viz., Madden (2000), Xu, et al., (2005), Xu, Fuming
et al (2005) indirectly support the findings of the present study. Other parallel
research studies in this regard could not be traced by the investigator. So, the
results of the present study can be accepted.

e) **Personality needs and teacher effectiveness:** The variables called personality
needs and adjustment needs have emerged as the variables that influence the
effectiveness of science teachers. Those science teachers who have registered
higher scores in extrovert–introverts dimension are found to be more effective
than those who have scored less on these dimensions of the variable. The reason
might be that these teachers are more extroverts–introverts and they have
developed in them certain personality traits required for becoming teachers with
greater effectiveness. But it was most unexpected that these variables are found to
be the non–significant predictors of effectiveness of science teachers. However
the non–significant prediction of adjustment needs and personality needs does not
stand logical reasoning. This idea needs to be cross–validated. No parallel study of
exact nature can be quoted here for comparison of results.

The results obtained from the study recorded that effective science teachers
have lesser neuroticism scores and non–effective science teacher have higher
neuroticism scores and it is also recorded that effective science teachers have higher
scores on extroversion–introversion and non–effective science teachers have lower
scores on extroversion–introversion. In other words, as per the operational definition
of the terms ‘personality needs’, effective science teachers have greater number of
personality needs and non-effective science teachers have lesser number of
personality needs. The reason might be that the effective science teachers are more
extrovert-introverted rather than neurotic.

The results of the research studies by Gage (1963), Gupta (1976), Gupta
(1974), Parikh (1984), More (1988), Swaroop (1981), are in concurrence with the
findings of the present study. But the results of the studies conducted by Sora (1984),
and Mutha (1980) are contradictory. As majority of the studies in India and abroad
support directly or indirectly the findings of the present study, the outcomes of the study may be accepted widely.

d) **Adjustment needs and teacher effectiveness**: The results of the present study indicated that the effective science teachers have greater adjustment needs and non-effective science teachers have lesser number of adjustment needs. In other words, effective science teachers are well adjusted whereas non-effective science teachers are not well adjusted. Further the results indicate that adjustment needs is not a significant predictor of teacher effectiveness of science teacher of secondary schools. The results of the research studies conducted by Gupta (1988), Singh (1978), Khanna (1985), Jones (1956), Chhaya (1974) indirectly support the findings of the study. The results of the study conducted by Grewal (1976) shows that adjustment was one of the main predictors of teacher effectiveness. Hence the results of the present study can be accepted. But there is a scope for further research with regard to the understanding of the relationship between adjustment and teacher effectiveness.

e) **Creativity and Teacher effectiveness**: The results obtained in the study reveal that effective science teachers have higher creativity and non effective science teachers have lower creativity. In other words effective science teachers are more creative and non-effective science teachers are less creative. Further it was recorded that creativity is a significant predictor of effectiveness of science teachers of secondary schools. The reason might be that the creative science teachers can think of new and novel ways, methods, approaches and techniques of teaching science subject without merely following traditional and dogmatic approaches. The novel means they adopt, may induce and inculcate interest among students towards the learning of scientific concepts. This finally enhances the effectiveness of teaching. The study conducted by Singh (1991) concluded that creativity was considered better predictor of teaching effectiveness and the studies conducted by others are in line with findings of the present study. So this finding of the study may be accepted.

f) **Emotional intelligence and burnout**: The results of the present study indicated that there is a significant and negative relationship between emotional intelligence and burnout. It means that emotional intelligence is increased as burnout is decreased. The reason might be that the teachers who better deal with emotional
problems experience less burnout caused by teaching. The findings of the studies conducted by Williams (1989), You (1998), Fu-ming (2003), Mendes (2003), Naina (2005) and Chan (2006) indirectly support the findings of the present study. So, the findings of the present study can be accepted widely.

g) **Demographic variables and the results of the present study.**

(i) **Gender and emotional intelligence:** The findings of the present study show that male and female science teachers of state and central government secondary schools do not differ in their emotional intelligence. In the present study gender differences could not reach the significance level. Male and female science teachers both evinced almost similar level of EI. The results of the studies by DiFabio (2005) and Tyagi (2003) are in line with the findings of the present study. So, the finding of the present study may be accepted.

(ii) **Gender and burnout:** The results of the present study revealed that male and female science teachers of state and central government secondary schools do not differ in all the dimensions of effectiveness and the level of burnout. The findings of the studies by Quigley (1987), Burke (1996), Walker (1997), Lau (2002), Schwab (1981), Gupta and Dan (1990) Robiero and Bhargava (1994) recorded that there exists a significant relationship between burnout and gender. But the findings of the studies by Mabry (2006), Grover (1983), are in line with the findings of the present study that there is no statistical difference in burnout between male and female teachers. Hence there is a room for further research and final conclusions about relationship of gender with burnout. The results of the present study may be accepted.

(iii) **Gender and personality:** The results of the present study reveal that male and female science teachers have similar personality needs and there is no significant difference among them. Sora (1984) found that there was no difference between male and female teachers on extraversion. As the present investigator could not trace out any other study (to the best of the investigators knowledge) related to this aspect, the findings of the study may be accepted or rejected on the grounds of the results of the forthcoming studies in this area.
(iv) **Gender and adjustment needs:** The results of the present study indicate that male and female science teachers do not offer significantly with respect to their adjustment needs. The study conducted by Prasad (1986) stand contradictory to these findings.

(v) **Gender and teacher effectiveness:** The results obtained from the present study show that male and female science teachers are similar in all the dimensions of teacher effectiveness and they do not differ significantly in any of the dimensions. The findings of the studies by Chhaya (1974), Mutha (1980), Mohopatra (1987), Biswas and De (1995) are not in concurrent with the results of the present study. But the results of the research studies conducted by Thamilamani (1990) Passi and Sharma (1982), Subbarayan (1985), Indira and Pradhan (1997) are in line with the findings of the present study. Thus, it can be concluded that the relationship between gender and teacher effectiveness is still a matter of controversy and needs to be clarified by further researches.

(vi) **Subjects of teaching and emotional intelligence:** The findings of the present study show that PCM science teachers have higher emotional intelligence than CBZ science teachers in relation to the dimensions of emotional intelligence such as self-awareness, self-regulation, empathy, and social skills. But there is no significant difference between PCM and CBZ science teachers with respect to the dimension of emotional intelligence namely, the competence of motivation. The exact reasons for this kind of difference are not evident and available. Hence there is a room for making attempts to understand and develop the factors that boost up the emotional intelligence of both PCM and CBZ science teachers.

(vii) **Subjects of teaching and burnout:** It is indicated by the results of the present study that PCM and CBZ science teachers have similar level of depersonalization burnout. PCM science teachers have lower degree of emotional exhaustion but a higher degree of personal accomplishment. As there is a real dearth of previous research studies in this regard the results of the present study may be accepted and verified in future studies.

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(viii) **Subjects of teaching and personality needs:** It can be seen from the results obtained by the present study that PCM and CBZ science teachers do not differ in their personality needs. The reason might be that the subjects of teaching have no direct bearing on the different types of personality.

(ix) **Subjects of teaching and adjustment needs:** It is indicated by the results of the present study that PCM science teachers have lesser adjustment needs compared to CBZ science teachers. This might be due to the reasons unknown hitherto. So, there is a room for studying the factors such as the nature of the subject matter, methods of teaching that lead to adjustment among teachers who teach different subjects in secondary schools.

(x) **Subjects of teaching and creativity:** The findings of the present study reveal that there is no significant difference between PCM and CBZ teachers with respect to creativity. This might be due to the nature of creativity that it is not confined to any individual, and it is said to be a function of natural endowment as well as nurturing. More over creativity depends not upon the subject of teaching but more upon divergent thinking.

(xi) **Subject of teaching and teacher effectiveness:** It is found though the present study that PCM and CBZ science teachers of secondary schools differ significantly with respect to teacher effectiveness. PCM science teachers are more effective when compared to CBZ science teachers. This finding is open for debate and further research. Indira (1997) in her study observed that the subject of teacher was not an influential factor for teacher effectiveness. So the finding of the present study may be accepted.

(xii) **Type of school and other variable:** It is revealed from the present study that the science teachers of state government secondary schools and science teachers of central government secondary schools do not differ significantly with respect to emotional intelligence. The reason might be that the type of school has nothing to do with the abilities involved in emotional intelligence. The same kind of results are obtained in relation to
type of school and other variables such as burnout, personality needs, adjustment needs and creativity.

Science teachers of state government secondary schools differ significantly with respect to teacher effectiveness. Science teachers of state government secondary schools have higher teacher effectiveness when compared to the science teachers of central government secondary schools. The reason might be that the teachers who teach in state government secondary schools can establish good and positive emotional, social, and academic rapport with students because they are well versed with the mother tongue of the students unlike central government secondary school science teachers who are forced to establish rapport with the help of the foreign language in which both the teacher and the taught are not well acquainted with. Moreover the academic atmosphere in state and central government schools differ with each other in a number ways the discussion of which would not be relevant at this juncture.

(xiii) **Experience and emotional intelligence:** From the result obtained in the present study, it is found that junior science teachers of secondary schools (< 5 Years) have lower emotional intelligence and senior science teachers of secondary schools have higher emotional intelligence. The reason might be that with more experience, teachers are better at identifying emotions and they are less susceptible to the emotions of others. As it is proved by Daniel Goleman, Mayer and others through empirical evidences that emotional intelligence develops with age and experience from childhood to adulthood. It may be taken for granted that it is quit natural for senior science teachers to possess higher emotional competencies. Emotional competence can be learned at any point in life. It is said that the real knowledge of how to do a job is brought only by experience. However it can be concluded at this juncture that the senior teachers displayed greater emotional competence than their younger counterparts.

(xiv) **Experience and burnout:** The results of the present study notice that junior science teachers have higher degree of burnout and senior science teacher have lower degree of burnout. The reason, might be that as the
days, months years and decades go by one learns to examine his emotion and to establish control over the expression of his emotions. The results obtained by other investigators, viz., salas (2005), Ito (2002), Antonion et al., (2006), Mohammed (1995), Schwab and Iwanicki (1982), Mishra (1992), Robiero and Bhargava (1994) are in line with the findings of the present study. But the results obtained by the studies of Hock (1988), and wasterhouse (1979) Fong (2000) stand opposite to the above results. Anyway, as majority of the studies support the findings of the present study they may be accepted widely.

(xv) **Experience and Personality:** It is found in the present study that junior science teachers have lower extraversion–introversion scores and senior science teachers have higher extraversion–introversion scores. This leads us to conclude that experience has a direct impact upon the personality needs of science teachers.

(xvi) **Experience and adjustment:** It is indicated through the results of the present study that junior science teachers have lower adjustment needs and senior science teachers have higher adjustment needs.

(xvii) **Experience and creativity:** Junior science teachers have lower creativity and senior science teacher have higher creativity. This might be due to the fact that creativity is innate as well as acquired cannot be ruled out. It is also observed that creativity is a predictor of teaching effectiveness.

(xviii) **Experience and teacher effectiveness:** The present study reveals that senior science teachers are more effective in teaching and junior science teacher are less effective in teaching. This might be due to the reason that experience makes a man perfect. The results of other investigators viz., Beckran (1993), Padmanabhaiah (1996), and Rosenholy (1986) are in tune with the findings of the present study. So they may be accepted widely.

(xix) **Medium and Emotional Intelligence:** In the present study it is found that Kannada medium science teachers have higher self- awareness, self- regulation, motivation, empathy and social skills when compared to
English medium science teachers. They are good at both personal and social competencies. That means that Kannada Medium science teachers have higher emotional intelligence. This might be due to the fact that science teachers of Kannada medium variably find it easier to involve in curricular and co-curricular transactions and as they could establish a conductive socio–emotional climate in the classroom through better communication in the mother tongue of the students. They are also able to manage the classroom by natural interaction and provide natural warmth affection and thus enthuse the students in effective learning.

(xx) **Medium and burnout**: The results of the present study show that Kannada and English medium science teachers have similar burnout levels. Since burnout depends upon a number of individual and personal factors, it may perhaps be argued that burnout is not influenced by the medium of instruction.

(xxii) **Medium and personality needs**: The results of present work showed that medium has something to do with personality needs of teachers. It is found that Kannada medium science teachers have lesser number of personality needs when compared with English medium science teachers who have greater number of personality needs. It is also found that Kannada Medium science teachers are more extrovert–introverts when compared to English medium science teachers. No previous related research studies, which support or contradict this finding of the present study are not available.

(xxii) **Medium and Adjustment needs**: The present study showed a positive relationship between medium of instruction and adjustment needs. It is found that Kannada medium science teachers are better adjusted when compared to English medium science teachers. Perhaps, the medium of instruction may influence the way the teachers adjust to their environment in their academic and general areas.

(xxii) **Medium and Creativity**: The results of the present study revealed that Kannada medium science teachers and English medium science teachers donot differ significantly with respect to creativity. Here it can be argued
that creativity does not depend upon the medium and it definitely is influenced by the way of thinking i.e., divergent thinking.

(xxiv) **Medium and Teacher effectiveness:** The present study showed that Kannada medium science teachers have higher teacher effectiveness and English medium science teachers have lower teacher effectiveness. The reason might be that Kannada medium schools maintain better environmental quality at the campus in terms of natural interaction, communication and social relationship which enhances the overall effectiveness of teacher in teaching. Kannada medium children have the option to understand the scientific concepts in their mother tongue and express effectively. That means this advantage of medium results in the enrichment of teachers which enhances teacher effectiveness.

h) **Predictors of Teacher effectiveness:** The results pertaining to the study revealed that the emotional intelligence, depersonalization burnout, personal accomplishment are the significant predictors of teacher effectiveness. It is also revealed that personality needs and adjustment needs are not significant predictors of teacher effectiveness. The reason might be that emotional intelligence and its different dimensions such as self-awareness, self regulation, motivation empathy and social skills may make science teachers more genuine and honest about the educational institutional goals. They may give preference to professional goals over one’s individual goals and make them concerned with the institution more honestly. The true commitment and devotion and dedication, are emotional ones. Thus Emotional Intelligence may contribute towards a grater professional commitment. The two dimensions of burnout viz., depersonalization burnout and personal accomplishment burnout are found to be the negative and positive predictors of teacher effectiveness respectively. As a whole, burnout was found to be a negative predictor of teacher effectiveness. The reason may be that depersonalization burnout might lead to lesser effectiveness in teaching. It does not help science teachers to control over their negative emotions and impulsiveness at teaching job without being influenced much by positive affective processes. It is more likely that when one teacher has and shows control over negative emotions at teaching work other teachers also get prompted to have
control over their impulses. It may act like a chain reaction in controlling negative emotions that increase overall teacher effectiveness and institutional effectiveness.

Variables like personality needs and adjustment needs are found to be non significant on teacher effectiveness of science teacher of secondary schools. This result was a little unexpected. This idea needs to be tested further for getting a more conclusive idea regarding the relation of personality and adjustments needs with teacher effectiveness.

The results of the present study reveal that the effect of creativity was found to be positive and significant on effectiveness of science teachers of secondary schools. In other words creativity is a significant predictor of effectiveness of science teachers of secondary schools.

5.15 EDUCATIONAL IMPLICATIONS

Any research effort becomes worthwhile only when it specifies some of the important educational implications. The findings of the present study have certain significant and meaningful educational implications for teachers, teacher educators, parents, school guidance and counselors and educational administrators. It is scientifically proved that the success of individuals work is 80 percent dependent on emotional intelligence and only 20 percent on IQ.

1. The results of the present study show that the secondary school science teachers who possess higher levels of emotional intelligence, are lesser burnout more extrovert-introverts, well adjusted, and are creative effective in teaching. Therefore the identification of the areas of emotional intelligence, degree of burnout, personality type, level of adjustment, creativity would help the secondary school science teachers to maximize in their teacher effectiveness and in their personal life.

2. Measures should be taken up to improve and sustain the level of emotional intelligence of secondary school science teachers by providing congenial and conducive atmosphere for teaching, autonomy and independence in teaching as the results of the study reveal that there is a positive correlation between
emotional intelligence and teacher effectiveness, emotional intelligence and other variables such as burnout, and creativity of teachers.

3. Emotional intelligence of teachers during their training course in teacher-training institutions must be assessed as it is one of the important correlate of teacher effectiveness along with curricular and co-curricular activities.

4. The social, academic and emotional climates of the secondary schools have to be improved, thus enabling the teachers to acquire some abilities which improve emotional intelligence.

5. The results of the present study also revealed that higher the emotional intelligence, the higher is the teacher effectiveness. It is observed that as the emotional intelligence is increased, the burnout decreased, the extraversion – introversion scores increased and the level of adjustment is increased. Therefore adequate and innovative measures should be taken up to boost up the emotional intelligence potential among the teachers as it will surely help in bringing right actions and behaviors on the part of the teachers to lead better, contented and successful professional life in peace and co-operation. Hence teachers must be trained accordingly.

6. Teacher training programmes must include the practical strategies and programmes to develop emotional intelligence among teacher trainees. Teacher training institutions are left as the one place communities can turn for creativeness to budding teachers’ deficiencies in emotional competence. Teachers need to be comfortable talking about feelings.

7. Emotional literacy programmes in teacher education institution typically should give prospective teachers several weeks of special training in the different abilities which are the ingredients of emotional intelligence. Emotional literacy programs should begin early and run throughout the training course and intertwine efforts in the community. These programs shall provide guidelines to teachers to develop their personal competence by (i) paying attention to their emotional reactions to situations, (ii) introspecting why they respond the way they do (iii) thinking of different ways to interpret hurtful situations and (iv) finding productive ways to cope with emotional
stress and social competence by (i) paying attention to the emotions and behavior of students, colleagues and administrators (ii) trying to understand the behavior of students by discussing it with class teachers and colleagues (iii) identifying the various ways to deal with situations and (iv) examining the effect of their actions.

8. Teachers should also be advised to make conscious, deliberate and conscientious efforts to improve their emotional intelligence potential. Schools and Colleges should be adequately equipped with necessary learning materials which case the teaching of science subjects and thus reduce stress and strain on the part of the teachers and thus make them less prone to burnout, neuroticism and maladjustment. The programmes in teacher education institutions should be designed in such a way that teacher trainees, as a result of their exposure to these programmes, develop certain active coping skills. In addition to this, they should get opportunities to be placed in a good working social environment. These are the determinants of teacher burnout and are necessary to prevent the syndrome of burnout among teachers.

9. General facilities and physical environment, relationship with headmasters, students, and fellow teachers, social environment, teaching workload and administrative assignments are some of the main sources of teacher burnout. Therefore, due care should be taken by the concerned authorities to see that these sources become advantageous to teachers.

10. Personality development programmes, workshops, seminars etc., must be conducted frequently in schools where the teachers invest their service.

11. The most innovative programmes which kindle and nourish creativity among teachers must be designed appropriately on the basics of scientific principles.

12. In the present study, the investigator hypothesized that effective and non-effective teachers differ significantly in terms of their Emotional Intelligence Burnout, Personality Needs, Adjustment Needs and Creativity. The study clearly revealed that teacher effectiveness is influenced by all these variables.
13. There is a need to develop remedial measures keeping in view the qualities identified in the previous studies to overcome the qualities of ineffectiveness among secondary school teachers. This would avoid them by being abused, neglected and emotionally damaged.

14. It has become an urgent necessity that the present day educational institutions provide healthy emotional modeling, nurturing etc., which would result in making the teachers attain moderately high EQ.

5.16 SUGGESTIONS FOR FURTHER RESEARCH

The following suggestions are given on the basis of investigator's observations, field work, review of related studies and gaps in the present study.

- Emotional intelligence scale for teachers should be standardized on the Indian population, which can be used for future research.

- A norm table on emotional intelligence can be created, which can be further used to compare the individual profile of the teachers. This can also be a part of routine screening device in educational institutions, colleges of teacher-education and treatment centres.

- Case studies can be undertaken in order to provide a concrete examples of potential uses of being emotionally intelligent.

- An intervention for improving emotional intelligence, for lessening burnout and for nurturing creativity among science teachers may be suggested.

- An intervention for improving personal competence and social competence may be suggested.

- Future research can be done with a cross cultural approach with a larger sample.

- Development of valid and reliable scales to measure the emotional intelligence of secondary school teachers.

- Development of valid and reliable scale and inventory for objective measurement of secondary school teachers’ personality needs and adjustment needs.
• An interaction effect of selected teacher variables on teacher effectiveness of
teachers teaching different subjects in schools.

• A study may be repeated involving larger sample of teachers at the primary or
secondary level.

• A study may be undertaken to investigate the relative contributions of emotional
intelligence, burnout and creativity on teacher effectiveness of all categories of
teachers

• In the present study teachers teaching effectiveness is rated by 3 students. (above
average, average and below average) in order to arrive at efficiency index. A
study may be undertaken involving large number of students to assess teachers’
teaching effectiveness.

• A similar study may be undertaken to investigate the interaction effect of
teacher’s emotional intelligence, teacher’s personality needs, teacher’s
adjustment needs, teacher’s creativity and teacher’s teaching effectiveness at the
primary level, +2 level and at the university level.

• A study with the same design may be undertaken involving teacher educators
emotional intelligence, burnout level, personality and adjustment and creativity
on teacher effectiveness of teacher educators.

• A study may be undertaken involving teacher’s job satisfaction on teaching
effectiveness

• A comparative study of teachers serving at primary, secondary, pre-university
and university level may be undertaken with the same research design.

• A comparative study may be undertaken to investigate the interaction effect of
emotional intelligence, burnout, creativity, and teaching effectiveness of teachers
teaching in rural and urban areas.