CHAPTER - V

THE SUMMARY OF THE IMPORTANT FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.01. INTRODUCTION:

The present study investigation, it may be recalled, has the following objectives. To study:

i) The level of perceived techno-pedagogical competency of teachers,

ii) The level of teachers’ anxiety towards the use of instructional aids in teaching,

iii) Teachers’ attitude towards using new technology,

iv) The significance of the difference if any, between the various categories of sub-samples divided on the basis of

a) Gender

b) Locality of the school

c) Type of the school

d) Marital status

e) Teaching subject

f) Type of the family and
g) Age

in respect of their perceived techno-pedagogical competency,

v) The significance of the difference if any, between the various categories of sub-samples divided on the basis of

a) Gender
b) Locality of the school
c) Type of the school
d) Marital status
e) Teaching subject
f) Type of the family and
g) Age

in respect of their anxiety towards the use of instructional aids in teaching,

vi) The significance of the difference if any, between the various categories of sub-samples divided on the basis of

a) Gender
b) Locality of the school
c) Type of the school
d) Marital status
e) Teaching subject
f) Type of the family and
g) Age

in respect of their attitude towards using new technology,

vii) The nature of the relationship existing between teachers’ perceived techno-pedagogical competency and their anxiety towards the use of instructional aids in teaching,

viii) The nature of the relationship existing between teachers’ perceived techno-pedagogical competency and their attitude towards using new technology,

ix) The Multiple correlation of personal, school related and research variables with techno-pedagogical competency, and the regression of techno-pedagogical competency on personal, school related and research variables.

In order to realize the above objectives, as many as three tools viz., (i) techno-pedagogical competency scale, (ii) anxiety towards the use of instructional aids in teaching scale, (iii) attitude towards using new technology scale were administered to the same sample of as many as 627 teachers working in the higher secondary schools situated in the Tiruvanamalai District of Tamilnadu, India and the data were statistically analyzed, which yielded many interesting results, that are summarized in the succeeding paragraphs.
5.02. IMPORTANT FINDINGS:

The following are the important findings of the present investigation:

(i) In respect of their entire sample of teachers as many as 0.2 % of them have a extremely high level of techno-pedagogical competency, 5.1% of them have a high level of techno pedagogical competency, 24.1% of them have above average level of techno-pedagogical competency, 52.0% of them have average level of techno-pedagogical competency, 7.7% of them have a below average level of techno-pedagogical competency, 5.2% of them have a low level of techno-pedagogical competency and 5.7% of them have a extremely low level of techno-pedagogical competency. This trend is seen in respect of the sub-samples, too. This finding reveals that the majority of the teachers lie in the range of average to extremely high level of techno-pedagogical competency.

(ii) As many as 5.4 % of them have a extremely low level of anxiety towards the use of instructional aids in teaching, 8.0% of them have a low level of anxiety towards the use of instructional aids in teaching, 11.8% of them have below average level of anxiety towards the use of instructional aids in teaching, 34.3% of them have average level of anxiety towards the use of instructional aids in teaching, 34.1% of
them have a above average level of anxiety towards the use of instructional aids in teaching, 4.0% of them have a high level of anxiety towards the use of instructional aids in teaching and 2.4% of them have a extremely high level of anxiety towards the use of instructional aids in teaching. This trend is seen in respect of the sub-samples, too. This finding reveals that the majority of the teachers lie in the range of average to extremely high level of anxiety towards the use of instructional aids in teaching.

(iii) As many as 0% of them show a highly unfavorable attitude towards using new technology, 0.2% of them show an unfavorable attitude towards using new technology, 97.0% of them shows a neutral attitude towards using new technology, 2.8% of them shows favorable attitude towards using new technology, 0% of them shows an highly favorable attitude towards using new technology. This trend is seen in respect of the sub-samples, too. This finding reveals that the majority of the teachers have a neutral attitude towards using new technology.

(iv) There is a significant difference between the male and female teachers in respect of their techno-pedagogical competency. Moreover the male teachers are found to be better than their female teachers in their techno-pedagogical competency.
(v) There is a significant difference between the teachers working in the urban and rural schools in respect of their techno-pedagogical competency. Moreover the teachers working in rural schools are found to be better than teachers working in urban schools in their techno-pedagogical competency.

(vi) There is no significant difference between the teachers working in the Government schools and private schools in respect of their techno-pedagogical competency.

(vii) There is no significant difference between the married and unmarried teachers in respect of their techno-pedagogical competency.

(viii) For the subjects taught by the higher secondary school teachers

a) There is no significant difference between the teacher teaching science and arts subject in respect of their techno-pedagogical competency.

b) There is no significant difference between the teacher teaching science and language subject in respect of their techno-pedagogical competency.

c) There is no significant difference between the teacher teaching science and vocational subject in respect of their techno-pedagogical competency.
d) There is no significant difference between the teacher teaching arts and language subject in respect of their techno-pedagogical competency.

e) There is no significant difference between the teacher teaching arts and vocational subject in respect of their techno-pedagogical competency.

f) There is a significant difference between the teacher teaching language and vocational subject in respect of their techno-pedagogical competency. Moreover, the teachers teaching vocational subject is found to be better than the teachers teaching language subject in respect of their techno-pedagogical competency.

(ix) There is a significant difference between the teachers from joint family and the nuclear family in respect of their techno-pedagogical competency. Moreover, the teachers from joint family are found to be better than teachers from nuclear family in their techno-pedagogical competency.

(x) The age group of the teachers shows no significant difference in respect of their techno-pedagogical competency.

(xi) In the combinations b) the male and female teachers working in rural schools and c) the male teachers working in urban and rural schools shows significant difference in respect of their techno-pedagogical competency. Moreover, the male teachers working in rural schools are found to be better than
the female teachers working in rural schools and the male teachers working in rural schools are found to be better than the male teachers working in urban schools in respect of their techno-pedagogical competency. But the other pair male and female teachers working in urban schools and female teachers working in urban and in rural schools shows no significant difference in respect of their techno pedagogical competency.

(xii) In the combinations a) the male and female teachers working in Government schools, c) the male teachers working in Government and private schools and d) the female teachers working in Government and private schools shows no significant difference in respect of their techno-pedagogical competency. But in the combination, the male and female teachers working in private schools show a significant difference in respect of their techno-pedagogical competency. Moreover, the male teachers working in private schools are found to be better than the female teachers working in private schools in respect of their techno-pedagogical competency.

(xiii) In the combinations a) the married male and female teachers, c) the married and unmarried male teachers and d) the married and unmarried female teachers shows no significant difference in respect of their techno-pedagogical competency. But in the combination, the unmarried male and female teacher shows significant difference in respect of their
techno-pedagogical competency. Moreover, the male teachers who were unmarried are found to be better than the female teachers who were unmarried in respect of their techno-pedagogical competency.

(xiv) Only in three combinations a) the male and female teachers teaching science subject, i) the male teachers teaching arts and vocational subject and j) the male teachers teaching language and vocational subject shows significant difference in respect of their techno-pedagogical competency. Moreover, the male teachers teaching science subject are found to be better than the female teachers teaching science subject, the male teachers teaching vocational subject are found to be better than the male teachers teaching arts subject and the male teachers teaching vocational subject are found to be better than the male teachers teaching language subject, in respect of their techno-pedagogical competency. But in the other combination with gender and subject taught by the teacher shows no significant difference in respect of their techno-pedagogical competency.

(xv) In the combinations a) the male and female teachers from joint family, b) the male and female teachers from nuclear family and c) the male teachers from joint family and from nuclear family shows no significant difference in respect of their techno-pedagogical competency. But in the
combination, the female teacher from joint family and from nuclear family shows significant difference in respect of their techno-pedagogical competency. Moreover, the female teachers from joint family are found to be better than the female teachers from nuclear family in respect of their techno-pedagogical competency.

(xvi) Only in two combinations b) the male and female teachers belong to the age group above 30 years upto 50 years and d) the male teachers belong to the age group up to 30 years and above 30 years upto 50 years shows significant difference in respect of their techno-pedagogical competency. Moreover, the male teachers belong to the age group above 30 years upto 50 years are found to be better than the female teachers belong to the age group above 30 years upto 50 years and the male teachers belong to the age group above 30 years upto 50 years are found to be better than the male teachers belong to the age group up to 30 years in respect of their techno-pedagogical competency. But in the other combinations with gender and age group of the teachers show no significant difference in respect of their techno-pedagogical competency.

(xvii) There is a significant difference between the male and female teachers in respect of their anxiety towards the use of instructional aids in teaching. Moreover the female teachers
are found to be better than their male teachers in their anxiety towards the use of instructional aids in teaching.

(xviii) There is a significant difference between the teachers working in the urban and rural schools in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the teachers working in urban schools are found to be better than teachers working in rural schools in their anxiety towards the use of instructional aids in teaching.

(xix) There is a significant difference between the teachers working in the Government schools and private schools in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the teachers working in private schools are found to be better than teachers working in Government schools in their anxiety towards the use of instructional aids in teaching.

(xx) There is no significant difference between the married and unmarried teachers in respect of their anxiety towards the use of instructional aids in teaching.

(xxı) The subject taught by the teachers shows no significant difference in respect of their anxiety towards the use of instructional aids in teaching.

(xxıı) There is a significant difference between the teachers from joint family and the nuclear family in respect of their anxiety towards the use of instructional aids in teaching.
Moreover, the teachers from nuclear family are found to be better than teachers from joint family in their anxiety towards the use of instructional aids in teaching.

(xxiii) For the age group of higher secondary school teachers

a) There is a significant difference in anxiety towards the use of instructional aids in teaching between the teacher belong to the age group upto 30 years and above 30 years upto 50 years. Moreover, the teacher belongs to the age group upto 30 years is found to be better than the teacher belongs to the age group above 30 years upto 50 years in respect of their anxiety towards the use of instructional aids in teaching.

b) There is a significant difference in anxiety towards the use of instructional aids in teaching between the teacher belong to the age group upto 30 years and above 50 years. Moreover, the teacher belong to the age group upto 30 years is found to be better than the teacher belong to the age group above 50 years in respect of their anxiety towards the use of instructional aids in teaching.

c) There is no significant difference between the teachers belong to the age group above 30 years upto 50 years and above 50 years in respect of their anxiety towards the use of instructional aids in teaching.

(xxiv) Only in two combinations b) the male and female teachers working in rural schools and c) the male teachers
working in urban and rural schools shows significant difference in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the female teachers working in rural schools are found to be better than the male teachers working in rural schools and the male teachers working in urban schools are found to be better than the male teachers working in rural schools in respect of their anxiety towards the use of instructional aids in teaching. But in the other two combinations viz., a) the male and female teachers working in urban schools and d) the female teachers working in urban and in rural schools show no significant difference in respect of their anxiety towards the use of instructional aids in teaching.

(xxv) In the combinations a) the male and female teachers are working in Government schools, b) the male and female teachers working in private schools and d) the female teachers working in Government and private schools shows significant difference in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the female teachers working in Government schools are found to be better than the male teachers working in government schools, the female teachers working in private schools are found to be better than the male teachers working in private schools, the female teachers working in private schools are found to be better than the female teachers working in Government in respect of their
anxiety towards the use of instructional aids in teaching. But in the other one combination the male teachers working in Government and in private schools show no significant difference in respect of their anxiety towards the use of instructional aids in teaching.

(xxvi) In the combinations a) the married male and female teachers and b) the unmarried male and female teachers show significant difference in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the female teachers who were married are found to be better than the male teachers who were married and the female teachers who were unmarried are found to be better than the male teachers who were unmarried in respect of their anxiety towards the use of instructional aids in teaching. But in other combination with gender and marital status of the teachers shows no significant differences in respect of their anxiety towards the use of instructional aids in teaching.

(xxvii) Only four combinations c) the male and female teachers teaching language subject, d) the male and female teachers teaching vocational subject, g) the male teachers teaching science and vocational subject and i) the male teachers teaching arts and vocational subject shows significant difference in respect of their anxiety towards the use of instructional aids in teaching. Moreover, female teachers
teaching language subject are found to be better than the male teachers teaching language subject, female teachers teaching vocational subject are found to be better than male teachers teaching vocational subject and the male teachers teaching science subject are found to be better than the male teachers teaching vocational subject, and the male teachers teaching arts subject are found to be better than the male teachers teaching vocational subject in respect of their anxiety towards the use of instructional aids in teaching. But in other combination with gender and subject taught by the teachers shows no significant difference in respect of their anxiety towards the use of instructional aids in teaching.

(xxviii) In the combinations a) the male and female teachers from joint family, c) the male teachers from joint family and from nuclear family, and d) the female teachers from joint family and from nuclear family shows significant difference in respect of their anxiety towards the use of instructional aids in teaching. Moreover, the female teachers from joint family are found to be better than the male teachers from joint family, male teachers from nuclear family are found to be better than the male teachers from joint family and female teachers from nuclear family are found to be better than the female teachers from joint family in respect of their anxiety towards the use of instructional aids in teaching. But in
the other combination b) the male and female teachers from
nuclear family shows no significant difference in respect of their
anxiety towards the use of instructional aids in teaching.

(xxix) Only four combinations a) the male and female
teachers belong to age group upto 30 years, b) the male and
female teachers belong to the age group above 30 years upto 50
years, g) the female teachers belong to the age group upto 30
years and above 30 years upto 50 years and h) the female
teachers belong to the age group upto 30 years and above 50
years shows significant difference in respect of their anxiety
towards the use of instructional aids in teaching. Moreover, the
female teachers belong to age group upto 30 years are found to
be better than the male teachers belong to age group upto
30 years, the female teachers belong to age group above
30 years upto 50 years are found to be better than the male
teachers belong to age group above 30 years upto 50 years,
the female teachers belong to age group upto 30 years are
found to be better than the female teachers belong to age
group above 30 years upto 50 years and the female teachers
belong to age group upto 30 years are found to be better than
the female teachers belong to age group above 50 years, in
respect of their anxiety towards the use of instructional aids in
teaching. But in other combination with gender and age group
of the teachers shows no significant difference in respect of their anxiety towards the use of instructional aids in teaching.

(***x*) There is a significant difference between the male and female teachers in respect of their attitude towards using new technology. Moreover the female teachers are found to be better than their male teachers in their attitude towards using new technology.

(***xi*) There is a significant difference between the teachers working in the urban and rural schools in respect of their attitude towards using new technology. Moreover the teachers working in urban schools are found to be better than teachers working in rural schools in their attitude towards using new technology.

(***xii*) There is no significant difference between the teachers working in the Government schools and private schools in respect of their attitude towards using new technology.

(***xiii*) There is no significant difference between the married and unmarried teachers in respect of their attitude towards using new technology.

(***xiv*) The subject taught by the teachers shows no significant difference in respect of their attitude towards using new technology.
(xxxv) There is a significant difference between the teachers from joint family and the nuclear family in respect of their attitude towards using new technology. Moreover, the teachers from nuclear family are found to be better than teachers from joint family in their attitude towards using new technology.

(fff) For the age group of higher secondary school teachers

(a) There is a significant difference in attitude towards using new technology between the teachers belong to the age group upto 30 years and above 30 years upto 50 years in respect of their attitude towards using new technology. Moreover, the teachers belong to the age group upto 30 years are found to be better than teachers belong to the age group above 30 upto 50 years in their attitude towards using new technology.

(b) There is no significant difference between the teachers belong to the age group upto 30 years and above 50 years in respect of their attitude towards using new technology.

(c) There is no significant difference between the teachers belong to the age group above 30 years upto 50 years and above 50 years in respect of their attitude towards using new technology.
(xxxvii) In the combinations b) the male and female teachers working in rural schools and c) the male teachers working in urban and rural schools shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers working in rural schools are found to be better than the male teachers working in rural schools and the male teachers working in urban schools are found to be better than the male teachers working rural in schools, in respect of their attitude towards using new technology. But the other two combinations a) male and female teachers working in urban schools and d) the female teachers working in urban and rural schools show no significant difference in respect of their attitude towards using new technology.

(xxxviii) In the combinations a) the male and female teachers working in Government schools, c) the male teachers working in Government and private schools and d) the female teachers working in Government and private schools show no significant difference in respect of their attitude towards using new technology. But in the combination, b) the male and female teachers working in private schools shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers working in private schools are found to be better than the male teachers working
in private schools in respect of their attitude towards using new technology.

(**xxix**) In the combinations a) the married male and female teachers, c) the married and unmarried male teachers and d) the married and unmarried female teachers shows no significant difference in respect of their attitude towards using new technology. But in the combination, b) the unmarried male and female teachers shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers who were unmarried are found to be better than the male teachers who were unmarried in respect of their attitude towards using new technology.

(**xl**) Only in three combinations b) the male and female teachers teaching arts subject, d) the male and female teachers teaching vocational subject and e) the male teachers teaching science and arts subject shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers teaching arts subject are found to be better than the male teachers teaching arts subject, the female teachers teaching vocational subject are found to be better than the female teachers teaching vocational subject and the male teachers teaching science subject are found to be better than the male teachers teaching arts, in respect of their attitude towards using new technology. But in the other combinations
with gender and subject taught by the teachers shows no significant difference in respect of their attitude towards using new technology.

(xli) In the combinations a) the male and female teachers from joint family, c) the male teachers from joint family and from nuclear family and d) the female teachers from joint family and from nuclear family shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers from joint family are found to be better than the male teachers from joint family, the male teachers from nuclear family are found to be better than the male teachers from joint family and the female teachers from nuclear family are found to be better than the female teachers from joint family in respect of their attitude towards using new technology. But the other combination b) male and female teachers from nuclear family show no significant difference in respect of their attitude towards using new technology.

(xlii) Only in two combinations a) the male and female teachers belong to the age group upto 30 years and g) the female teachers belong to the age group upto 30 years and above 30 years upto 50 years shows significant difference in respect of their attitude towards using new technology. Moreover, the female teachers belong to the age group upto 30
years are found to be better than the male teachers belong to
the age group upto 30 years and the female teachers belong to
the age group upto 30 years are found to be better than the
female teachers belong to the age group above 30 years upto 50
years in respect of their attitude towards using new technology.
But in the other combinations with gender and age group of the
teachers shows no significant difference in respect of their
attitude towards using new technology.

(xliii) There is a significant and negative relationship
between the techno-pedagogical competency and anxiety
towards using of instructional aids in teaching of higher
secondary school teachers.

(xliv) There is a significant and positive relationship
between the techno-pedagogical competency and attitude
towards using new technology of higher secondary school
teachers.

(xlv) The anxiety towards the use of instructional aids
has made a significant contribution towards the perceived
Techno-pedagogical competency in teaching and attitude
towards using new technology. The calculated multiple
correlations have accounted for 0.318. R² was calculated to be
0.101 ie 10.10% of the variance in the perceived
Techno-pedagogical competency.
5.03. CONCLUSIONS:

The present investigation is a significant study and also the need of the hour in countries like India. Investigate to study the teachers techno-pedagogical competency, their Anxiety towards the use of instructional aids in teaching and their Attitude towards using new technology. The present study has revealed many interesting findings. Viz., the majority (52.0%) of teachers working in the higher secondary schools, situated in the Tiruvannamalai District of Tamilnadu, India, belong to the average level of techno-pedagogical competency, 34.3% of them have the average level of anxiety towards the use of instructional aids in teaching and majority of teachers (97.0%) have neutral attitude towards using new technology. Besides other things, the investigation contributor to the field of educational technology by the construction and standardization of techno-pedagogical competency scale and anxiety towards the use of instructional aids in teaching scale. This study also revealed that the majority of the teachers have average level of perceived techno-pedagogical competency and therefore the techno-pedagogical competency needs to be improved in order to equip themselves to face the students belong to the digital era and also to face the challenges in the modern classroom.
5.04. RECOMMENDATIONS:

Based on the findings and conclusions of the present study, the following recommendations are suggested.

1. The school teachers have to be given more training in the basic educational applications of MS-Excel, MS-Office, MS-Word, MS-Power point, etc.

2. Teachers on the whole have to be given training in making use of technological gadgets in teaching effectively.

3. An orientation programme needs to be organized in schools to train teachers in making use of technological gadgets and the necessary instructional aids in teaching, which will in turn reduce their anxiety in using them while teaching.

4. A seminar may be conducted in schools in Tiruvannamalai district on the ways and means to develop techno-pedagogical competency of teachers.

5. The In-service computer training programme has to be given to teachers so as to make them proficient with computer and internet skills. The training should have more practical components.

6. The school teachers have to be encouraged to make use of the online resources by providing internet facilities in schools.
5.05. SUGGESTIONS FOR FURTHER RESEARCH:

The following suggestions are given for further investigation:

1. This study has been conducted only on higher secondary school teachers. A similar study could be extended to college level teachers.

2. Techno-pedagogical competency of teachers related to other psychological variables such as interest, job stress, self-esteem can be studied.

3. The present study is limited to schools in Tiruvannamalai district. It could be extended to schools in other Districts in Tamilnadu.

4. The present study could be made as an experimental study by enhancing technology in teaching.

5. A study could be made on the influence of the institutional environment on the techno-pedagogical competency among teachers.

6. A same type of study may be undertaken for teacher trainees.