**Chapter V**

**Major Findings and Conclusions**

**5.1.0 Introduction**

The present chapter ‘Major Findings and Conclusions’ is concerned with the conclusive features of the entire study. It looks at the impact of technology supportive learning over usual learning method for the development of linguistic skills, linguistic creativity, and academic performance in English learning. It provides the cream of the findings of the present study in one hand; and in other hand, it provides many valuable directions to the researchers, stakeholders of language, literature and education. The major sub-headings of this chapter are:

i. Major findings of the study,

ii. Broad conclusions,

iii. Discussion of the results,

iv. Educational implications of the study,

v. Limitations of the study, and

vi. Suggestions for further research

**5.2.0 Major Findings of the Study**

The major findings of the present study are stated below under the following headings.

**5.2.1 Effect of TSL over ULM for the development of overall linguistic skills in English learning at elementary stage.**

1. TSL has no significant merit over ULM for the development of overall linguistic skills in English learning at the elementary stage.

**5.2.2 Effect of TSL over ULM for the development of overall linguistic creativity in English learning at elementary stage.**

2. TSL seems to be a better strategy than ULM for the development of overall linguistic creativity in English learning at elementary stage.

**5.2.3 Effect of TSL over ULM for the development of overall academic performance in English learning at elementary stage.**

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3. TSL has no significant merit over ULM for the development of overall academic performance in English learning at elementary stage.

5.2.4 **Effect of TSL over ULM for the development of component-wise linguistic skills in English learning at elementary stage.**

4. TSL has no significant impact over ULM for the development of listening skills in English learning at elementary stage.

5. There is no significant different between TSL and ULM for the development of speaking skills in English learning at elementary stage.

6. Reading skill is better developed through TSL than ULM in English learning at elementary stage.

7. TSL has merit over ULM for the development of writing skills in English learning at elementary stage.

5.2.5 **Effect of TSL over ULM for the development of component-wise linguistic creativity in English learning at elementary stage.**

8. TSL is found to be an effective and suitable strategy than ULM for the development of fluency in English learning at elementary stage.

9. TSL has significant impact for the development of flexibility in English learning at elementary stage.

10. Significant difference is found between TSL and ULM in respect of developing originality in English learning at elementary stage. Here, TSL is considered as a better strategy than ULM in respect of developing originality in English learning at elementary stage.

5.2.6 **Effect of TSL over ULM for the development of component-wise academic performance in English learning at elementary stage.**

11. There exists no significant difference between TSL and ULM for the development of academic performance in prose area of English learning at elementary stage.

12. TSL has significant merit over ULM for the development of academic performance in poetry area of English learning at elementary stage.
13. There is no significant difference between TSL and ULM for the development of academic performance in non-detailed area of English learning at elementary stage.

**5.2.7 Effect of TSL over ULM for the development of overall linguistic skills in different content areas of English learning at elementary stage.**

14. There exists no significant difference between TSL and ULM for the development of overall linguistic skills in prose area of English learning at elementary stage.

15. There exists no significant difference between TSL and ULM for the development of overall linguistic skills in poetry area of English learning at elementary stage.

16. There exists no significant difference between TSL and ULM for the development of overall linguistic skills in non-detailed area of English learning at elementary stage.

**5.2.8 Effect of TSL over ULM for the development of overall linguistic creativity in different content areas of English learning at elementary stage.**

17. There exists significant difference between TSL and ULM for the development of overall linguistic creativity in prose area of English language learning at elementary stage.

18. There exists no significant difference between TSL and ULM for the development of overall linguistic creativity in poetry area of English learning at elementary stage.

19. There exists no significant difference between TSL and ULM for the development of overall linguistic creativity in non-detailed area of English learning at elementary stage.
5.2.9 Effect of TSL over ULM for the development of component-wise linguistic skills in different content areas of English learning at elementary stage.

20. There exists no significant difference between TSL and ULM for the development of listening skills in prose area of English learning at elementary stage.

21. There exists no significant difference between TSL and ULM for the development of speaking skills in prose area of English learning at elementary stage.

22. There exists no significant difference between TSL and ULM for the development of reading skills in prose area of English learning at elementary stage.

23. There exists no significant difference between TSL and ULM for the development of writing skills in prose area of English learning at elementary stage.

24. There exists significant difference between TSL and ULM for the development of listening skills in poetry area of English language learning at elementary stage.

25. There exists no significant difference between TSL and ULM for the development of speaking skills in poetry area of English learning at elementary stage.

26. There exists no significant difference between TSL and ULM for the development of reading skills in poetry area of English learning at elementary stage.

27. There exists no significant difference between TSL and ULM for the development of writing skills in poetry area of English learning at elementary stage.

28. There exists no significant difference between TSL and ULM for the development of listening skills in non-detailed area of English learning at elementary stage.
29. There exists no significant difference between TSL and ULM for the development of speaking skills in non-detailed area of English learning at elementary stage.

30. There exists no significant difference between TSL and ULM for the development of reading skills in non-detailed area of English learning at elementary stage.

31. There exists no significant difference between TSL and ULM for the development of writing skills in non-detailed area of English learning at elementary stage.

5.2.10 Effect of TSL over ULM for the development of component-wise linguistic creativity in different content areas of English learning at elementary stage.

32. There exists significant difference between TSL and ULM for the development of fluency in prose area of English learning at elementary stage.

33. There exists significant difference between TSL and ULM for the development of flexibility in prose area of English learning at elementary stage.

34. There exists no significant difference between TSL and ULM for the development of originality in prose area of English learning at elementary stage.

35. There exists no significant difference between TSL and ULM for the development of fluency in poetry area of English learning at elementary stage.

36. There exists no significant difference between TSL and ULM for the development of flexibility in poetry area of English learning at elementary stage.

37. There exists no significant difference between TSL and ULM for the development of originality in poetry area of English learning at elementary stage.
There exists no significant difference between TSL and ULM for the
development of fluency in non-detailed area of English learning at elementary
stage.

There exists significant difference between TSL and ULM for the
development of flexibility in non-detailed area of English learning at elementary stage.

There exists no significant difference between TSL and ULM for the
development of originality in non-detailed area of English learning at elementary stage.

5.3.0 Broad Conclusions
Total 40 experimental effects are studied in the present study. All these 40
experimental effects are related to the last four objectives of the study (i.e. study the
effect of TSL over ULM for the development of overall linguistic skills, linguistic
creativity, and academic performance in English learning; study the effect of TSL over
ULM for the development of component wise linguistic skills, linguistic creativity and
academic performance in English learning; study the effect of TSL over ULM for the
development overall linguistic skills and linguistic creativity in different content areas
of English Learning; and study the effect of TSL over ULM for the development of
component wise linguistic skills and linguistic creativity in different content areas of
English Learning). Relating to the second objective, three experimental effects are
studied; relating to the third objective, ten experimental effects are studied; relating to
the fourth objective, six experimental effects are studied; and relating to the fifth
objective, twenty-one experimental effects are studied. The data analysis referring to
all these 40 experimental effects have been made using ‘t’ test, ANOVA and
ANCOVA. The Mean level (Raw Mean Level) analysis of the study shows that out of
40 cases, in 39 cases the experimental group did better than control group whereas in
one case the control group did better than experimental group. The ANOVA level
analysis of the study shows that out of 40 cases, in 28 cases, the experimental group
did better than control group; and in 12 cases, there were no significant difference
between the control group and the experimental group. However, in no case it was
found that the control group did better than experimental group. The ANCOVA level analysis of the study shows that out of 40 cases, in 12 cases the experimental group did better than control group; and in 28 cases, there was no significant difference between the control group and the experimental group. But, in no case it was found that the control group did better than experimental group. Taking into consideration all these inferences, it is summarized that TSL is a better method than ULM for developing linguistic skills, linguistic creativity, and academic performance in English learning at elementary stage.

Table: 5.1  Master Chart showing the experimental effect of TSL over ULM in English learning based on Raw Mean Scores, ANOVA & ANCOVA

<table>
<thead>
<tr>
<th>8.5</th>
<th>Experimental Effect areas of English learning</th>
<th>Experimental Effect sub-areas of English learning</th>
<th>Further division of the sub areas (if any)</th>
<th>Experimental effect based on Raw Mean Scores</th>
<th>Experimental effect based on ANOVA scores</th>
<th>Experimental effect based on ANCOVA scores</th>
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<tbody>
<tr>
<td>1. Overall Linguistic Skills, Linguistic Creativity, and Academic Performance</td>
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<td>2. Component-wise Linguistic Skills, Linguistic Creativity, and Academic Performance</td>
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<td>Linguistic Creativity</td>
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5.4.0 Discussion of the Results

The present study studied the effect of technology supportive learning over usual learning method for the development of linguistic skills, linguistic creativity, and academic performance in English learning at elementary stage. The result of the present study signify that technology supportive learning is a better method than usual learning method for developing linguistic skills, linguistic creativity, and academic performance in English learning at elementary stage.

In relation to the present area of study, many other studies have been conducted by many other researchers. The results of such studies are in one way or the other related to the present study. While results of some of such studies positively corroborate with
result of the present study, the results of some other studies negatively corroborate with the result of the present study. Hence below is discussed how such studies are corroborating with the present study.

The studies of Adair-Hauck et al. (2000); Renandya and Farrell (2011); Wagner (2010); Tareq (2009); Verdugo and Belmonte, (2007); Focarile (2006); Blake (2006); Konrad (2005); Clayburn (2005); Swain (2005); Roever (2009); Ghonsooly (2012); Chen (2005); Kanaoka (2005); Uhrich (2005); Elliot (2005); Uhing (2005); Shiffer (2004); Yingling (2004); Carpenter (2004); Webb (2004); Edmondson (2004); White (2004); Young (1988); Blair (1984); Wedley (1979); Elley (1989); and Zevenbergenn and Whitehurst (2003) are conducted in the area of linguistic skills and the results of these studies are positively related with the present study. For example, the studies conducted by Swain, (2005); Roever (2009); Ghonsooly (2012); and Hommel, Colzato, Fischer, and Christoffels (2011) state that linguistic skills can be developed or the achievement of the individual learners in skill-areas can be achieved through using different methodologies in teaching learning process. Behera (1997) and Kolade (2012) state that it becomes germane for every second language users to take the advantage of the digital enhancement in teaching and learning processes and get the best in language studies. It is an approach to language learning that is enhanced through the use of technologies, such as mobiles phones, MP3/MP4 players, and palmtop computers to support students’ language learning. Technology can provide a more realistic picture of the new language and culture in the classroom, including not only linguistic but also paralinguistic features such as body language, gestures, prosody, etc., which help to convey meaning to the learners (Brett, 1995; Fidelman, 1997; Gassin, 1992; Verdugo and Belmonte, 2007; and Hurley, 1992). However, Adair-Hauck et al. (2000) found that there were no patterns of statistically significant differences between the treatment group and the control group in listening, speaking, reading and writing. Further they stated that multimedia application in foreign language learning is no magic bullet for enhancing linguistic skills among the learners. Still empirical studies of programs of excellence for English language learning continue to point to excellent teachers as the prevailing influence on students’ success.
in English learning (Burns, Griffin, and Snow, 1999). These studies concluded that technology enhanced independent language learning is as effective as usual classroom instruction.

The studies of Kumari (1990); Malhotra (1990); Lee (2004); Sharma (1995); Borgert (1990); Kumari (1990); Malhotra (1990); Huh (2005); Horton (1985); Tisone (1985); Kolade (2012); Egan (1992); Harrison (1994); Fleming and Stevens (2004); Y (2012); Ghonsooly (2012); Jernigan (2012); Tengse (2009); Richards (2005); Casper (1964); Khatena (1971); Stern (1973); Spratt (2002); Getzels and Csikszentmihalyi (1976); and Coomes (1985) are conducted in the area of linguistic creativity and the results of these studies are positively related with the present study. The studies of Kharkhurin (2007) proved that students’ experience of participation in two cultures makes them see the world through two different conceptual systems. These enhanced conceptual representations may enhance cognitive flexibility, divergent thinking, and creative expression of experiences. Kharkhurin (2008) found that Russian-English bilingual immigrants in the U.S. showed superiority in fluency aspect of divergent thinking. However, no any study conducted in the area of linguistic creativity, the results of which differ from the results of the present study.

The studies of Jennings, (2004); Khan, (2012); Chirandon, Laohawiriyanon, and Rakthong (2010); Brewer (2005); Cooper (2005); Acosta (2005); Lopez (2005); Pagan (2005); Jena (2012); Tsai (2006); Ansari (2012); Jena (2012); Swain (2005); Roever (2009); Ghonsooly (2012); Hommel, Colzato, Fischer, and Christoffels (2011); Clements (1994); Clements, Nastasi and Swaminathan (1993); Melmed (1995); Schacer (1999); Pallingtepın (2005); Tseng (2005); Gonzalez-Mendez (2005); Ferguson (2005); McIntosh 1992); Coomes (1985); Porinchak (1983); Barnett (2006) are conducted in the area of academic performance and the results of these studies corroborate positively with the present study. These studies state that the achievement level of the individual learner in language learning can be increased through using different methodologies in teaching learning process. Further, they suggest that the use of computer-based technologies in the classroom is correlated to positive academic outcomes, including higher test scores. The studies of Akinwamide (2007); Vahid
(2011); Vaughan (1997); Barton (1997) also report positive developmental and motivational effects that access to technology may have on children's foreign language learning. However, Hu and Hui (2010) report that the use of technology assisted learning adversely affects student engagement. This, in turn, negatively influences their learning effectiveness and satisfaction. Technology-assisted learning shows no significant moderating effects on learning effectiveness or satisfaction. Jennings (2004) and McIntosh (1992) stated that participants in the technology enhanced language leaning did not demonstrate significantly different achievement levels from students not participating in the program. Barnett (2006) stated that technology enhanced Dynamic Indicators of Basic Early Literacy skills (DIBELS) learning did not benefit significantly from the use of the program compared to non-users. Gonzalez-Mendez also (2005) stated that CALL did not result in greater writing achievement in a Basic English Course.

5.5.0 Educational Implications of the Study

The findings of this study prove that it is possible to develop linguistic skills, linguistic creativity, and academic achievement in English learning with the help of technology supportive learning strategy. The following educational implications can be drawn from the present study:

- The aim of language education at school level should not be the development of language skills only. It should also aim at developing other important language competencies like language achievement, linguistic creativity etc.

- Proper care should be taken to develop creative ability of the students through the teaching of different school subjects instead of teaching creativity as a separate discipline.

- Due care must be taken to use language as a means for the development of creativity among school students.

- Technology supportive learning method can be used to develop linguistic skills, linguistic creativity, and academic performance in language learning.
Appropriate environment should be provided to the children for facilitation of linguistic skills, linguistic creativity and academic performance in language learning.

The teaching learning process of language classroom should focus on development of individual as well as corporate/group creativity among the learners.

Teachers need to be careful while using technology supportive learning method at different school level for developing various abilities of the students.

Policies need to be framed regarding the development of linguistic skills, linguistic creativity, and academic performance in language learning from national to local level.

5.6.0 Limitations of the Study

The technology supportive learning activities developed by the researcher for the development of linguistic skills, linguistic creativity, and academic performance in English may not have high reliability and validity. Others can develop several other technology supportive learning activities that have more reliability and validity for the development of linguistic skills, linguistic creativity, and academic performance in English.

The present study deals with three important concepts like linguistic skills, linguistic creativity, and academic performance in English. But it is very difficult to make a clear cut demarcation among these concepts.

No readymade scoring key was followed for Linguistic Creativity Test in English because this test questions required answers that are divergent in nature.

It was not possible on the part of the researcher to control all the extraneous variables that have affected the process of experiment.
5.7.0 Suggestions for Further Research

This piece of research has been conducted in English medium schools of urban setting. This type of study may be extended to many vernacular medium schools as well as schools of rural and semi-rural setting.

This study measures the effectiveness of technology supportive learning over usual learning method for the development of linguistic skills, linguistic creativity, and academic performance in English learning of elementary school children. But, studies can be conducted to study the effectiveness of technology supportive learning over usual learning method for the development of linguistic skills, linguistic creativity and academic performance in English learning separately.

The present study is conducted to know the effectiveness of TSL over ULM for the development of linguistic skills, linguistic creativity, and academic performance in English learning but, this kind of study may be extended to other areas like science, social sciences, mathematics etc.

The present research work is confined to elementary stage. This kind of study can be conducted at different stages of education like secondary stage, tertiary stage etc.

The researcher has studied the effectiveness of TSL over ULM for the development of linguistic skills, linguistic creativity, and academic performance in English. Studies can be conducted to judge the effectiveness of TSL over other teaching learning strategies (i.e. synectic method, co-operative method etc.) for developing different types of teaching learning competencies.

The present study does not include background variables like cast, gender, IQ, socio-economic status of the student etc. for comparison. Therefore, a study may be undertaken to judge the effectiveness of TSL over ULM for developing linguistic skills, linguistic creativity and academic performance in English at elementary stage with regard to background variables like cast, gender, IQ, socio-economic status of the students etc.
A theoretical study may be undertaken to develop sufficient number of TSL activities for developing various abilities of the school students in various subject areas.

A factorial study may be conducted to ascertain the nature of the factors/attributes those contribute to the development of linguistic skills, linguistic creativity, and academic performance in English at elementary stage.

Many other innovative techniques besides TSL like peer to peer learning, co-operative learning etc. can be used for developing linguistic skills, linguistic creativity, and academic performance in English at elementary stage.

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