5.1 Findings
5.2 Synthesis of Findings
5.3 Interpretation and Discussion
5.4 Recommendations
5.5 Suggestions for Further Study
Findings and Recommendations

This study was conducted with a view to find out the effectiveness of computer based instruction on acquisition of English vocabulary by the secondary students. In this study, ‘Computer based instruction’ is the independent variable and acquisition of English vocabulary is the dependent variable. This study adopted pretest – posttest Equivalent group design with three groups comprising 24 each. The control group was given chalk and talk method of teaching (CMT) method, the experimental group I was given treatment with computer based instruction (CBI) and the experimental group II was given treatment with CMT cum CBI. All the sample groups underwent pretest, post-test and delayed posttest. The statistical techniques such as t-tests for dependent groups and One-way ANOVA were employed to derive the findings. This chapter highlights those findings, recommendations on the basis of the findings and suggestions to the researchers for further study associated with this area.

5.1 Findings

Pretest

1. There is no significant difference in the overall acquisition of English vocabulary among the sample groups, namely, control group, experimental group I and experimental group II, before treatment.
2. There is no significant difference in the acquisition of English vocabulary among the sample groups with regard to difficulty level, before treatment.

3. There is no significant difference in the acquisition of English vocabulary among the sample groups with regard to the level of intelligence, before treatment.

**Posttest**

4. There is significant difference in the overall acquisition of English vocabulary among the sample groups, after treatment. The post-hoc analysis shows that the experimental group II performed better than the other two groups, namely, the control group and the experimental group I, in the post test.

5. Significant difference was found in the acquisition of English vocabulary among the sample groups with regard to difficult vocabulary and not with regard to easy and complex vocabulary, after treatment. The post-hoc analysis shows that the experimental group II acquired more difficult vocabulary than the other two groups, namely, the control group and the experimental group I, in the post test.

6. Significant difference was found in the acquisition of English vocabulary among the sample groups with regard to low and average levels of intelligence, and not with high level of intelligence, after treatment. The post-hoc analysis shows that the experimental group II acquired more vocabulary than the control group and experimental group I with regard to average level of intelligence, after treatment; The experimental group II acquired more vocabulary than the control group with regard to low level of intelligence; No difference was found between control group and experimental group I, and experimental groups I& II, after treatment.
**Pretest – Posttest: Control Group**

7. There is significant difference between the pretest and posttest scores of the control group. The mean scores show that the control group acquired more vocabulary in the posttest than the pretest.

8. There is significant difference between the pretest and posttest scores of the control group irrespective of the difficulty level of vocabulary. The mean scores show that the control group acquired more vocabulary in the posttest than the pretest irrespective of the difficulty level of vocabulary.

9. There is significant difference between the pretest and posttest scores of the control group irrespective of the level of intelligence. The mean scores show that the control group acquired more vocabulary in the posttest than the pretest irrespective of the level of intelligence.

**Pretest – Posttest: Experimental Group I**

10. There is significant difference between the pretest and posttest scores of the experimental group I. The mean scores show that the experimental group I acquired more vocabulary in the posttest than the pretest.

11. There is significant difference between the pretest and posttest scores of the experimental group I with regard to the difficulty level of vocabulary. The mean scores show that the experimental group I performed better in the posttest than the pretest irrespective of the difficulty level of vocabulary.
12. There is significant difference in the acquisition of English vocabulary between the pre-test and post-test of the experimental group I irrespective of level of intelligence. The mean scores show that the experimental group I performed better in the posttest than the pretest irrespective of the level of intelligence.

**Pretest – Posttest: Experimental Group II**

13. There is significant difference between the pretest and posttest scores of the experimental group II. The mean scores show that the experimental group II acquired more vocabulary in the posttest than the pretest.

14. There is significant difference between the pretest and posttest scores of the experimental group II with regard to the difficulty level of vocabulary. The mean scores show that the experimental group II performed better in the posttest than the pretest irrespective of difficulty level of vocabulary.

15. There is significant difference between the pretest and posttest scores of the experimental group II with regard to the level of intelligence. The mean scores show that the experimental group II performed better in the posttest than the pretest irrespective of level of intelligence.

**Gain Scores**

16. There is no significant difference among the overall gain scores of the control group and experimental groups I & II.

17. Significant difference prevails among the gain scores of the sample groups with regard to difficult vocabulary, and not with easy and complex vocabulary. The post-hoc analysis shows that the experimental group II gained more difficult
vocabulary than the control group; and no significant difference is found between control group & experimental group I, and experimental groups I & II.

18. There is no significant difference among the gain scores of the control group and experimental groups I & II, with regard to level of intelligence.

Retention Scores

19. There is no significant difference among the overall retention scores of the sample groups.

20. Significant difference prevails among the retention scores of the sample groups with regard to difficult vocabulary, and not with easy and complex vocabulary. The post-hoc test shows that the experimental group II and control group retained more difficult vocabulary than the experimental group I; and the experimental group II does not differ from the control group.

21. There is significant difference among the retention scores of the control group and experimental groups I & II, with regard to low level of intelligence, and not with high and average levels. The post-hoc analysis shows that the control group retained more vocabulary than the experimental group I; and the experimental group II does not differ from the control group and experimental group I with regard to low level of intelligence.

5.2 Synthesis of Findings

In the pretest, no significant difference was found in the overall acquisition of English vocabulary among the sample groups, namely, control group, experimental group I and
experimental group II, irrespective of difficulty level of vocabulary and level of intelligence, before treatment.

In the posttest, the experimental group II performed better than the other two groups, namely, the control group and the experimental group I, in the post test. This better performance of the experimental group II was due to the acquisition more difficult vocabulary than the other two groups.

All the three sample groups acquired more vocabulary in the posttest than the pretest. Though no significant difference was found among the gain scores of the three groups, difference was found among the sample groups with regard to difficult vocabulary. The experimental group II gained more difficult vocabulary than the control group. No significant difference existed among the gain scores of sample groups with regard to level of intelligence.

Even though no significant difference prevailed among the retention scores of the sample groups, the low intelligent students belonged to experimental group II and control group retained more difficult vocabulary than the experimental group I.

5.3 Interpretation and Discussion

In this study, the three sample groups, namely, control group taught by chalk and talk method (CMT), experimental group I treated by computer based instruction (CBI) and experimental group II treated by CMT cum CBI were equivalent in terms of the intelligence test scores and half-yearly marks in English. The pre-test scores indicated that the three sample groups were equivalent in their English Vocabulary prior to experimentation, whatever may be the difficulty level of the vocabulary and level of intelligence. This showed that the three sample groups were homogeneous.
All the three sample groups scored more in the post-test than in the pretest. Irrespective of the difficulty level of vocabulary and level of intelligence, all the sample groups attained better in the posttest than in the pretest. This implies that all the methods namely, CMT, CBI and CMT cum CBI helped the students in acquiring additional English vocabulary. The same result is found in the reviewed studies (Ofelia, 2004; Al-Jarf, 2007; Lu, 2008; Lee, 2009; Letchumanan et al., 2012; Orawiwatnakul, 2013; Ulanoff, 2014) as well.

The experimental group II performed better than the other two groups, namely, the control group and the experimental group I, in the post test. This acquisition is added by difficult vocabulary, rather than easy and complex vocabulary. This indicates that CMT accompanied by CBI helped the students to acquire more difficult vocabulary.

The experimental group II acquired more vocabulary than the control group with regard to average and low levels of intelligence, after treatment; and more than the experimental group I only with regard to low level of intelligence. This implies that three-fourth (75%) of the students were benefitted by CMT cum CBI.

It is also found that the experimental group II gained more difficult vocabulary than the control group; and no significant difference was found between control group and experimental groups I and II. Moreover, there is no significant difference among the gain scores of the sample groups. These results of the study entail that CMT cum CBI facilitated the students to acquire more vocabulary. This finding coincides with the finding of the reviewed studies (Liu, 2010; Tozcu & Coaldy, 2010). Another study (Pulido, 2004) ascertained the vocabulary gain through reading brief narratives.

The experimental group II and control group retained more difficult vocabulary than the experimental group I; and the experimental group II does not differ from the
control group. This is caused by the students with low intelligence. It points out that CMT and CMT cum CBI made possible the students with low intelligence to retain the difficult English vocabulary. The same result is supported by the reviewed studies (Lee, 2009., Hashemzadeh, 2012) as well.

5.4 Recommendations

The findings of the study show that learners with low and average intelligence improve their vocabulary significantly when they are given Computer based instruction after having first training them in Chalk and talk method. The results of the study reveal that the computer based instruction can be introduced to the education institutions especially to the secondary school students with low and average intelligence.

It is apparent that computer based instruction has the power to promote difficult vocabulary and it helps to hold the strength of retention for a longer period. The repetition of words enables them acquire more vocabulary. Hence the researcher wishes to recommend that the education institutions should introduce Computer based instruction coupled with conventional teaching methods like chalk and talk method.

The teachers should be effectively trained in teaching vocabulary using both computer based instruction and the chalk and talk method.

The attitude of the learners is also very important in the successful implementation of the vocabulary. So the mindset of the learners should be attuned so that they will show interest and positively engage themselves in learning the language text and its vocabulary in particular. A positive classroom atmosphere is essential in the successful implementation of the above mentioned method.
To the Government:

The Government may take steps to introduce Computer Based Inspection method of teaching in schools. Large numbers of private schools have introduced Computer Based Inspection to create interest among the students. It paves the way for below average students to score high in acquiring good vocabulary, which will positively push them to master English language.

In a sizeable number of government schools of Uttar Pradesh, students get very less or no opportunity of innovative learning. This weakens their communication ability and makes them lose interest in learning of a new language like English. It would be better if government would provide schools with computer based input so that the learners may be positively influenced.

Acquisition of a good store of vocabulary stimulates spontaneous communication and greatly improves their usage of English language. This increases manifold, their being absorbed in a high profile job or placing them in vocations which demand comprehending and using the language.

So it is deemed quite imperative that government takes steps to ensure that the schools are equipped with computers so that this computer based instruction can be effectively put to use.

To the Teacher Education Institutions:

Creating massive number of teachers per year is easy, but care should be taken that these teachers are well equipped to handle the language teaching strategies and good communication skills, so that they can properly train their learners in learning language skills. The teachers should be made aware of the strategies that come from new and recent researches like this. Not only they are made aware but should also be trained to
put these learner strategies to good use. They should also be trained and tested in developing innovative Computer Based Inspection materials.

To the Teachers:

How much ever a teacher is trained at the Teacher training institutes, every classroom in a unique experience and every learner is a challenge. The teacher should be able to first capture the attention of his or her learners by engaging them in quick short vocabulary tests. This will set the learning atmosphere in the classroom. With the knowledge of vocabulary teaching pedagogy, the teacher has to combine effectively both the chalk and talk method with Computer Based Inspection materials. It will be very beneficial if the teacher creates or prepares authentic teaching materials to improve vocabulary of the learners. It will do much good if there is cohesion in the text used by the teacher and the vocabulary items tested. The teachers should be very positive and patient with some early failures that may come in learning the vocabulary. But the constant inputs will yield very positive results over a period of time.

To the Management of Schools:

The management of the schools can look into the communication ability of the teachers and the students. Periodic orientation should be given to teachers so that they are in the knowhow of the latest and effective language learning skills. Training should be given to teachers in helping them prepare authentic teaching materials in Computer Based Inspection methods. To enable the practical application of all the learned skills the management should establish a well-equipped computer lab to effectively train the learners in computer based instruction for acquisition of vocabulary. This will benefit immensely the learning community in vastly improving their learning skills and there by
equipping the learners to find very well jobs in this competitive world of communicative competency.

*To the Curriculum Designers:*

The education planners and the curriculum designers for the school board of education should be constantly updating the learning materials for acquiring good vocabulary. They should conduct training programmes and teach the teachers to design effective computer based instruction materials. They should also be trained in handling the hardware and the software components with ease, so that the learning community is benefited.

### 5.5 Suggestions for Further Study

The investigator would like to put forward a few suggestions for further studies.

1. Computer based instruction for school students to teach pronunciation.
2. The stress, rhythm and intonation patterns can be experimented on students through Computer Based Instruction.
3. Preparing authentic teaching materials for computer based instruction can be a rewarding study.
4. Effect of Computer based instruction on concentration and interest among students in learning English.