

CHAPTER ONE

INTRODUCTION

1.1 General Background

Language is a tool of communication. In order to share our ideas, feelings and thoughts, there is need of language. Richards et al. (1985) define language as, “the system of human communication by means of a structured arrangement of sounds” (p. 3). It is one of the most important characteristic forms of human behaviour. So the study of language has occupied a great place in education all over the world. Every one communicates his/her ideas, emotions, desires and feelings by the means of language if there is no speech disorder. It is viewed as a versatile, dynamic and specific instrument through which human beings communicate with each other. It is a unique property which plays a vital role to distinguish human beings from other animals. Language is viewed differently from the eyes of different linguist and scholars. Language is a system of communication by sound operating through the organs of speech and hearing among the members of a given community and using vocal symbols possessing arbitrary conventional meaning. In this regard, we come to the conclusion that language is limited to human beings. So, undoubtedly we can say that it is species specific. Similarly, to quote Sapir (1978) , “Language is purely human and non-instinctive method of communicating ideas, emotions and desires by means of a system of voluntarily produced symbols” (p.8). However, there are many languages used by many people in the world for communication in their day to day life. Language is viewed as a unique asset of human beings.

From the day when men tried to communicate, language is meant to transmit and interchange ideas, thoughts, information etc. Human beings are therefore, endowed with the credibility of being social. This unique possession pertaining to humans is primary means for communication.

Language is man made system. No language is superior or inferior in terms of communicating ideas. However, some languages play dominant role in the society. There are innumerable languages in the world and English is one and most indispensable of them.

Hence, human languages whether spoken or written can be described as a system of symbols and the grammar by which the symbols are manipulated.

1.1.1 An Introduction to the English Language

Among the languages spoken in the world, English has been recognized as a widely used language for global communication. It belongs to Indo-European family of the language. It is said that more than six thousand languages exist in the world today. Among them English has been selected as an international language as it has dominance over other languages. It is a prestigious and a standard language in the world. It is an international lingua franca and also used as an official language in several countries like India, Hong Kong, the Philippines, Singapore, South Africa, Ireland, New Zealand and so on. It is spoken as a mother tongue in the countries like Britain, America, Canada and Australia. It is one of the most widely used languages among the six UN official languages. It has the largest body of vocabulary and the richest body of literature as it has taken many words from most of the other languages with which it has had contact. To quote McCarthy (2003),

It has taken many expressions from the ancient languages viz. Latin, Greek and these borrowings usually have academic or literary associations. Similarly, from French, English has taken lots of words to do with cooking, the arts and a more sophisticated life style in general. From Italian words come the words connected with music and plastic

arts. German expressions in English have been coined either by tourists bringing back words for new things they saw or by philosophers or historians describing German concepts or experiences. In the same way, there are borrowings from other wide range of languages usually which relates the things which English speakers experienced for the first time aboard (p. 32).

Hence, it claims to have the largest vocabulary than other languages in the world. It is not only language for international communication but also a gateway to the world body of knowledge. We can have access to the advanced scientific technology, world civilization, medicine, economics and other areas of knowledge by means of English. So, it is the English language through which non-English communities have imported foreign inventions, ideas, culture, literature, modern technology etc. from source communities. So, English is regarded as an inevitable means to link with the outer world. In the context of Nepal too, English is taught as a compulsory subject up to the bachelor level. English in Nepal aims at making students able to communicate their ideas, feelings, believes and thoughts with one another.

1.1.2 Teaching Aids and their Importance

All the materials that can be used in the classroom situation to facilitate learning are teaching aids. They can be anything audible or visible or both which have students learn the language more quickly and accurately. Some examples of teaching aids are charts, diagrams, pictures, video, TV, multimedia projectors and so on. They are designed to help teachers save time and effort and also to arise interest on the part of the learners. In general sense, teaching aids are classified into the following three headings.

a) Visual aids: Visual aids involve the sense of vision of the students. For example, realia/ locally available materials, pictures and photographs, posters, maps, charts, diagrams and drawing, magazine cut-outs, pinmen, model puppets, OHP and so on are different visual aids.

b) Audio-visual aids: Audio- visual aids involve both the series; audio and visual. They are as follows: TV/ Video, language laboratory and multimedia computer (projector).

c) Audio aids: Audio aids involve the sense of hearing. The main audio aids that assist language teaching are radio broadcasting and tape recorders.

El-Araby (1974, p. 95) has grouped them into four groups. According to their nature, they are flat (two dimensional), three dimensional, moving and still. According to their display method, they are projected (shown to a group) and non – projected (used for an individual student). In terms of the language skills they are used for, they can be grouped under listening, speaking, reading and writing. According to the senses used, they are audio and visual.

There is no uniformity in the number and types of teaching aids. ‘Audio-visual aids’, ‘audio-visual materials’, ‘audio-visual media’, ‘visual-aids’ or ‘language teaching aids and materials’ – all these terms, broadly speaking, mean the same thing and have been used interchangeably. The term ‘teaching material’ or ‘teaching aid’ suggests in the first instance, things brought into the classroom, like wall charts, slides, film etc. – something extra, which helps the teacher to do his or her job better. Aggrawal (1996, p. 161) classifies teaching aids into different types. It is clearly shown in the table below.

Audio materials	Visual materials	Audio-visual materials
Language	Bulletin boards	Demonstration
Laboratories	Chalk boards	Films
Radio	Charts, drawings, etc.	Printed materials with recorded sounds
Sound distribution	Exhibits	Sound films strips
System sets	Film strips	Study trips
Tape and disco recordings	Flash cards	Television
	Flannel boards	Videotapes
	Flip books	
	Illustrated books	
	Magnetic books	
	Maps	
	Models	
	Pictures	
	Posters	
	Photographs	
	Silent films	
	Slides	

The value or importance of teaching aids in a language classroom can be listed and explained as follows:

- i. Teaching aids aid to comprehension by: a) making concrete what is abstract, b) bringing near the distant objects, c) bringing learners into direct contact with objects/ persons/ things and so on.
- ii. Teaching aids aid to communication by: a) arousing curiosity, b) stimulating learner to speak.
- iii. Teaching aids are helpful to make teaching effective by: a) creating a lively situation for presentation and practice, b) reducing teacher taking time.
- iv. Teaching aids increase the competence of teachers and learners.

- v. Teaching aids make the language teaching more sensible helping students to see the reasons for learning language by making learning learnable and meaningful.
- vi. Teaching aids brighten up the classroom and bring more variety and interest into the language lessons.
- vii. Teaching aids, visual aids in particular help to provide the situations which light up the meaning of the utterance used.
- viii. Teaching aids help in giving information of one kind or other about the background of literature, culture and about life in general.
- ix. Teaching aids help to increase the students' talking time and foster more students' participation.
- x. Teaching aids help the teacher meet individual differences – some are ear-oriented, some can be helped through visual demonstration, while others learn better by doing.
- xi. Teaching aids i.e. audio-visual aids help in the learning of other concepts, principles and solving the real problems of life by making possible the appropriate positive transfer of learning and training received in the classroom.

1.1.3 Visual Aids

Teaching aids can be categorized into different types. Visual aids simply mean those materials that can be seen with our eyes. Describing visual aids, El-Araby (1974) states,

Anything belonging to all brought into the classroom, animate or inanimate is a potential visual aids –teacher, boys, girls, pets, plants, clothes, furniture, materials, objects, everything that anyone is seen to do, any movements he makes, any actions he performs, laughing,

crying, smiling, working, acting, misbehaving-all potential visual aids
(p. 127).

Thus, it can be said that visual aids are anything that can be seen while the language is being spoken or something that students can look at to help them understand, learn and remember.

Byrne (1980, p. 195) makes a division between visual materials for talking about and visual materials for talking with. There is, of course, no hard and fast line between these two types. The division is made principally in order to draw attention to the relation between 'things' and 'language' in the world outside the classroom, which is meant to reflect. To take an example, a pair of scissors can be used for talking about and talking with.

The teacher may bring them into the classroom; she or he may talk about them, their shape and material, and their use. She or he can ask the pupils about them and give them to describe them. This can be called talking about the using visual material. The same pair of scissors may be a thing for talking with. The children are given scissors, combs, mirrors, or models of the things which they have made themselves. They can set up a barber's shop on the classroom and act the parts of the barber and customers simultaneously, or following the script they have written. Hence, they are not talking about scissors; they are not talking about anything. They are stimulating a situation in which language is a perfectly natural element, a situation with which they are familiar and of which a pair of scissors is as much as an integral part as the language or the character who uses it. There are a number of types of visual aids. Among them, the picture (hand drawn picture) is discussed in the following section.

1.1.4 Hand Drawn Pictures

Hand drawn pictures refer to those pictures which are drawn by a teacher himself/ herself. The teacher can draw pictures in order to make the concept clear about what he is teaching by the use of his/ her own drawing. He/ she should prepare the pictures according to the level of the students.

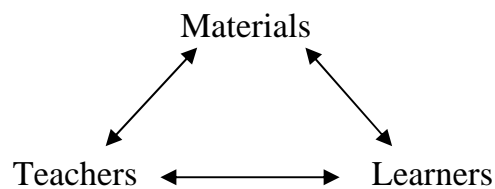
There is a range of situation in which teaching materials are trialled in the course of their development. Individual teachers often prepare exercises or set of materials for their own classes, which can be refined over a period of time on the basis of 'how it went' with the number of classes. Rather than trying to arrive at a final, definite state for the materials, such development is often a continuing open-ended process of refinement and adoption to different groups of learners. In some situations, a group of teachers may prepare materials for use by themselves and other teachers in their own institution, which may then be finalized in a more permanent state for ongoing use after a trialling period. In large scale material development projects, a pilot or trialling phase may be built in before the materials are revised and disseminated more widely and formally.

There are different views on materials development but they have many things in common. One thing in particular they have in common is their concern that different types of learners and different preferred styles of learning should be catered for in language learning materials. According to Maley (1995 b),

A major dilemma faced by all writers of materials, even those writings for small groups of learners with well-defined needs, is that all learners, all teachers and all teaching situations are uniquely different, yet published materials have to treat them as if they were, in some

senses at least, the same. The further problem for materials writers is that, although they are well aware that the course, the direction and the pace of learning are largely unpredictable, they have to predetermine all these things (as cited in Tomlinson, 1999, p. 279).

Clearly what actually happens in classrooms using published materials is that there is a complex trade-off between the three major elements in the equation: the materials, the teachers and the learners.



Thus, the materials can be conceived of as constituting a constraint upon the individual teacher's sense of what may be appropriate at a given pedagogical movement. The materials may also be far from the learners' capacity or sense of relevance at a given point.

What typically happens in different circumstances is that the teachers have to bridge the gap between the materials and his/ her sense of the learners' needs at the particular movements. So, the more widely used materials and consequently the more different and varied the learner need from the prescribed, pre-empted materials, the harder the teacher has to work to adopt the one to the other. To quote Tomlinson (1999),

Materials will always be constraining in one way or another, so that teachers will always need to exercise their professional judgement (or 'sense of plausibility') about when and how a particular piece of material is best implemented in any particular case. However, it must

also be clear that there are alternatives to the relatively inflexible design of some currently available published materials (p. 287).

In recent years, materials design has been characterised by two important developments. Firstly, the use of published materials is now more wide spread than ever before. Secondly, the spread of materials is so significant, material themselves have evolved into much more complex objects. According to Littlejohn (1992),

We need to be able to examine the implications that use of a set of materials may have for classroom work and thus come to grounded opinions about whether or not the methodology and content of the materials is appropriate for a particular language teaching context (as cited in Tomlinson, 1999, p. 190).

So, it is commendable to say that we need to be able to test out the claims now being made for materials: Do they truly help to develop autonomy? Do they truly involve problem-solving? Are they truly learner-centred?

There are many aspects which one can examine, analyse and evaluate in a set of materials. Most obvious sources of guidance in analyzing materials are the large number of frameworks which are cited in Tomlinson (1999). I have focussed so far on issues of teacher development materials. The relevant sources in which I consulted to pursue these ideas would be Khakurel (2005), El-Araby (1974), Rai (1998), Richards and Rodgers (1986) and Harmer (2002). My concern is to enable a close analysis of materials themselves, as a support to designing materials and a preliminary step to materials evaluation and classroom research. Hand drawn pictures being 'up to date' is easily

manageable in all circumstances which itself a creative thing; ‘foolproof’ materials will reflect particular views of the role of the teacher and ideas about the best route to teacher development; ‘real life’. The study will also further analyse the effectiveness in establishing whether the hand drawn pictures are indeed ‘foolproof’ or ‘up to date’ by implementing in real classroom situation or not.

1.1.5 Importance of Hand Drawn Pictures and their uses in ELT

In the area of language teaching, to young students, materials play an important role. In general, all the materials are equally important and play a vital role in every teaching learning situation. In addition to the general feel of effectiveness of the materials, management and proper use of it will reveal much about the components for success. It attempts to move the profession on or reflect changes in the teaching environment. Materials should be well selected and suitable for particular ages and groups of learners; whether it relates well to teachers’ expectations and stages of development, and whether it successfully promotes learning when we implement our materials in practical terms, which are accessible to teachers and learners. We need to check, can teachers and learners follow what is required to them? Is material organized into suitable and realistic chunks of lessons, sections, units etc? Does the material results in learning outcomes which are satisfactory and measurable, if necessary? In some situations, individual teachers will be able to choose the material for their classes but more often the decision will need to be made across a group of teachers, by a director of studies or by a head teacher, or any combination of these parties.

Among different types of visual aids, hand drawn pictures are essential and play vital role in language teaching. It is tough for the language teacher to manage the class using an adequate teaching aids and materials. On the other

hand, there are lots of barriers to face in the use of teaching aids for the teachers even though they are easily available. So, to overcome any problems, barriers in such circumstances with respect to the use of teaching aids and materials, hand drawn pictures which can be easily drawn by the teacher on the blackboard may be the better solution. It is needless to say that a good artist can be a good teacher in respect to using hand drawn pictures. But it is not necessary for a teacher to be a good artist. He or she can draw simple pictures suitable for language teaching according to the level of students. It is said that a picture is better than thousand words. From this statement, we can understand the importance and role of picture in teaching the English language too. In this regard, we can say that pictures can be very interesting, motivating and refreshing for the learner but they should be prepared or drawn according to the level of the students. A drawing can be either already drawn on picture card or drawn on the blackboard during the classroom. They are very useful for teaching action verbs and adjectives. They have proved to be very important in lock-step learning and story teaching.

1.1.6 Effectiveness of Hand Drawn Pictures in ELT

Sometimes, there can be initial frustration that the materials are not as glossy or attractive as per the level, interest and demand of the learners. They have rough edges and a degree of provisionality. So in such circumstances, the teacher and the class can generate a lot of enthusiasm for being involved in what they say as worthwhile activities, in being privileged first uses, and being able to influence part of the teaching and learning environment over which they normally have no control. On a mundane level, provision of sets of free materials can be attractive to students but this is not likely in itself to influence a decision. However, it does seem as though the main motivational factors may be affective ones such as the chances to use something new which might be stimulating to the class and the teacher. Crucially, it should give feedback on

how well the materials contribute to learning aims, and how much progress the learners are able to make. Measuring this factor is difficult with pilot materials as with any other teaching and learning materials. However, the experienced teacher can usually give a good impressionistic feel of whether the materials are suitable for the learners or not, whether they are pushing them to achieve or stretching them too far and too fast, whether they are intrinsically motivating and how they compare with other materials and fit expectations of the teaching programme.

Hand drawn picture is one of the most effective and easily accessible teaching aids to display in the class. The teacher can draw easily without any effort in the chalkboard or can draw at home in advance. The chalkboard is the simplest of all aids. Most teachers seldom use it for drawing the picture on it. Of course, good drawing does the work of the lesson better than bad, but bad drawing is better than no drawing at all.

Chalkboard drawing is desirable because drawing attracts attention of the students. They love pictures and get motivated in learning. The pictures especially help to give meaning and context of the words and sentences presented by a teacher. They too help students to remember the learned things for long time. The teacher can take help from their students in drawing pictures. What the teachers always should keep in mind is that chalkboard drawing should be simple and according to the level of the students. Hand drawn pictures are the most especially helpful to establish a direct link between the word and meaning.

1.2 Review of the Related Literature

Several studies have been carried out to find out the effectiveness in different ways of teaching vocabulary under the department of English education. Regarding this, Richards and Rodgers (1986, p. 165) write, “The most difficult

kind of data to provide is that which occurs evidence that one method is more effective than other in attaining programme objectives”. By now, many practical studies on effectiveness of visual aids have been done which is a broad topic. This is the first research of practical study in the field of hand drawn pictures in teaching meaning of the vocabulary at grade eight. The following paragraphs present some vocabulary studies, vocabulary analyses, effectiveness of matchstick figures done in the past which are related to the area of this study.

Chudal (1997) carried out the research to investigate students’ achievement of English vocabulary used in English textbook of grade six. This study shows that the vocabulary achievement of the students was not satisfactory in total. The boys were found better than girls. Similarly, students of urban areas were better than the students of rural areas. Though he has talked about the better achievement of vocabulary by boys and students of urban areas, he has not talked about the reasons why those students got better achievement of vocabulary than other students. He could not find out the reasons whether they are better due to heredity, teaching method or use of effective teaching materials.

Chapagain (1999) carried out a research to find out the impact of teaching materials in English language teaching. It was found that the use of teaching materials helped for better learning. Though he found the effectiveness of teaching material he could not suggest the most suitable teaching material in different context.

Adhikari (2005) has carried out a research to find out the effectiveness of teaching vocabulary through games. It is an experimental type of research. The findings show that teaching vocabulary through games has been more effective than traditional ways of teaching. The method and findings of this research are

very much appreciable but he could not suggest the techniques for exploiting language games in ELT for the better achievement of vocabulary.

Khakurel (2005) has carried out a research to find out the effectiveness of matchstick figures in teaching action verbs at grade five. The findings show that the degree of effectiveness in the use of matchstick figure in teaching action verb in English was very good. Though his findings are very important and effective in ELT but he has limited his study only to teach action verbs. Teaching other aspects of vocabulary were completely neglected.

Besides these, there are many experimental studies carried out to find out the effectiveness of teaching aids in teaching the meanings of vocabulary. My proposed study is different from others as I attempted to find out the effectiveness of hand drawn pictures in teaching meaning aspect of vocabulary at grade eight which is not focussed in any other researches carried out so far.

1.3 Objectives of the Study

The objectives of this research were:

- a) to find out the effectiveness of hand drawn pictures in teaching meaning aspect of vocabulary items.
- b) to point out some pedagogical implications.

1.4 Significance of the Study

The study will be significant to elicit the effectiveness of hand drawn pictures in teaching vocabulary. Hence, the study will be focussed mainly to provide information about the effectiveness of hand drawn pictures in teaching the meaning aspect of vocabulary at grade eight. The teachers, students, textbook writers, language planners, syllabus designers and methodologists will be benefited with my major findings. It will be equally important to university students at faculty of education specializing in English, if interested to carry out the similar type of research.

CHAPTER TWO

METHODOLOGY

This chapter deals with the methodology adopted by the study. It comprises with the source of data, population of the study, sampling procedure, tools and process of data collection and limitation of the study. To fulfil the objectives, I followed the following methodologies.

2.1 Sources of Data

Both primary and secondary sources were adopted for the collection of data.

The sources are as follows:

2.1.1 Primary Sources

The Primary sources of data for the proposed study were students of grade eight of Sarwajanik Secondary School of Bara district.

2.1.2 Secondary Sources

The secondary sources were various journals, articles, books, reports and online sources related to English language teaching materials and practices. English text book of grade eight was mainly consulted for designing tools. The books consulted during the study are mentioned in the reference section. Some of them include Richards and Rodgers (1986), Harmer (1991), Ur (1992) and Tomlinson (1999) etc.

2.2 Population of the Study

All the students of grade eight studying at Sarwajanik Secondary School of Bara district were the total population of the study.

2.3 Sampling Procedure

From the total students of grade eight, sixty students were sampled on the basis of simple random sampling procedure using the technique of fishbowl draw (lottery). Then, pre-test was given to the sampled population. The students were ranked on the basis of pre-test. After that, the sampled students were divided into two equal groups: A) experimental group and B) controlled group, in terms of odd and even number as ranked after the pre-test. The ranking procedure and group division will be as follows:

Pre-test	(A) Experimental Group	Controlled Group (B)
1 - 60	Odd numbers (30)	Even numbers (30)

2.4 Tools for Data Collection

The main tool for the data collection was a test based on grade eight English textbook. It consisted of ninety vocabulary items. Before preparing the set of test items, vocabularies from the grade eight textbook was classified under different types of items. The types of items, the number of items in each type and the weightage of the items are as follows:

S. No.	Types of items	No. of items	Marks for each items
1.	Collective nouns	10	10
2.	Compound nouns: combination of two nouns	10	10
3.	Words that only occur in plural	10	10
4.	Homonyms	10	20
5.	Irregular Verbs	20	20
6.	Common adjectives	10	10
7.	Common adverbs	10	20
8.	Total	80	100

2.5 Process of Data Collection

I visited Sarwajanik Secondary School of Bara district and asked the authority for the permission to teach grade eight students for the research purpose.

- i. I took a sample of study from grade eight students.
- ii. I developed a test based on selected vocabulary items.
- iii. I conducted pre-test of the selected vocabulary items to the sampled students
- iv. Then I divided the sample population into two groups: controlled (group A) and experimental (group B) each consisting 30 students.
- v. I taught thirty lessons to control group without using hand drawn pictures. The same number of lessons was given to the experimental group making the use of hand drawn pictures.
- vi. A post - test of vocabulary items was given for both the groups after the completion of thirty lessons. A post-test and pre-test were administered to find out the effectiveness of hand drawn pictures.
- vii. Then I correlated the result of pre-test and post-test of each group and compared the effectiveness of hand drawn pictures.

2.6 Limitations of the Study

The limitations of the study were as follows:

- i. The study was limited to the meaning aspect of vocabulary.
- ii. It was limited to the use of hand drawn pictures only.
- iii. The test consisted of vocabulary items only.
- iv. The test items were based on the curriculum and textbook of grade eight.
- v. The study was limited to the analysis of data collected from the sixty students of grade eight of the selected school only.
- vi. The study was further limited to the analysis of data collected from teaching of vocabulary for one month only.

CHAPTER THREE

ANALYSIS AND INTERPRETATIONS

This chapter deals with analysis and interpretation of the data. The main objective of this study was to find out the effectiveness of hand drawn pictures in teaching meaning of the vocabulary items at lower secondary level. The collected data are analyzed and interpreted descriptively as well as analytically using appropriate statistical tools, tables and diagrams. The data have been grouped under four main headings and they are analyzed separately. They are as follows.

- 1) Holistic Comparison,
- 2) Item wise Comparison :

The data under this heading are grouped as follows

- i. The result in teaching collective nouns.
 - ii. The result in teaching compound nouns.
 - iii. The result in teaching words that only occur in plural.
 - iv. The result in teaching homonyms.
 - v. The result in teaching irregular verbs.
 - vi. The result in teaching adjectives.
 - vii. The result in teaching adverbs.
- 3) Intra-test Comparison and
 - 4) Co-relational Analysis

While analyzing the data, the individual score of both tests (pre and post test) have been taken and tabulated group wise. Then the average score of both groups on the two tests is determined. Higher average score in post test shows the progress of the group. Group 'A' was taught by using hand drawn pictures whereas group 'B' was taught without using hand drawn pictures. The result is converted into percentage. The two groups have been compared on the basis of the percentage. It is assumed that one group performed better than other

because the use of the hand drawn pictures for that group was relatively more effective.

In this study, Group 'A' refers to experimental group that was taught using hand drawn pictures and Group 'B' refers to the control group that was taught as usual without using hand drawn pictures. The analysis and interpretation of the study through the collected data is given below:

3.1 Holistic Comparison

The holistic comparison is computed and tabulated in the following table.

Table No. 1
Comparison of pre- and post-test scores

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	46.2	62.36	16.16
Experimental	48.8	79.53	30.73

From the above table of holistic comparison, it can be observed that the Group B has the average score of 46.2 in the pre-test and 62.36 in the post-test. It has increased its average score by 34.97%. Group A has the average score of 48.8 in the pre-test and 79.53 in the post-test. It has increased its average score by 62.97%. It can be observed that in Group A has progressed far more than Group B.

The T-test of both tests i.e., pre- and post- and both the groups i.e., control and experimental groups is shown as below:

3.1.1 Control Group

Difference of mean of control group in pre-test and post-test (46.2-62.36) =16.16

Difference of SD of control group in pre-test and post-test (8.48-6.75) =1.73

(see, Appendix-II)

$$N_1=N_2=30$$

$$df = N-1$$

$$= 30-1$$

$$= 29$$

Null Hypothesis

There is no significant difference between the mean of pre-test and post-test of control group.

Now, according to formula,

$$\begin{aligned}t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\S_{\bar{D}} &= \sqrt{\frac{t_1(N_1-1) + t_2(N_2-1)}{N_1 + N_2 - 2}} \\&= \sqrt{\frac{6.75(30-1) + 8.48(30-1)}{30 + 30 - 2}} \\&= \sqrt{\frac{195.75 + 245.92}{58}} \\&= \sqrt{\frac{441.67}{58}} \\&= \sqrt{7.61} \\&= 2.756\end{aligned}$$

Now,

$$\begin{aligned}t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\&= \frac{46.2 - 62.36}{2.75} \\&= \frac{-16.16}{2.75} \\&= -5.87\end{aligned}$$

Table value at 0.05 significance level in df 29 of two tailed t-test=2.045.
Hence, the calculated value, i.e., -5.87 is greater than that of tabulated value, i.e., 2.045. So, the null hypothesis is rejected. This was that there is effect of teaching for a month time since it shows better result in post-test.

3.1.2 Experimental Group

Difference of mean of experimental group in pre-test and post-test

$$(48.8-79.53) =30.73$$

Difference of SD mean of experimental group in pre-test and post-test

$$(7.82-4.37) =3.45(\text{see Appendix-II})$$

Null Hypothesis

There is no significance difference between the mean of pre-test and post-test of experimental group.

Now, according to the formula,

$$\begin{aligned}
t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\
S_{\bar{D}} &= \sqrt{\frac{t_1(N_1-1) + t_2(N_2-1)}{N_1 + N_2 - 2}} \\
&= \sqrt{\frac{7.82(30-1) + 4.37(30-1)}{30 + 30 - 2}} \\
&= \sqrt{\frac{226.78 + 126.73}{58}} \\
&= \sqrt{\frac{353.51}{58}} \\
&= \sqrt{6.09} \\
&= 2.46
\end{aligned}$$

Now,

$$\begin{aligned}
t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\
&= \frac{48.8 - 79.53}{2.46} \\
&= \frac{-30.73}{2.46} \\
&= -12.49
\end{aligned}$$

Therefore, t value = -12.49

Table value at 0.05 significance level in df 29 of one tailed t-test = 1.699.

Hence, the calculated value, i.e. 12.49 is greater than that of tabulated value, i.e. 1.699. So, the null hypothesis is rejected. Therefore, the achievement of the students is high in post-test because of using the hand drawn pictures during the teaching period. It is concluded that there is great role of using hand drawn picture in teaching the meanings of vocabulary items.

3.1.3 Pre-test of control group and experimental group

Mean of control group in pre-test (\bar{X}_1) = 46.2.

Mean of experimental group in pre-test (\bar{X}_2) = 48.8.

Standard Deviation (\dagger) of control group in pre-test (\dagger_1) = 6.75.

(See Appendix- II)

Standard Deviation (\dagger) of experimental group in pre-test (\dagger_2) = 7.82.

(See Appendix-II)

Null Hypothesis

There is no significance difference in means of control group and experimental group in pre-test.

Now, according to the formula,

$$\begin{aligned}t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\S_{\bar{D}} &= \sqrt{\frac{\dagger_1(N_1-1) + \dagger_2(N_2-1)}{N_1 + N_2 - 2}} \\&= \sqrt{\frac{6.75(30-1) + 7.82(30-1)}{30 + 30 - 2}} \\&= \sqrt{\frac{195.75 + 226.78}{58}} \\&= \sqrt{\frac{422.53}{58}} \\&= \sqrt{7.28} \\&= 2.69\end{aligned}$$

Now,

$$\begin{aligned}t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\&= \frac{46.2 - 48.8}{2.69} \\&= \frac{-2.6}{2.69} \\&= -0.96\end{aligned}$$

The table value at 0.05 significance level in two tailed t-test at 29 df=2.045. Hence, calculated t value is less than that of table value. So, the null hypothesis is accepted. There is no significance difference between the means of control group and experimental group in pre-test.

3.1.4 Post-test of control group and experimental group

Mean of control group in post-test (\bar{X}_1) = 62.36.

Mean of experimental group in post-test (\bar{X}_2) = 79.53.

Standard Deviation (σ) of control group in post-test (σ_1) = 8.48.

(See Appendix-II)

Standard Deviation (σ) of experimental group in post-test (σ_2) = 4.37.

(See Appendix-II)

Null Hypothesis

There is no significance difference in means of control group and experimental group in post-test.

Now, according to the formula,

$$\begin{aligned}
t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\
S_{\bar{D}} &= \sqrt{\frac{t_1(N_1-1) + t_2(N_2-1)}{N_1 + N_2 - 2}} \\
&= \sqrt{\frac{8.48(30-1) + 4.37(30-1)}{30 + 30 - 2}} \\
&= \sqrt{\frac{245.92 + 126.73}{58}} \\
&= \sqrt{\frac{372.65}{58}} \\
&= \sqrt{6.425} \\
&= 2.53
\end{aligned}$$

Now,

$$\begin{aligned}
t &= \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{D}}} \\
&= \frac{62.36 - 79.53}{2.53} \\
&= \frac{-17.17}{2.53} \\
&= -6.78
\end{aligned}$$

The t value at 0.05 significance level in one tailed t-test at 29 df is 1.699 which is less than that of calculated value that is 6.78. So, the null hypothesis is rejected. Hence, the achievement of the students in experimental group is high than that of control group because the students of experimental group were taught by the use of hand-drawn pictures while teaching.

3.2 Item wise Comparison

In this section, the collected data are analyzed and interpreted under the following seven different sub-headings:

3.2.1 Result in Teaching Collective Nouns

Table No. 2

Result in Teaching Collective Nouns

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	5.36	6.4	1.04
Experimental	5.23	8.03	2.8

The above table shows that the Group B has the average score of 5.36 in the pre-test and 6.4 in the post-test. The group has increased its average score by 19.40%. Group A has the average score of 5.23 in pre-test and 8.03 in the post-test. This group has increased its average score by 5.53%. It shows that the increase in the marks of the Group A is more than the Group B. Thus, it can be observed that Group A made better progress than Group B in this item.

3.2.2 Result in Teaching Compound Nouns

Table No. 3

Result in Teaching Compound Nouns

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	4.6	5.6	1
Experimental	5.33	7.9	2.57

The above table shows that the Group B has the average score of 4.6 in the pre-test and 5.6 in the post-test. The group has increased its average score by 2.17%. Group A has the average score of 5.33 in the pre-test and 7.9 in the post-test. This group has increased its average score by 48.21%. It shows that Group A has done better progress than Group B in this item.

3.2.3 Result in Teaching Words that only occur in Plural Nouns

Table No. 4

Result in Teaching Words that only occur in Plural Nouns

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	5.36	6.5	1.14
Experimental	5.43	6.73	1.3

The above table shows that the Group B has the average score of 5.36 in the pre-test and 6.5 in the post-test. The group has increased its average score by 21.26%. Group A has the average score of 5.43 in pre-test and 6.73 in the post-test. This group has increased its average score by 23.94%. It shows that the increase in the marks of Group A is more than that of the Group B. From here, it can be observed that the Group A made better progress than the Group B in this item.

3.2.4 Result in Teaching Homonyms

Table No. 5

Result in Teaching Homonyms

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	9.2	12.56	3.36
Experimental	9.03	16.8	7.77

The above table shows that Group B has the average score of 9.2 in the pre-test and 12.56 in the post-test. The group has increased its average score by 36.52%. Group A has the average score of 9.03 in pre-test and 16.8 in the post-test. This group has increased its average score by 86.04%. It shows that Group A has done better progress than Group B in this item.

3.2.5 Result in Teaching Irregular Verbs

Table No. 6

Result in Teaching Irregular Verbs

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	7.56	11.9	4.34
Experimental	8.6	16.06	7.46

The above table shows that Group B has the average score of 7.56 in the pre-test and 11.9 in the post-test. The group has increased its average score by 57.40%. Group A has the average score of 8.6 in pre-test and 16.06 in the post-test. This group has increased its average score by 86.74%. It shows that Group A has done better progress than Group B in this item.

3.2.6 Result in Teaching Adjectives

Table No. 7

Result in Teaching Adjectives

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	5.6	6.63	1.03
Experimental	5.96	7.66	1.7

The above table shows that the Group B has the average score of 5.6 in the pre-test and 6.63 in the post-test. The group has increased its average score by 18.39%. Group A has the average score of 5.96 in pre-test and 7.66 in the post-test. This group has increased its average score by 28.52%. It shows that Group A has done better progress than Group B in this item.

3.2.7 Result in Teaching Adverbs

Table No. 8

Result in Teaching Adverbs

Group	Average Score in Pre-test	Average Score in Post-test	Difference
Control	8.3	12.76	4.46
Experimental	9.2	16.33	7.13

The above table shows that the Group B has the average score of 8.3 in the pre-test and 12.76 in the post-test. The group has increased its average score by 53.73%. Group A has the average score of 9.2 in pre-test and 16.33 in the post-test. This group has increased its average score by 77.5%. It shows that Group A has done better progress than Group B in this item.

3.3 Intra-test Comparison

In this comparison, the achievements of both the groups; the control group and the experimental group, are tabulated under the pre-test and post-test separately in separate tables and their achievements are computed and compared within the same test.

a. Pre-test

Table No. 9

Pre-test Comparison of Control and Experimental Group

S. No.	Types of test items	Control Group	Compare symbol	Experimental Group	Difference
1.	Use the correct collective words in the blank spaces.	5.36	>	5.23	-0.13
2.	Fill in the blanks to make compound nouns.	4.6	<	5.33	0.73
3.	What things which are always plural nouns.	5.56	>	5.43	-0.13
4.	Draw the picture.	9.2	>	9.03	-0.17
5.	Fill up the gaps using the correct form of the verb given in the brackets.	7.56	<	8.6	1.04
6.	Match the following.	5.6	<	5.96	0.36
7.	Underline the adverbs in the passage given below and put them in the suitable pictures.	8.3	<	9.2	0.9

The pre-test average score of both the groups are computed and tabulated in table no. 9. It shows that the control group has obtained more marks in the first, third and fourth items. The more marks in these items of them over the Experimental Group are 0.13, 0.13 and 0.1 respectively.

The Experimental Group has obtained more marks in the second, fifth, sixth and seventh items. The more marks in the respective items of it over the Control Group are 0.73, 1.04, 0.36 and 0.9 respectively.

b. Post-test**Table No. 10****Post-test Comparison of Control and Experimental Group**

S. No.	Types of test items	Control Group	Compare symbol	Experimental Group	Difference
1.	Use the correct collective words in the blank spaces.	6.4	<	8.03	1.63
2.	Fill in the blanks to make compound nouns.	5.6	<	7.9	2.3
3.	What things which are always plural nouns.	6.5	<	6.73	0.23
4.	Draw the picture.	12.56	<	16.8	4.24
5.	Fill up the gaps using the correct form of the verb given in the brackets.	11.9	<	16.06	4.16
6.	Match the following.	6.63	<	7.66	1.03
7.	Underline the adverbs in the passage given below and put them in the suitable pictures.	12.76	<	16.33	3.57

The post-test average score of both the groups are computed and tabulated in table no. 10. It shows that the Experimental Group has secured more marks in all seven items than the Control Group. In the first item, the Experimental Group has secured more marks by 1.63, in the second by 2.3, in the third by 0.23, in the fourth by 4.24, in the fifth by 4.16, in the sixth by 1.3 and in the seventh by 3.57.

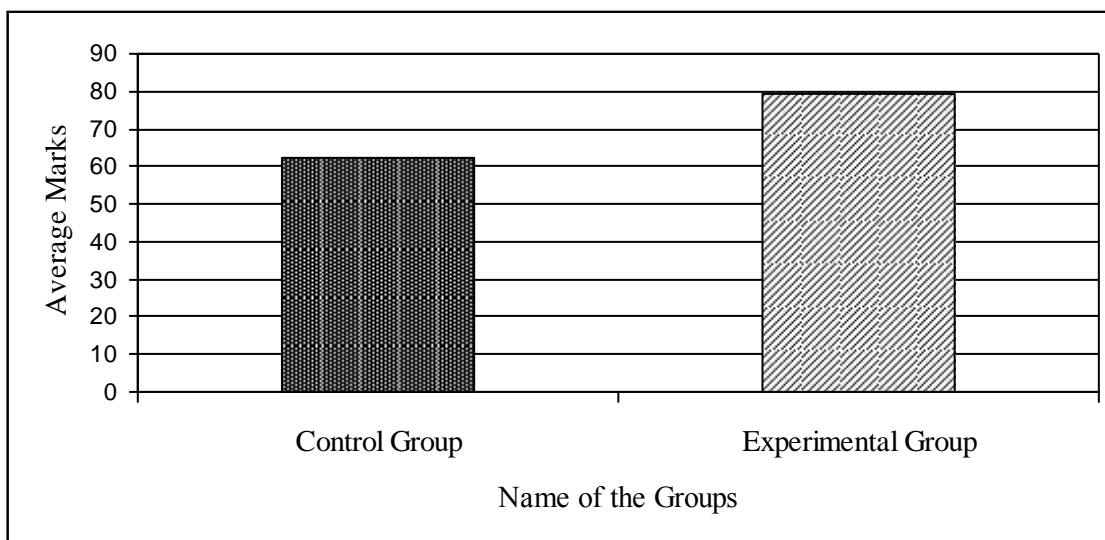
It shows that the Experimental Group has progressed more effectively than the Control Group. Table no. 10 shows that there is the more difference in marks between the Control and Experimental Group in the different items of the test.

3.3.1 Comparison Between two Groups in Post-test

The average score of Group A and Group B in post-test only is compared in the following charts.

Diagram No. 1

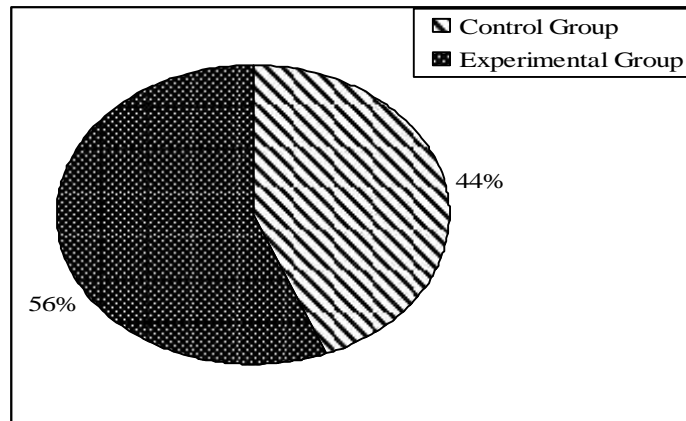
Comparison Between two Groups in Post-test



The data of the above figure can also be shown in the following chart to make the information more vivid.

Chart No. 1

Comparison Between two Groups in Post-test



In the above pie chart, it can be clearly observed that the Experimental Group has progressed in greater portion than the Control Group. The average score of Experimental Group is increased by 56% where as that of Control Group is only 44%. It means the teaching is more effective by using hand drawn pictures.

The comparison between two tests items (i.e. the average marks of the pre-test and the post-test) can be observed in the following frequency distribution chart.

Chart No. 2

Difference between Control and Experimental Group in Pre-test

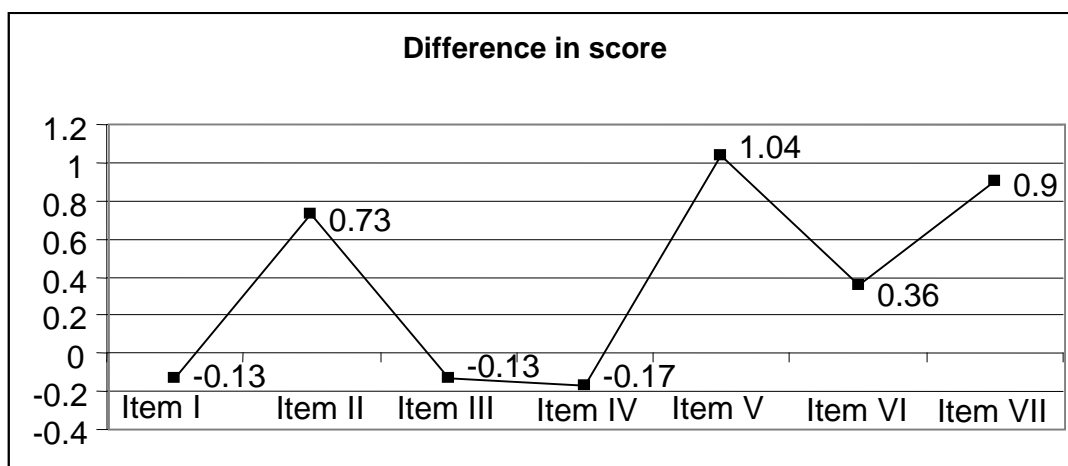
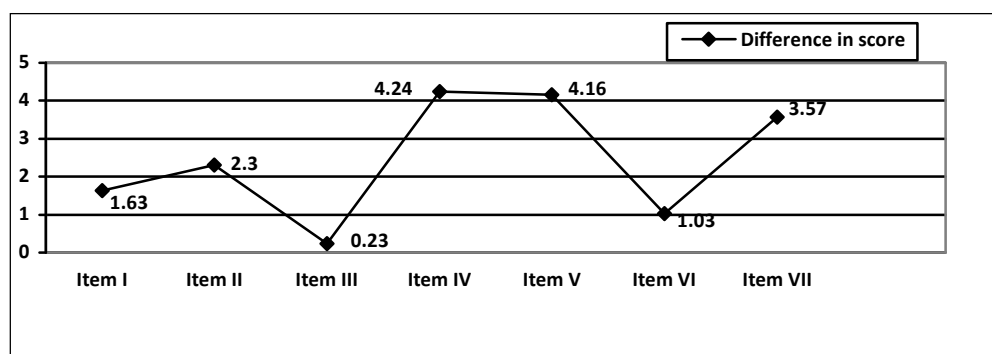


Chart No. 3

Difference between Control and Experimental Group in Post-test



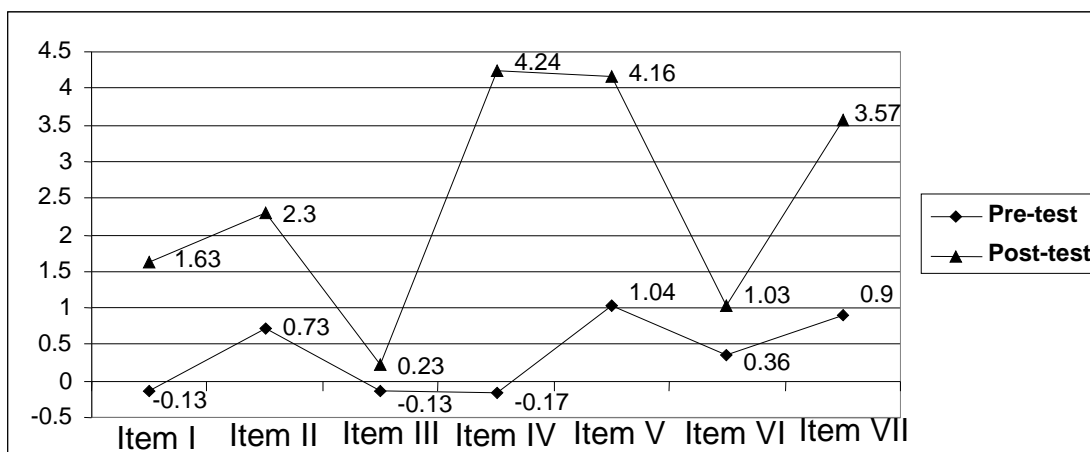
From the above chart nos. 2 and 3, the difference in score of the Experimental Group and Control Group shows that Experimental Group has progressed better in most of the test items.

I have tried to find out overall effectiveness of teaching vocabulary using hand drawn pictures at lower secondary level. After teaching them for a month period, students were able to raise their ability in learning vocabulary. In the beginning, their pre condition in learning meaning of the vocabulary was found lower in all the test items. After one month, teaching them regularly focusing on the same teaching item, students were found to have improved their performance satisfactory. But in some items, the students were found not to have improved. The difference between the two tests is quite wide, more than

double at the performance level of students. The holistic comparison of difference between Control and Experimental Group in pre-test and post-test is presented in the following figure.

Chart No. 4

Difference between Control and Experimental Group in Pre-test and post-test



From the above figure, it can be concluded that the performance of Experimental Group is highly increased than the performance of Control Group.

3.4 Corelational Analysis

The main aim of this research work is to find out the degree of the effectiveness of teaching vocabulary by using hand drawn pictures. In the light of main objective, a correlation coefficient between the two variables viz. performance difference between the pre-test and post-test of the Experimental Group and the performance difference between the pre-test and the post-test of the Control Group was also calculated.

For the purpose of the interpretation of coefficient and gradation of the overall result, the following established criteria were taken.

- 1) r's from 0.00 to ± 0.20 = very low, negligible
- 2) r's from ± 0.20 to ± 0.40 = low, present but slight

3) r's from ± 0.40 to ± 0.70 = substantial or marked

4) r's from ± 0.70 to ± 1.00 = high or very high

Correlation between the improvement differences of the pre-test and the post-test of the Experimental Group and Control Group in overall test items is presented in the following table.

Table No. 11

Correlation of Control and Experimental Groups in Post-test

Test items	Increment percent (%) in the post-test of Group A	Increment percent (%) in the post-test of Group B	Correlation Coefficient
1. Use the correct collective words in the blank spaces.	53.53	19.40	0.91
2. Fill in the blanks to make compound nouns.	48.22	16.90	
3. What things which are always plural nouns.	23.94	21.27	
4. Draw the picture.	86.04	36.52	
5. Fill up the gaps using the correct form of the verb given in the brackets.	86.74	57.41	
6. Match the following.	28.52	18.39	
7. Underline the adverbs in the passage given below and put them in the suitable pictures.	77.50	53.73	

The above table shows the correlation between the performance difference of the Experimental Group (A) and the Control Group (B) in the overall test

items. It inferred that the correlation coefficient is 0.91 i.e. highly positive. That means the correlation between the performance difference of the Experimental Group and the Control Group in the overall tests is highly positive which indicates that the use of hand drawn pictures in teaching vocabulary is more effective. The correlation process of the above data is clearly mentioned below:

Test Items	Increment % of Group A	$x = A - \bar{X}$	x^2	Increment % of Group B	$\bar{y} = B - Y$	y^2	xy	Correlation r_{AB}
I	53.53	-4.25	18.06	19.04	-12.61	159.01	53.59	0.91
II	48.22	-9.56	91.39	21.74	-10.27	105.47	98.18	
III	23.94	-33.84	1145.14	16.90	-15.11	228.31	511.32	
IV	86.04	28.26	798.62	36.52	4.51	20.34	127.45	
V	86.74	28.96	838.68	57.41	25.4	645.16	735.58	
VI	28.52	-29.26	856.14	18.39	-13.62	185.50	398.52	
VII	77.5	19.72	388.87	53.73	21.72	471.75	428.31	
	$\bar{X}=57.78$	$x=0.03$	$x^2=3636.90$	$\bar{Y}=32.01$	$y=0.02$	$y^2=1815.54$	$xy=2352.95$	

$$\begin{aligned}
 r_{AB} &= \frac{N\sum xy - \sum x \cdot \sum y}{\sqrt{[N\sum x^2 - (\sum x)^2][N\sum y^2 - (\sum y)^2]}} \\
 &= \frac{7 \times 2352.95 - 0.03 \times 0.02}{\sqrt{[7 \times 3636.9 - (0.03)^2][7 \times 1815.54 - (0.02)^2]}} \\
 &= \frac{16468.55 - 0.0006}{\sqrt{(25458.3 - 0.0009)(12708.78 - 0.0004)}} \\
 &= \frac{16468.54}{\sqrt{25458.29 \times 12708.77}} \\
 &= \frac{16468.54}{\sqrt{3235437966}} \\
 &= \frac{16468.54}{17987.32} \\
 &= 0.91
 \end{aligned}$$

CHAPTER FOUR

FINDINGS AND RECOMMENDATIONS

This chapter deals with the major findings of the research. It also deals with some recommendations and pedagogical implications which are made on the basis of analysis and interpretation of the data. The major concern of this study was to find out the role of hand drawn pictures in teaching meaning of vocabulary items to the students of lower secondary level. The data were collected by constructing test items of the selected vocabulary items particularly from the grade eight text book. While analyzing the data, it was found that the students of Experimental Group progressed a lot in comparison to the Control Group.

4.1 Findings

After the completion of the analysis and interpretation of the data, the major findings of the study are summarized as follows.

1. The result of post-test showed that the Experimental Group obtained better marks in most of the test items. It is found that the Experimental Group progressed more effectively than a Control Group.
2. In the test item no. 1, “Use the correct collective words in the blank spaces”, it was supposed to evaluate students’ ability to recognize the word meaning from the picture and to choose the correct word from the box to fill up the spaces. It has been found that Experimental Group has got more average mark than the Control Group. The result shows that teaching vocabulary through hand drawn pictures has been more effective than the usual way of teaching.
3. The test item no. 2, “Fill up the gaps to make compound nouns” was aimed at evaluating the examinee’s competence to make a new word looking at the given picture. It has been found that, the Experimental Group which was taught through hand drawn pictures secured more average increment marks than Control Group. This also points out that

teaching through the use of hand drawn pictures have been more effective than the usual way of teaching.

4. To examine the students' ability to identify the word through visual, the test item no. 3 recognizing the object, and fill in the gap was developed. It was found that the Experimental Group has scored better marks than the Control Group. This tells us that it is very effective to teach vocabulary through hand drawn pictures.
5. The test item no. 4, "Draw the picture for the word which stands for the noun" was supposed to evaluate whether students have built up the concepts of an abstract thing and object and also an ability to draw the picture by their own, it was found that the Experimental Group which was taught with the use of hand drawn pictures has shown good performance than Control Group.
6. The test item no. 5, "Fill up the gaps using the correct form of the verb given in the bracket" was aimed at evaluating examinees' competence to use the correct form of the verb looking at the picture. It has been found that the Experimental Group which was taught through hand drawn pictures secured more average increment mark than Control Group. This also shows that teaching verbs through picture is more effective than the usual way of teaching.
7. The test item no. 6 i.e., in matching item, the students were supposed to match appropriate word meaning with the respective pictures. In this case, the Experiment Group again progressed a lot than the Control Group. This indicates that it is very effective to teach the vocabulary through the use of pictures.
8. The test item no. 7 was designed for recognizing activities and pictures were designed to assess the students' ability to underline the adverbs in the passage and place them under the correct picture. It was found that the Experimental Group performed the test item more satisfactorily than

the Control Group. This shows that the teaching vocabulary through the use of pictures have been more effective than without using the pictures.

9. From the intra-test comparison, Experimental Group has done better in all seven items than the Control Group. This shows that hand drawn pictures are most effective and useful means for teaching the meaning of any vocabulary items.

The findings of this research work were determined on the basis of average marks obtained by the students. The result of the post-test showed that both groups progressed in most of the cases. Both groups were taught the same vocabulary items but the techniques were different. The Control Group was taught without the use of hand drawn pictures whereas the Experimental Group was taught with the use of hand drawn pictures. As a whole it was found that the performance of Experimental Group was far better than the Control Group.

4.2 Recommendations

The study found out that there is an important role of teaching materials in a language classroom. After conducting this study using the hand drawn pictures, it was found that the uses of visual aids play a great role in teaching meanings of the vocabulary in. On the basis of the findings, the following recommendations have been forwarded for pedagogical implications.

1. The concerned body should pay attention towards the English language teaching. The curriculum designers, teachers and subject experts should be conscious of teaching any aspects of a language through visual aids.
2. The English language teachers, particularly, should be very careful in using the appropriate teaching materials as per level, interest, age etc. of the learners.
3. This research shows that Group A performed relatively better in every items of teaching vocabulary. Therefore, the teachers are suggested to

use the hand drawn pictures to build up the concept which is most accessible in all circumstances.

4. The school should make the proper arrangement of the teaching materials and also should pay attention towards the students for the development of the English language aspects and skills.
5. Learner-centred method should be fostered to improve their learning. Vocabulary teaching should be given priority since it is the building blocks of the language.
6. Pictures are very useful means of teaching vocabulary. There is a saying “A picture is worth ten thousand words”. The teachers, as the real pedagog, should make the use of pictures such as blackboard drawing, posters, charts, flash cards etc. for vocabulary teaching in the classroom.
7. To implement aforementioned technique in the school level effectively, the teacher should be trained and provided with sufficient teaching materials.
8. The concerned authority has to help teachers to improve their teaching techniques conducting teacher-training programme regularly.

For the further researchers,

1. This study was limited to only a public school of Bara district and only eight graders. It is advisable to carry out further researches including large number of population at different levels and more schools of different types from different parts of the country.
2. The research has been limited to teaching meaning aspect of the vocabulary. It would be desirable for further studies on other aspects and skills of the English language.
3. Workshops, interactions programmes, seminars, conferences of the teachers, linguists, scholars, course designers, ELT experts, guardians, students etc. should be organized for developing appropriate materials as per level, age, demand and interest of the learners.

Appendix – II

Model lesson plan

School: Sarbajanik Secondary School

Grade: Eight

Topic: Verbs

AIM: At the end of the class, students will be able to

- say the meaning of the verbs and use them correctly in a sentence.

Group A

TEACHING AIDS: Hand drawn pictures, flash cards, flannel board, pocket charts.

PROCEDURE

PRESENTATION:

- The teacher shows the picture cards one by one and asks the question to the whole class, what is it?
- The teacher asks simple questions about the picture.
- The teacher writes down vocabulary items on the black board with their respective meanings.

PRACTICE:

- The teacher makes the students practice in correct use of verbs constructing various sentences.

PRODUCTION:

- The teacher asks the meaning of the words to the students dividing them in groups.

- The teacher asks them to use the verbs in sentences.

Group B

PROCEDURE

PRESENTATION:

- The teacher says the meaning of the words in their mother tongue.
- The teacher writes down the sentences on the blackboard using verbs selected for the day.

PRACTICE:

- The teacher makes the students practice in correct use of verbs constructing various sentences.

PRODUCTION:

- The teacher asks the meaning of the words to the students dividing them in groups.
- The teacher asks them to use the verbs in sentences.

Appendix – III

Pre-test

Table No. 1

Roll no.	Name	Item I	Item II	Item III	Item IV	Item V
1	Lekha Thapa	06	07	05	12	13
2	Kabita Timalisina	06	05	06	10	12
3	Rudra Adhikari	05	06	07	09	11
4	Purnima Chaudhari	04	09	06	10	12
5	Kabita Tamang	07	08	09	08	07
6	Narayan Karki	05	05	06	07	04
7	Roshani Khadka	05	04	08	07	06
8	Sushmita Kafle	06	07	08	09	09
9	Ganesh B.K.	05	06	07	09	08
10	Prakriti Raut	04	02	05	09	07
11	Sabita Tamang	07	06	04	10	12
12	Apsara Khadka	06	06	05	10	10
13	Sudan Upadhya	06	07	05	09	08
14	Sarita Tamang	04	08	06	08	09
15	Ganga Kadel	06	07	08	10	06
16	Navaraj Karki	05	06	04	11	04
17	Devaki Sapkoti	04	07	04	10	05
18	Karishma Timalisana	07	03	05	10	00
19	Saba Kumari Bajgain	04	06	05	10	05
20	Lal Bahadur Kushwar	08	02	09	06	05
21	Rachana Paudel	02	08	07	03	05
22	Ratna Khadka	06	04	05	05	02

23	Dhruba B.K.	07	03	05	08	07
24	Ranju Shah	08	02	06	04	05
25	Anita Khanal	03	02	05	05	05
26	Subba Lama	08	02	09	06	05
27	Suku Maya Bal	07	06	04	10	12
28	Gita Adhikari	02	04	05	09	07
29	Bhoj Raj Raut	06	05	06	07	03
30	Sabita Kushwar	09	04	07	10	10
31	Nawaraj Bajgain	05	05	06	10	10
32	China Sapkota	06	06	05	10	10
33	Rachana Raut	04	05	05	09	11
34	Shankar Thapa	05	05	05	10	08
35	Ena Puri	06	05	05	10	07
36	Devi Neuapane	06	05	05	10	02
37	Parbati Dahal	05	06	02	05	10
38	Santosh Timalisina	00	02	06	10	05
39	Sabita Neupane	05	04	05	09	11
40	Sirjana Thapa	05	05	05	08	10
41	Santosh Thapa	06	05	03	05	10
42	Yam Thapa	05	05	05	11	09
43	Sunita B.K.	04	05	04	10	07
44	Suraj Gautam	05	05	06	10	10
45	Sagun Shrestha	08	07	05	12	13
46	Renuka Chauwan	07	07	05	13	12
47	Ramesh Adhikari	07	05	07	13	12
48	Niru Lama	07	07	05	13	11
49	Sushila Basnet	02	00	06	10	07
50	Tej Raj Timalisina	05	06	04	10	07

51	Kumari Lama	08	05	05	09	11
52	Manu Lama	08	05	07	12	13
53	Anjali Thapa	03	05	05	10	08
54	Pancha Lal Bal	02	01	06	10	07
55	Pratikshya Lama	08	07	05	12	13
56	Usha Thapa	06	05	02	05	10
57	Shyam Chaulagain	06	06	05	10	10
58	Bijaya Timalina	04	05	04	10	07
59	Nirajan Parajuli	00	02	06	10	05
60	Narayani Neupane	02	00	05	10	05
	Total	318	300	318	547	483
	Average	5.3	5.0	5.3	9.11	8.05

Pre-test
Experimental Group
Table No. 2

R.N	Name	Item I	Item II	Item III	Item IV	Item V
1	Lekha Thapa	06	07	05	12	13
3	Rudra Adhikari	05	06	07	09	11
5	Kabita Tamang	07	08	09	08	07
7	Roshani Khadka	05	04	08	07	06
9	Ganesh B.K.	05	06	07	09	08
11	Sabita Tamang	07	06	04	10	12

13	Sudan Upadhya	06	07	05	09	08
15	Ganga Kadel	06	07	08	10	06
17	Devaki Sapkota	04	07	04	10	05
19	Saba Kumari Bajgain	04	06	05	10	05
21	Rachana Paudel	02	08	07	03	05
23	Dhruba B.K.	07	03	05	08	07
25	Anita Khanal	03	02	05	05	05
27	Suku Maya Bal	07	06	04	10	12
29	Bhoj Raj Raut	06	05	06	07	03
31	Nawaraj Bajgain	05	05	06	10	10
33	Rachana Raut	04	05	05	09	11
35	Ena Puri	06	05	05	10	07
37	Parbati Dahal	05	06	02	05	10
39	Sabita Neupane	05	04	05	09	11
41	Santosh Thapa	06	05	03	05	10
43	Sunita B.K.	04	05	04	10	07
45	Sagun Shrestha	08	07	05	12	13
47	Ramesh Adhikari	07	05	07	13	12
49	Sushila Basnet	02	00	06	10	07
51	Kumari Lama	08	05	05	09	11
53	Anjali Thapa	03	05	05	10	08
55	Pratikshya Lama	08	07	05	12	13
57	Shyam Chaulagain	06	06	05	10	10
59	Nirajan Parajuli	00	02	06	10	05
	Total	156	160	163	274	258

Here, $\Sigma x=1464$

$$\Sigma x^2=73282$$

$$N=30$$

$$\begin{aligned}
t &= \sqrt{\frac{\sum x^2}{N} - \left(\frac{\sum x}{N}\right)^2} \\
&= \sqrt{\frac{73282}{30} - \left(\frac{1464}{30}\right)^2} \\
&= \sqrt{2442.73 - (48.8)^2} \\
&= \sqrt{2442.73 - 2381.44} \\
&= \sqrt{61.29} \\
&= 7.82
\end{aligned}$$

Pre-test
Control Group
Table No. 3

R.N.	Name	Item I	Item II	Item III	Item IV	Item V
2	Kabita Timalisina	06	05	06	10	12
4	Purnima Chaudhari	04	09	06	10	12

6	Narayan Karki	05	05	06	07	04
8	Sushmita Kafle	06	07	08	09	09
10	Prakriti Raut	04	02	05	09	07
12	Apsara Khadka	06	06	05	10	10
14	Sarita Tamang	04	08	06	08	09
16	Navaraj Karki	05	06	04	11	04
18	Karishma Timalšana	07	03	05	10	00
20	Lal Bahadur Kushwar	08	02	09	06	05
22	Ratna Khadka	06	04	05	05	02
24	Ranju Shah	08	02	06	04	05
26	Subba Lama	08	02	09	06	05
28	Gita Adhikari	02	04	05	09	07
30	Sabita Kushwar	09	04	07	10	10
32	China Sapkota	06	06	05	10	10
34	Shankar Thapa	05	05	05	10	08
36	Devi Neuapane	06	05	05	10	02
38	Santosh Timalšana	00	02	06	10	05
40	Sirjana Thapa	05	05	05	08	10
42	Yam Thapa	05	05	05	11	09
44	Suraj Gautam	05	05	06	10	10
46	Renuka Chauwan	07	07	05	13	12
48	Niru Lama	07	07	05	13	11
50	Tej Raj Timalšana	05	06	04	10	07
52	Manu Lama	08	05	07	12	13
54	Pancha Lal Bal	02	01	06	10	07
56	Usha Thapa	06	05	02	05	10
58	Bijaya Timalšana	04	05	04	10	07
60	Narayani Neupane	02	00	05	10	05

	Total	161	138	161	276	227
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Here, $\Sigma x=1464$

$\Sigma x^2=73282$

$N=30$

$$\begin{aligned} t &= \sqrt{\frac{\Sigma x^2}{N} - \left(\frac{\Sigma x}{N}\right)^2} \\ &= \sqrt{\frac{65400}{30} - \left(\frac{1386}{30}\right)^2} \\ &= \sqrt{(45.56 - 2381.44)} \\ &= \sqrt{45.56} \\ &= 6.75 \end{aligned}$$

Post-test
Experimental Group
Table No. 4

R.N	Name	Item I	Item II	Item III	Item IV	Item V
1	Lekha Thapa	09	09	08	19	18
3	Rudra Adhikari	09	08	07	18	19
5	Kabita Tamang	08	09	09	17	18
7	Roshani Khadka	09	09	10	16	17
9	Ganesh B.K.	08	08	09	15	16
11	Sabita Tamang	08	08	08	17	15
13	Sudan Upadhya	08	08	05	16	14
15	Ganga Kadel	09	09	06	14	14
17	Devaki Sapkoti	09	09	09	18	15

19	Saba Kumari Bajgain	07	09	05	16	16
21	Rachana Paudel	06	08	06	17	17
23	Dhruba B.K.	09	10	08	19	18
25	Anita Khanal	07	07	06	18	19
27	Suku Maya Bal	09	06	06	17	13
29	Bhoj Raj Raut	08	08	05	16	14
31	Nawaraj Bajgain	08	07	07	15	15
33	Rachana Raut	07	08	07	18	16
35	Ena Puri	09	07	06	19	17
37	Parbati Dahal	08	09	06	16	18
39	Sabita Neupane	08	09	04	17	14
41	Santosh Thapa	08	06	06	18	14
43	Sunita B.K.	07	07	06	15	15
45	Sagun Shrestha	09	08	06	17	15
47	Ramesh Adhikari	09	09	06	16	16
49	Sushila Basnet	06	06	08	18	17
51	Kumari Lama	09	04	07	15	18
53	Anjali Thapa	08	08	06	16	14
55	Pratikshya Lama	09	09	06	18	18
57	Shyam Chaulagain	09	08	06	17	16
59	Nirajan Parajuli	05	06	08	16	16
	Total	241	237	202	504	482

Here, $\Sigma x=1464$

$$\Sigma x^2=73282$$

$$N=30$$

$$\begin{aligned} t &= \sqrt{\frac{\Sigma x^2}{N} - \left(\frac{\Sigma x}{N}\right)^2} \\ &= \sqrt{\frac{190324}{30} - \left(\frac{2386}{30}\right)^2} \\ &= \sqrt{6344.13 - 6325.02} \\ &= \sqrt{19.10} \\ &= 4.37 \end{aligned}$$

Post-test Control Group

Table No. 5

R.N	Name	Item I	Item II	Item III	Item IV	Item V
2	Kabita Timalisina	07	06	07	12	15
4	Purnima Chaudhari	05	09	07	12	14
6	Narayan Karki	06	06	07	12	13
8	Sushmita Kafle	07	08	09	11	12
10	Prakriti Raut	05	03	06	13	12
12	Apsara Khadka	07	07	06	12	10
14	Sarita Tamang	05	09	07	11	12
16	Navaraj Karki	06	07	05	14	11
18	Karishma Timalisana	08	04	06	12	09
20	Lal Bahadur Kushwar	09	03	09	10	08
22	Ratna Khadka	07	05	06	10	10

24	Ranju Shah	09	03	07	10	09
26	Subba Lama	09	03	09	11	08
28	Gita Adhikari	03	05	06	12	09
30	Sabita Kushwar	09	05	08	13	11
32	China Sapkota	07	07	06	14	14
34	Shankar Thapa	06	06	06	13	13
36	Devi Neuapane	07	06	06	14	12
38	Santosh Timalisina	02	03	07	14	08
40	Sirjana Thapa	06	06	06	10	12
42	Yam Thapa	06	06	06	13	13
44	Suraj Gautam	07	06	07	14	12
46	Renuka Chauwan	08	08	06	15	14
48	Niru Lama	08	08	06	15	15
50	Tej Raj Timalisina	06	07	05	14	14
52	Manu Lama	09	06	08	14	18
54	Pancha Lal Bal	03	02	07	13	15
56	Usha Thapa	07	06	03	11	12
58	Bijaya Timalisina	05	06	05	14	12
60	Narayani Neupane	03	02	06	14	10
	Total	192	168	195	377	357

Here, $\Sigma x=1464$

$$\Sigma x^2=73282$$

$$N=30$$

$$\begin{aligned} \dagger &= \sqrt{\frac{\Sigma x^2}{N} - \left(\frac{\Sigma x}{N}\right)^2} \\ &= \sqrt{\frac{118859}{30} - \left(\frac{1871}{30}\right)^2} \\ &= \sqrt{3961.97 - 3890} \\ &= \sqrt{71.97} \\ &= 8.48 \end{aligned}$$

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