

## **CHAPTER FOUR**

# **DATA ANALYSIS AND INTERPRETATION**

## **CHAPTER - IV**

### **DATA ANALYSIS AND INTERPRETATION**

#### **4.0 INTRODUCTION**

In the previous chapter, research design of the study was presented along with the research methodology in detail. This chapter deals with the detailed results on the basis of the analysis and interpretation of the collected data. The careful and scientific analysis of the data would be helpful in arriving at the findings and ultimate conclusions of the research study on the basis of the interpretation done. Hence to reach up to the end of any research meaningfully, data analysis and interpretation is a crucial step in any scientific research.

In this study, Quasi-experimental research design was used in which pre-test and post-test were conducted on the students of standard IX on both experimental and control groups. With a view to studying whether there is any significant difference in mean achievement scores of the students of experimental and control groups or not, the appropriate non-parametric technique was used for the analysis of the data. Also, for the analysis of reactions of the students Intensity Index technique was used. The objective wise analysis with reference to the related hypotheses has been described under the present chapter.

#### **4.1 ANALYSIS OF THE TEACHERS' INTERVIEW**

To achieve the Objective – 1: “To identify the major learning difficulties in English grammar for the students of Std. IX as perceived by the teachers”, the investigator conducted Semi Structured interview schedule for the teachers. The intention of the said interview schedule was to identify the difficulties in English grammar for the students of Std. IX, as perceived by the teachers.

As mentioned in the Semi Structured interview schedule (See Appendix – III), there were total nine questions. The Semi structured interview schedule consisting of nine questions was conducted on 15 school teachers. The question wise analysis of the teachers' responses has been done with the help of frequency and percentage. The question wise analysis has been described with the help of a table and its related graphical presentation.

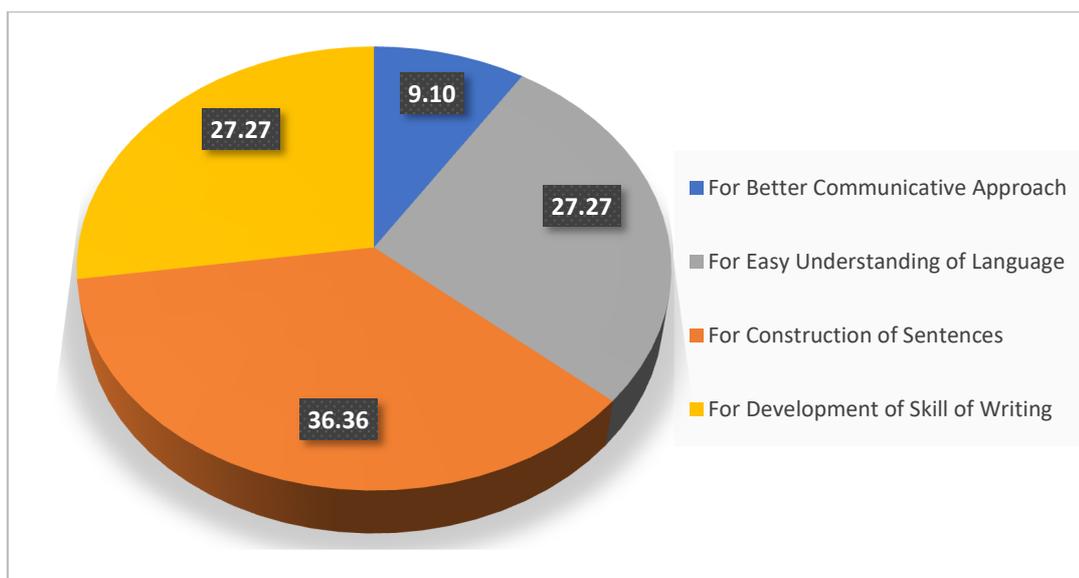
Table 4.1

## Interview Analysis for the Question – 1

Question – 1 : What is the importance of English Grammar?		
Reponses	Frequency	Percentage
For Better Communicative Approach	5	9.10
For Easy Understanding of Language	5	27.27
For Construction of Sentences	4	36.36
For Development of Skill of Writing	3	27.27
Total		100

Graph 4.1

## Graphical Presentation of Interview Analysis for the Question – 1



Graph 4.1 shows the importance of English grammar as responded by the teachers. When teachers were asked about the importance of grammar in teaching of English language, 36.36 per cent of respondents and 27.27 per cent of respondents had responded the importance of English for construction of sentence and development of the skill of writing respectively. 9.10 per cent of the respondents and 27.27 per cent of the respondents said that grammar is most important for better communicative approach and for easy understanding of English language.

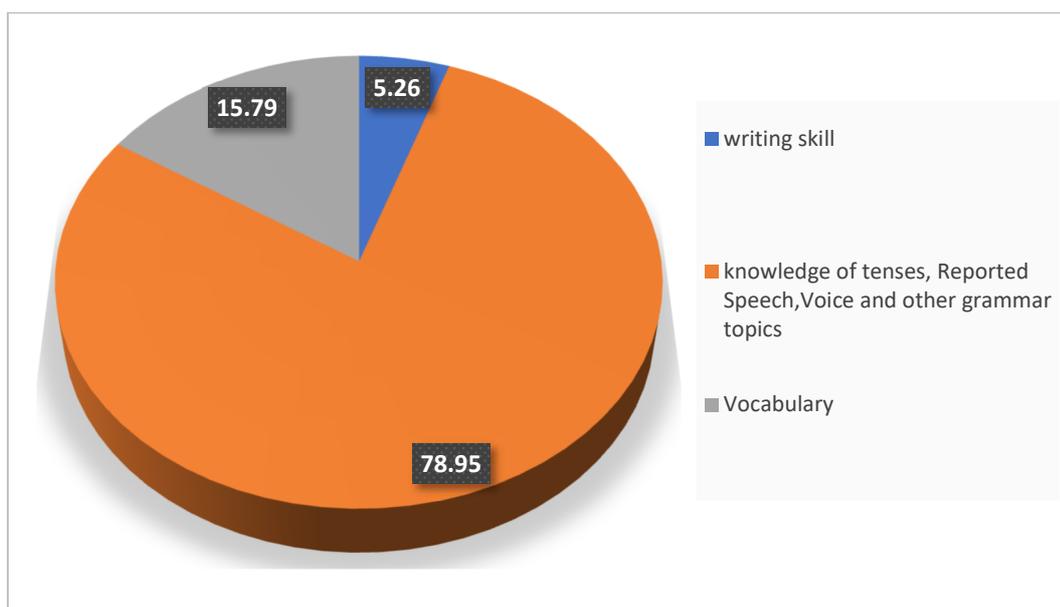
Table 4.2

## Interview Analysis for the Question – 2

<b>Question – 2 : What are the important teaching points of English Grammar in Std. 9?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Developing Writing Skill	1	5.26
Knowledge of Tenses, Reported Speech, Voice and Other Grammar Topics	15	78.95
Vocabulary	3	15.79
Total		100

Graph 4.2

## Graphical Presentation of Interview Analysis for the Question – 2

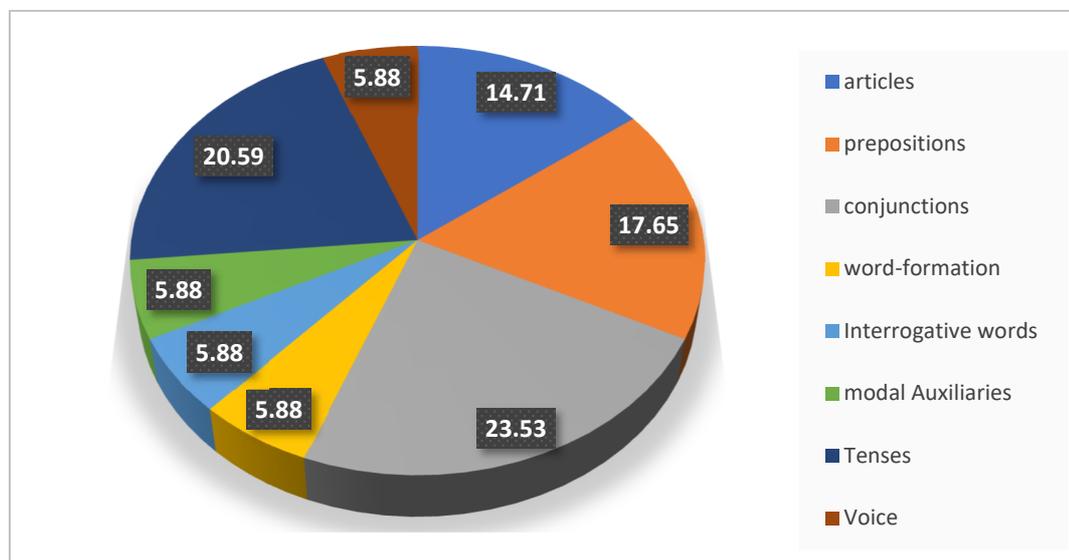


Graph 4.2 shows the important aspects of English grammar for Standard-9 students. When teachers were asked about the important aspects of grammar, 78.95 per cent of the respondents said that Knowledge of Tenses, Reported Speech, Voice and Other Grammar Topics are most important for better communicative approach and for easy understanding of English language. 15.79 per cent of respondents mentioned vocabulary as an important aspect, while 5.26 per cent of respondents mentioned the writing skill as an important aspect of English grammar.

**Table 4.3**  
**Interview Analysis for the Question – 3**

<b>Question – 3 : Which topics of English Grammar in Std. IX have been taught since Std. 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup>?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Articles	5	14.71
Prepositions	6	17.65
Conjunctions	8	23.53
Word-Formation	2	5.88
Interrogative Words	2	5.88
Modal Auxiliaries	2	5.88
Tenses	7	20.59
Voice	2	5.88
Total		100

**Graph 4.3**  
**Graphical Presentation of Interview Analysis for the Question – 3**

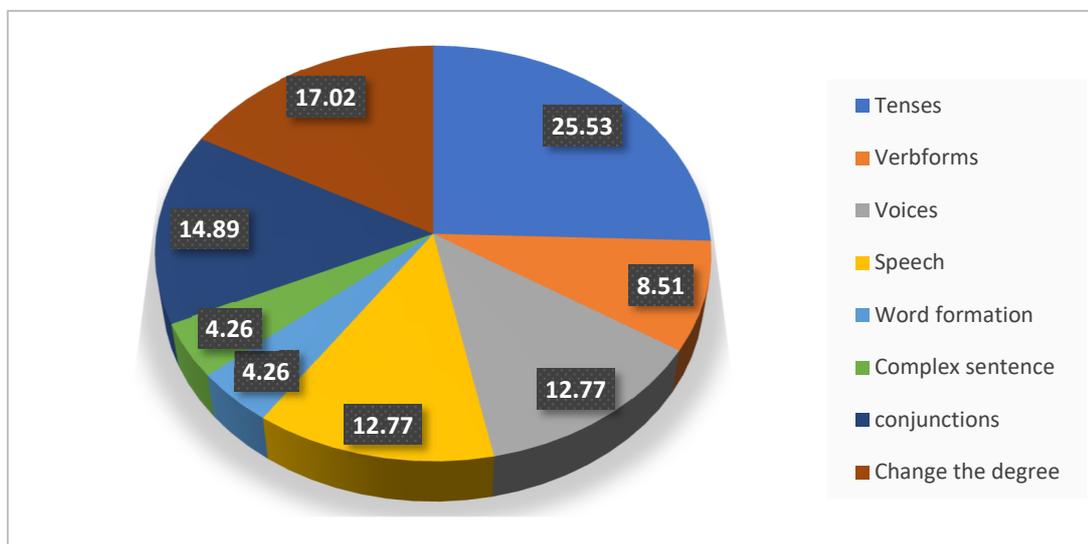


Graph 4.3 shows the list of the topics of English grammar in Standard IX, which have been taught since Standard 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup>. The different teachers had mentioned different topics like Articles, Prepositions, Conjunctions, Word-Formation, Interrogative Words, Modal Auxiliaries, Tenses and Voice. It shows the ‘continuity’, as an important characteristic of English subject which is reflected in the teaching of English grammar.

**Table 4.4**  
**Interview Analysis for the Question – 4**

<b>Question – 4 : Which important topics of English grammar in Std. IX are useful for upcoming standards?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Tenses	12	25.53
Verb forms	4	8.51
Voices	6	12.77
Speech	6	12.77
Word Formation	2	4.26
Complex Sentence	2	4.26
Conjunctions	7	14.89
Change the Degree	8	17.02
<b>Total</b>		<b>100</b>

**Graph 4.4**  
**Graphical Presentation of Interview Analysis for the Question – 4**

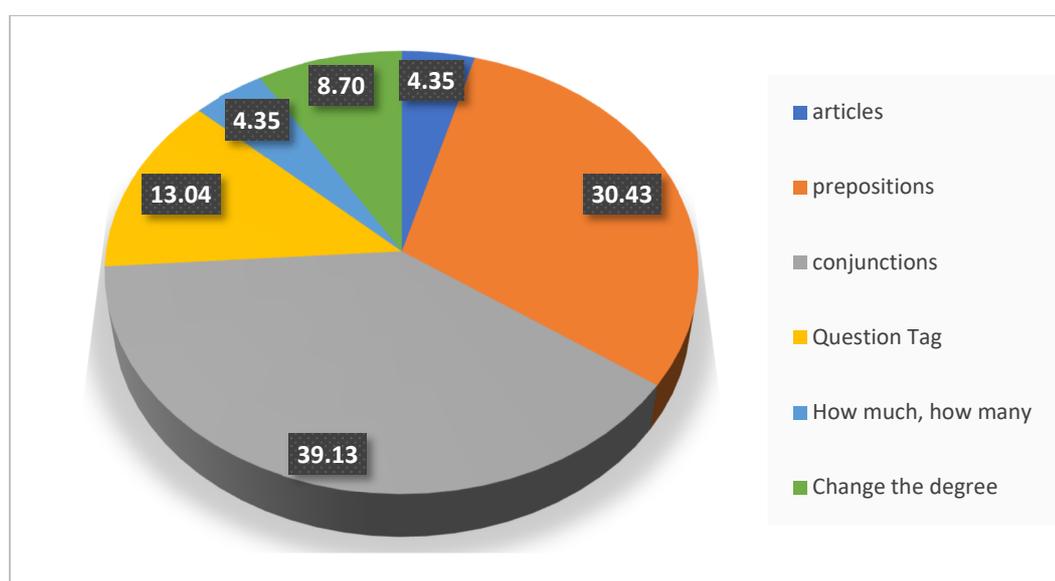


Graph 4.4 shows the important topics of English grammar in standard IX, which are useful in upcoming standards. It can be revealed that the topics like Tenses, Verb Forms, Voices, Speech, Word Formation, Complex Sentences, Conjunctions and Change the Degree have reflected their developmental mobility as perceived by the teachers. As per their opinion, the knowledge of above topics is essential for upcoming standards.

**Table 4.5**  
**Interview Analysis for the Question – 5**

<b>Question – 5 : Which topics of English grammar students can learn easily in Std. IX?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Articles	1	4.35
Prepositions	7	30.43
Conjunctions	9	39.13
Question Tag	3	13.04
How Much, How Many	1	4.35
Change the Degree	2	8.70
<b>Total</b>		<b>100</b>

**Graph 4.5**  
**Graphical Presentation of Interview Analysis for the Question – 5**

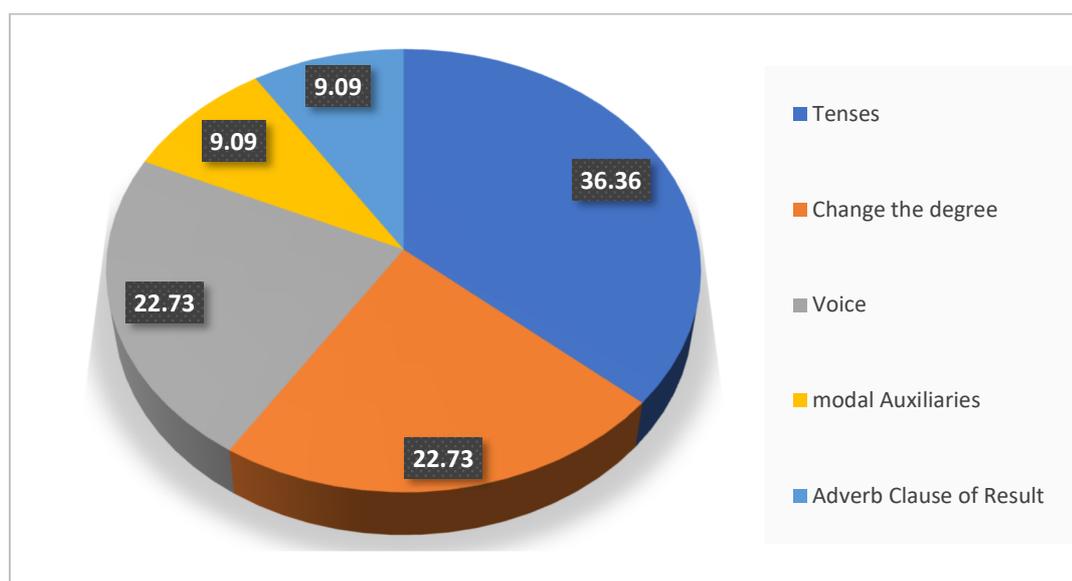


Graph 4.5 shows the topics which can be learnt easily by the students in English grammar. The group of teachers mentioned that the topics like Articles, Prepositions, Conjunctions, Question Tag, How much, How many and Change the Degree can be learnt easily by the students in Standard IX. But at the same time, they added that students might commit errors in such topics of English grammar very frequently.

**Table 4.6**  
**Interview Analysis for the Question – 6**

<b>Question – 6 : Which topics of English Grammar are difficult to learn by the students? Why?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Tenses	8	36.36
Change the degree	5	22.73
Voice	5	22.73
Modal Auxiliaries	2	9.09
Adverb Clause of Result	2	9.09
Total		100

**Graph 4.6**  
**Graphical Presentation of Interview Analysis for the Question – 6**

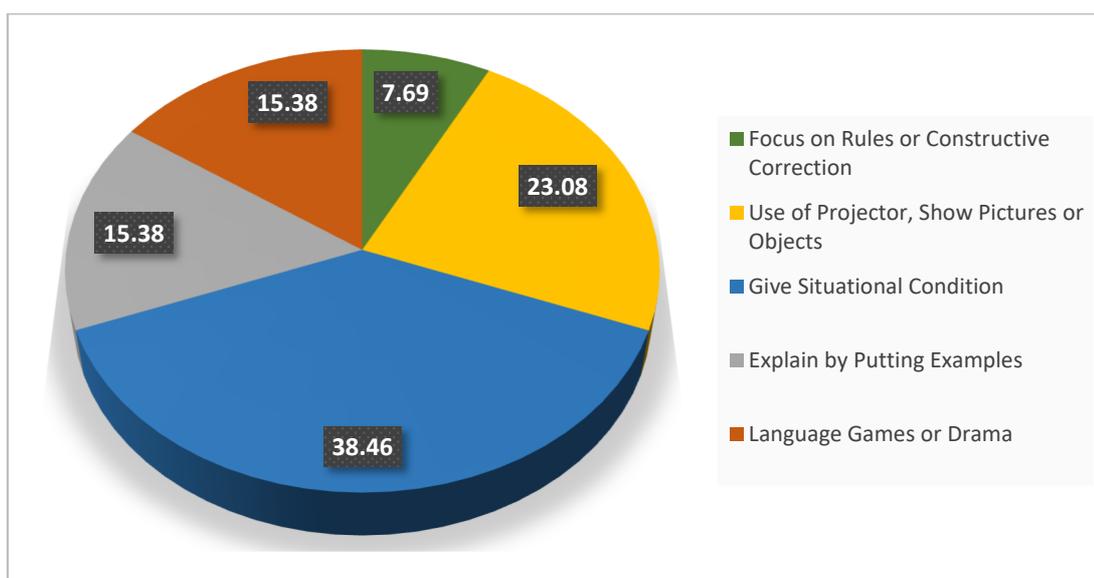


Graph 4.6 shows the list of topics which are difficult to learn by the students. Out of 15 teachers, 8 teachers (36.36%) believed that Tenses are difficult to learn by the students. Out of 15 teachers, 5 teachers (22.73%) believed that Change the degree and Voice are difficult to learn by the students. At the same time, 2 teachers (9.09%) believed that Modal Auxiliaries and Adverb Clause of Result are also difficult to learn by the students.

**Table 4.7**  
**Interview Analysis for the Question – 7**

<b>Question – 7 : Which methods and approaches do you use to make teaching of English grammar interesting? What is its result?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Focus on Rules or Constructive Correction	1	7.69
Use of Projector, Show Pictures or Objects	3	23.08
Give Situational Condition	6	38.46
Explain by Putting Examples	4	15.38
Language Games or Drama	2	15.38
<b>Total</b>		<b>100</b>

**Graph 4.7**  
**Graphical Presentation of Interview Analysis for the Question – 7**

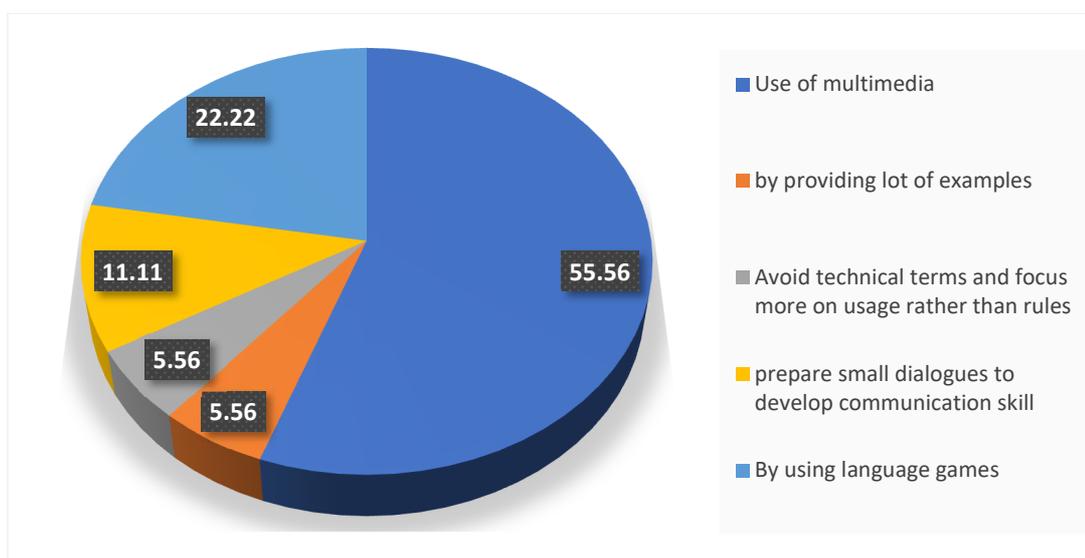


Graph 4.7 shows various methods and approaches used by the teacher to make the teaching of English grammar interesting. According to their opinion, they focus on rules, use the projector, show pictures or objects, give the situational condition, explain by putting examples and use language games or drama to make the teaching of English grammar interesting. They found such methods and approaches more effective in the teaching of English grammar.

**Table 4.8**  
**Interview Analysis for the Question – 8**

<b>Question – 8 : Which new innovative approaches can be adopted to make easy the difficult teaching points of English Grammar in Std. IX?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Use of Multimedia	10	55.56
By Providing Lots of Examples	1	5.56
Avoid Technical Terms and Focus More on Usage Rather Than Rules	1	5.56
Prepare Small Dialogues to Develop Communication Skill	2	11.11
By Using Language Games	4	22.22
<b>Total</b>		<b>100</b>

**Graph 4.8**  
**Graphical Presentation of Interview Analysis for the Question – 8**

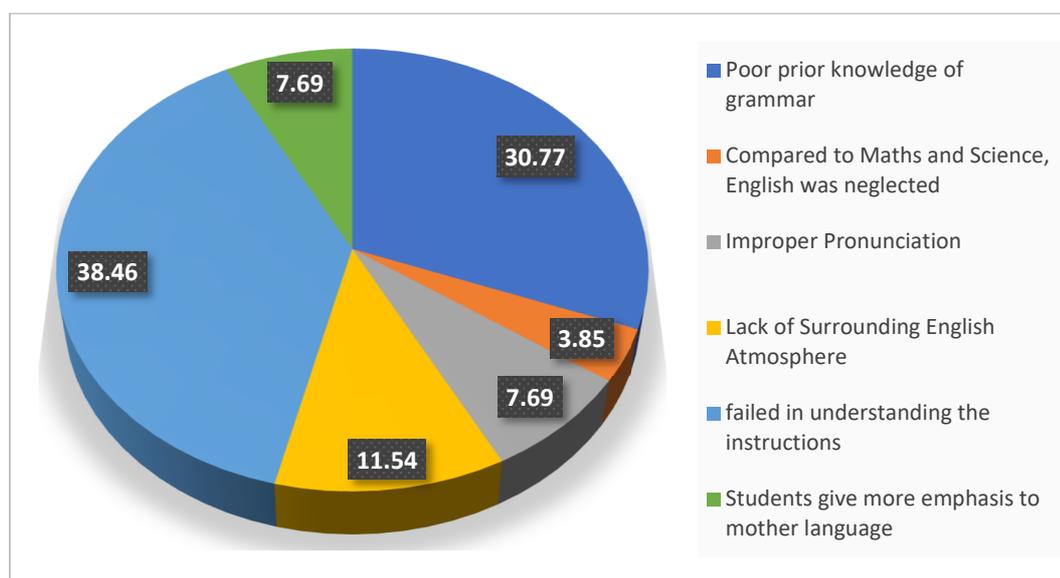


Graph 4.8 shows the innovative approaches suggested by the teachers to make English grammar easier in Standard IX. They suggested the variety of innovative approaches like the use of multimedia, providing lots of examples, focusing more on usage rather than rules, using dialogue method and use of language games for making the English grammar easier in Standard IX. It is remarkable that majority of the teachers (55.56%) opined the use of multimedia as an approach for effective teaching of English grammar.

**Table 4.9**  
**Interview Analysis for the Question – 9**

<b>Question – 9 : What are the challenges do you face generally while teaching English grammar?</b>		
<b>Reponses</b>	<b>Frequency</b>	<b>Percentage</b>
Poor prior knowledge of grammar	8	30.77
Negligence of English compared to other subjects	1	3.85
Improper pronunciation	2	7.69
Lack of surrounding English atmosphere	3	11.54
Failed in understanding the instructions	10	38.46
Giving more emphasis to mother tongue	2	7.69
<b>Total</b>		<b>100</b>

**Graph 4.9**  
**Graphical Presentation of Interview Analysis for the Question – 9**



Graph 4.9 indicates the challenges faced by the teachers while teaching English grammar. According to the respondents, they have to face major challenges like poor prior knowledge of grammar, negligence of English compared to other subjects, improper pronunciation, lack of surrounding English atmosphere, failed in understanding the instructions and giving more emphasis to mother tongue.

## 4.2 ANALYSIS OF STUDENTS' ACHIEVEMENT IN ENGLISH GRAMMAR

The analysis of students' achievement score was done mainly to achieve the Objective – 3: “To study the effectiveness of the Computer Assisted Instruction (CAI) in terms of achievement of Std. IX students in English Grammar.” To achieve this objective three hypothesis were tested, which are mentioned as below:

**H<sub>01</sub>:** There will be no significant difference in the Mean achievement score of the experimental group in pre-test and post-test.

**H<sub>02</sub>:** There will be no significant difference in the Mean achievement score of the control group in pre-test and post-test.

**H<sub>03</sub>:** There will be no significant difference in the Mean achievement score of the experimental group and control group in post-test.

While testing the above hypothesis, quantitative data analysis was done with the help of non-parametric techniques. For this purpose, the appropriate Wilcoxon signed-rank test and Mann-Whitney U test were used.

According to Parekh and Trivedi (2010), the Wilcoxon signed-rank test is designated to test the significance of the difference in the mean achievement score of the single group (either experimental or control group) in pre-test and post-test. It may be considered a useful alternative to the t-test when the parametric assumptions cannot be met and when the observations are expressed in at least ordinal scale values.

### 4.2.1 Analysis Related to H<sub>01</sub>

The Wilcoxon signed rank test was used to test the significance of the difference in the mean achievement score of pre-test and post-test for the experimental group under the H<sub>01</sub>. The z critical value under the same has been calculated and mentioned in the table 4.10.

**Table 4.10**  
**Wilcoxon Signed Rank Test for the testing of H<sub>01</sub>**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Z</b>	<b>Sig. (2-tailed)</b>
Experimental_ Pre-test	66	26.67	6.4	7.06	0.01
Experimental_ Post-test	66	37.23	8.44		

It can be revealed from the table 4.10 that, there was the significant difference in the Mean achievement score of the experimental group in pre-test and post-test. The calculated z value found significant at 0.01 level. Hence, it can be interpreted that the implemented CAI made a significant effect on the learning of English grammar in case of the experimental group.

#### **4.2.2 Analysis Related to H<sub>02</sub>**

The Wilcoxon signed rank test was used to test the significance of the difference in the mean achievement score of pre-test and post-test for the control group under the H<sub>02</sub>. The z critical value under the same has been calculated and mentioned in the table 4.11.

**Table 4.11**  
**Wilcoxon Signed Rank Test for the testing of H<sub>02</sub>**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Z</b>	<b>Sig. (2-tailed)</b>
Control _Pre-test	58	29.03	8.5	0.19	0.84
Control_ Post-test	58	28.83	8.03		

It can be revealed from the table 4.11 that, there was no significant difference in the Mean achievement score of the control group in pre-test and post-test. The calculated z value was not significant at 0.01 level.

Further, the rank table within the group differences of data has been mentioned in the table 4.12.

**Table 4.12****Rank Table within the group differences**

		<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>
<b>Control Group</b>	<b>Negative Ranks</b>	25	33.24	831.00
	<b>Positive Ranks</b>	33	26.67	880.00
	<b>Ties</b>	0		
	<b>Total</b>	58		
<b>Experimental Group</b>	<b>Negative Ranks</b>	0	0.00	0.00
	<b>Positive Ranks</b>	66	33.50	2211.00
	<b>Ties</b>	0		
	<b>Total</b>	66		

Table 4.12 shows the comparison of achievement score of pre-test and post-test for both experimental and control groups. In control group, 33 students showed higher achievement scores and 25 students showed lower achievement scores after the traditional way of teaching. No student showed any significant difference in his/her achievement score. In the experimental group, 66 students showed higher achievement scores after implementation of CAI and no student showed any change in his/her achievement score.

### **4.2.3 Analysis Related to H<sub>03</sub>**

According to Best and Kahn (2014), the Mann Whitney U test is designated to test the significance of the difference between two sets of samples drawn from the same population. It is a nonparametric equivalent of the parametric t-test. It may be considered a useful alternative to the t-test when the parametric assumptions cannot be met and when the observations are expressed in at least ordinal scale values. Under this when the size of either of the groups is more than 20, the sampling distribution of U rapidly approaches the normal distribution, and the null hypothesis may be tested with the reference to the z critical values of the normal probability table.

The Mann-Whitney U test was used to test the significance of the difference in the mean achievement score of the experimental group and control group in post-test. The z critical value under the same has been calculated and mentioned in the table 4.13.

**Table 4.13**  
**Mann Whitney U test to test the significance of the difference**

<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Z</b>	<b>Sig.</b>
Control Group	58	28.83	8.035	4.85	0.01
Experimental Group	66	37.23	8.443		

It can be seen from the table 4.13 that, there is the significant difference between the Mean achievement score of the experimental group and control group in post-test. The calculated z value found significant at 0.01 level. Hence, it can be interpreted that the implemented CAI made a significant effect on the learning of English grammar in case of the experimental group. It means that teaching of English grammar with the help of CAI was found significantly effective compared to the traditional way of teaching.

### **4.3 ANALYSIS OF STUDENTS' REACTIONS**

The analysis of students' reactions was done mainly to achieve the Objective - 4: "To study the reactions of the students about the developed Computer Assisted Instruction (CAI) in English grammar". For this purpose, the investigator has administered a reaction scale with a view to achieving the reactions of the students regarding the effectiveness of CAI package.

The reaction scale was included 28 statements. Hence, the analysis of the students' reactions with respect to each and every statement was done with the help of Percentage and Intensity Index (II). To study the effectiveness of the implemented CAI Programme, it was necessary to know students' reactions on the individual statement of the reaction scale. Their reactions may be either clearly favourable or clearly unfavourable with respect to each statement. Hence, the hypothesis tested for each statement was 'equal probability hypothesis i.e. whether the reactions given in five categories differ significantly or not'. For this, the distribution of students' reactions has been computed to be expected on the equality or null hypothesis. To test the null hypothesis, "There will be no significant difference in favourable and unfavourable reactions of the students of the experimental group regarding the implemented CAI",

the data were collected from the sample of the experimental group which was taught English grammar through the CAI package. Data were collected through a Likert type five-point reaction scale. Collected data were analysed using percentage and Intensity Index (II), which is given in the table 4.14.

**Table 4.14**

**Students' reactions analysis with the help of Percentage and Intensity Index (II)**

Sr. No.	Statements	Percentage					Intensity Indices
		SA	A	U	D	SD	
1	Teaching points in each picture slide was logically sequenced.	89.4	10.6	0	0	0	4.89
2	Objectives framed in CAI package for each topic were appropriate.	72.7	22.7	1.5	3	0	4.65
3	Material provided in the package helped me a lot for self- study.	74.2	22.7	3	0	0	4.71
4	CAI package helped me in proper understanding of English grammar.	66.7	33.3	0	0	0	4.67
5	Combination of animation, text & sound made the learning interesting through CAI.	87.9	3	9.1	0	0	4.79
6	CAI package didn't help me in learning of proper voice modulation.	3	16.7	12.7	35.8	31.8	2.64
7	CAI package helped in learning of proper speed of delivery of conversation.	33.3	44.2	4.5	7.2	10.6	3.39

8	Language used in CAI package was not found easy.	4.5	12.7	21.2	30.3	31.2	2.92
9	I could use CAI package independently for self-learning.	59.1	21.2	1.5	4.5	13.6	4.08
10	Learning through CAI package was a joyful experience.	56.1	16.7	4.5	7.6	15.2	3.91
11	CAI package was easy to use and understand.	71.2	24.2	4.5	0	0	4.67
12	The instructions used in CAI package were clear.	78.8	18.2	0	3	0	4.76
13	CAI package is helpful to learn grammar.	97	1.5	0	1.5	0	4.94
14	CAI package helped me to improve the achievement of lower grammar.	50	33.3	0	10.6	6.1	4.11
15	I am willing to continue learning English grammar through CAI package.	69.7	22.7	6.1	1.5	0	4.61
16	Illustrations given in CAI are enough to understand the concept clearly.	72.7	19.7	3	1.5	3	4.58
17	In CAI package I can't learn with my own speed.	3	4.5	3	47	42.4	1.79
18	Background music in the presentation of CAI was found a disturbance in learning.	6.1	10.6	15.2	30.3	37.9	3.12

19	I could immediately test/evaluate my understanding while using CAI package.	54.5	13.6	19.7	3	9.1	4.02
20	Animations used in CAI package found distracting in understanding the concepts.	3	11.2	16.7	35.8	33.3	2.92
21	CAI took more time to understand the concept than the traditional classroom teaching.	7.6	4.5	3	12.1	72.7	1.76
22	Learning through CAI package was found a waste of time.	4.5	6.1	7.6	34.8	47	2.77
23	Topics used in CAI were not introduced properly.	4.5	6.1	3	53	33.3	3.41
24	Instructions given in each slide of CAI package found easy and clear to follow.	57.6	27.3	0	3	12.1	4.18
25	Scores obtained at the end of each exercise has given me feedback about my learning.	68.2	18.2	6.1	7.6	0	4.47
26	The solutions provided under each 'practice' in CAI found not easy to understand.	6.1	9.7	18.2	32.7	33.3	2.42
27	The exercises given for each topic under CAI package is adequate and useful.	74.2	18.2	7.6	0	0	4.67
28	Learning through CAI package means having more freedom to learn.	69.7	15.2	7.6	0	7.6	4.39
<b>Over all reactions</b>							<b>3.87</b>

In terms of the reactions of the students towards the Statement 1 i.e. “Teaching points in each picture slide was logically sequenced.”, it can be seen that the higher percentages of students’ reactions (i.e. 89.4 and 10.6) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.89 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, “Teaching points in each picture slide was logically sequenced.”

For the statement 2 i.e. “Objectives framed in CAI package for each topic were appropriate.”, it can be seen that the higher percentages of students’ reactions (i.e. 72.7 and 22.7) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.65 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, objectives framed in CAI package for each topic were appropriate.

In terms of the reactions of the students towards the Statement 3 i.e. “Material provided in the package helped me a lot for self- study”, it can be seen that the higher percentages of students’ reactions (i.e. 74.2 and 22.7) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.71 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, material provided in the package helped them a lot for self- study.

For the statement 4 i.e. “CAI package helped me in proper understanding of English grammar”, it can be seen that the higher percentages of students’ reactions (i.e. 66.7 and 33.3) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.67 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, CAI package helped them in the proper understanding of English grammar.

In terms of the reactions of the students towards the Statement 5 i.e. “Combination of animation, text & sound made the learning interesting through CAI”, it can be seen that the higher percentages of students’ reactions (i.e. 87.9 and 3) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.79 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, the combination of animation, text & sound made the learning interesting through CAI.

In case of the Statement 6 i.e. “CAI package didn’t help me in learning of proper voice modulation”, it can be seen that the higher percentages of students’ reactions (i.e. 35.8 and 31.8) were showing their disagreement towards the statement. The calculated value of the Intensity Index 2.64 indicated their unfavourable reactions towards the given statement. It means according to the students’ reactions; CAI package didn’t help me in learning of proper voice modulation.

In terms of the reactions of the students towards the Statement 7 i.e. “CAI package helped in learning of proper speed of delivery of conversation”, it can be seen that the higher percentages of students’ reactions (i.e. 33.3 and 44.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 3.39 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, CAI package helped them in learning of proper speed of delivery of conversation.

In case of the Statement 8 i.e. “Language used in CAI package was not found easy”, it can be seen that the higher percentages of students’ reactions (i.e. 30.3 and 31.2) were showing their disagreement towards the statement. The calculated value of the Intensity Index 2.92 indicated their unfavourable reactions towards the given statement. It means according to the students’ reactions, language used in CAI package was found easy in understanding.

In terms of the reactions of the students towards the Statement 9 i.e. “I could use CAI package independently for self-learning”, it can be seen that the higher percentages of students’ reactions (i.e. 59.1 and 21.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.08 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, they could use CAI package independently for their self-learning.

In terms of the reactions of the students towards the Statement 10 i.e. “Learning through CAI package was a joyful experience”, it can be seen that the higher percentages of students’ reactions (i.e. 56.1 and 16.7) were showing their agreement towards the statement. The calculated value of the Intensity Index 3.91 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, learning through CAI package was a joyful experience for them.

In terms of the reactions of the students towards the Statement 11 i.e. “CAI package was easy to use and understand”, it can be seen that the higher percentages of students’ reactions (i.e. 71.2 and 24.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.67 indicated their favourable reactions towards the given statement. It means according to the students’ reactions; CAI package was found them easy to use and understand.

In terms of the reactions of the students towards the Statement 12 i.e. “The instructions used in CAI package were clear”, it can be seen that the higher percentages of students’ reactions (i.e. 78.8 and 18.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.76 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, the instructions used in CAI package were found them very clear.

In terms of the reactions of the students towards the Statement 13 i.e. “CAI package is helpful to learn grammar”, it can be seen that the higher percentages of students’ reactions (i.e. 97 and 1.5) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.94 indicated their favourable reactions towards the given statement. It means according to the students’ reactions; CAI package was found them helpful in learning grammar.

In terms of the reactions of the students towards the Statement 14 i.e. “CAI package helped me to improve the achievement of lower grammar”, it can be seen that the higher percentages of students’ reactions (i.e. 50 and 33.3) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.11 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, CAI package helped them in improving the achievement of lower grammar.

In terms of the reactions of the students towards the Statement 15 i.e. “I am willing to continue learning English grammar through CAI package”, it can be seen that the higher percentages of students’ reactions (i.e. 69.7 and 22.7) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.61 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, they had shown their willingness to continue learning English grammar through CAI package.

In terms of the reactions of the students towards the Statement 16 i.e. “Illustrations given in CAI are enough to understand the concept clearly”, it can be seen that the higher percentages of students’ reactions (i.e. 72.7 and 19.7) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.58 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, illustrations given in CAI were enough to understand the concept clearly.

In case of the Statement 17 i.e. “In CAI package I can’t learn with my own speed”, it can be seen that the higher percentages of students’ reactions (i.e. 47 and 42.4) were showing their disagreement towards the statement. The calculated value of the Intensity Index 1.79 indicated their unfavourable reactions towards the given statement. It means according to the students’ reactions, they can learn with their own speed with the help of CAI package.

In terms of the reactions of the students towards the Statement 18 i.e. “Background music in the presentation of CAI was found a disturbance in learning”, it can be seen that the higher percentages of students’ reactions (i.e. 30.3 and 37.9) were showing their disagreement towards the statement. The calculated value of the Intensity Index 3.12 indicated their unfavourable reactions towards the given statement. It means according to the students’ reactions, background music in the presentation of CAI was not found disturbance in learning through CAI.

In terms of the reactions of the students towards the Statement 19 i.e. “I could immediately test/evaluate my understanding while using CAI package”, it can be seen that the higher percentages of students’ reactions (i.e. 54.5 and 13.6) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.02 indicated their favourable reactions towards the given statement. It means according to the students’ reactions, they could immediately test/evaluate their understanding while using CAI package.

In terms of the reactions of the students towards the Statement 20 i.e. “Animations used in CAI package found distracting in understanding the concepts”, it can be seen that the higher percentages of students’ reactions (i.e. 35.8 and 33.3) were showing their disagreement towards the statement. The calculated value of the Intensity Index 2.92 indicated their unfavourable reactions towards the given statement. It means

according to the students' reactions, animations used in CAI package were not found distracting in understanding the concepts.

In terms of the reactions of the students towards the Statement 21 i.e. "CAI took more time to understand the concept than the traditional classroom teaching", it can be seen that the higher percentages of students' reactions (i.e. 12.1 and 72.7) were showing their disagreement towards the statement. The calculated value of the Intensity Index 1.76 indicated their unfavourable reactions towards the given statement. It means according to the students' reactions, CAI did not take more time to understand the concept with compared to the traditional classroom teaching.

In terms of the reactions of the students towards the Statement 22 i.e. "Learning through CAI package was found a waste of time", it can be seen that the higher percentages of students' reactions (i.e. 34.8 and 47) were showing their disagreement towards the statement. The calculated value of the Intensity Index 2.77 indicated their unfavourable reactions towards the given statement. It means according to the students' reactions, learning through CAI package was not a waste of time.

In terms of the reactions of the students towards the Statement 23 i.e. "Topics used in CAI were not introduced properly", it can be seen that the higher percentages of students' reactions (i.e. 53 and 33.3) were showing their disagreement towards the statement. The calculated value of the Intensity Index 3.41 indicated their unfavourable reactions towards the given statement. It means according to the students' reactions, topics used in CAI were introduced properly.

In terms of the reactions of the students towards the Statement 24 i.e. "Instructions given in each slide of CAI package found easy and clear to follow", it can be seen that the higher percentages of students' reactions (i.e. 57.6 and 27.3) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.18 indicated their favourable reactions towards the given statement. It means according to the students' reactions, instructions given in each slide of CAI package was found easy and clear to follow.

In terms of the reactions of the students towards the Statement 25 i.e. "Scores obtained at the end of each exercise has given me feedback about my learning", it can be seen that the higher percentages of students' reactions (i.e. 68.2 and 18.2) were

showing their agreement towards the statement. The calculated value of the Intensity Index 4.47 indicated their favourable reactions towards the given statement. It means according to the students' reactions, each exercise under the CAI has given them feedback for their learning.

In terms of the reactions of the students towards the Statement 26 i.e. "The solutions provided under each 'practice' in CAI found not easy to understand", it can be seen that the higher percentages of students' reactions (i.e. 32.7 and 33.3) were showing their disagreement towards the statement. The calculated value of the Intensity Index 2.42 indicated their unfavourable reactions towards the given statement. It means according to the students' reactions, the solutions provided under each 'practice' of CAI found easy to understand.

In terms of the reactions of the students towards the Statement 27 i.e. "The exercises given for each topic under CAI package is adequate and useful", it can be seen that the higher percentages of students' reactions (i.e. 74.2 and 18.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.67 indicated their favourable reactions towards the given statement. It means according to the students' reactions, the exercises given for each topic under CAI package was found adequate and useful.

In terms of the reactions of the students towards the Statement 28 i.e. "Learning through CAI package means having more freedom to learn", it can be seen that the higher percentages of students' reactions (i.e. 69.7 and 15.2) were showing their agreement towards the statement. The calculated value of the Intensity Index 4.39 indicated their favourable reactions towards the given statement. It means according to the students' reactions, learning through CAI package means having more freedom to learn.

Here, the interpretations made on the basis of the favourable or unfavourable reactions given by the majority of the students of experimental group. Hence, the overall analysis shows the positive favourable reactions of the students about the effectiveness of CAI. The overall intensity index 3.87 also supports the above interpretation. Thus, it can be said that the students of experimental group found CAI package effective for the learning of English grammar.

#### **4.4 CONCLUSION**

The present chapter deals with the analysis of the data with respect to the nature of data and interpretations made on the basis of the analysis. The analysis done under this chapter helped the investigator in deriving the interpretations. Based on this, the major findings and conclusion have been discussed in the upcoming chapter.