CHAPTER-IV

DATA ANALYSIS & INTERPRETATION

4.1   INTRODUCTION

Analysis refers to a critical review of the collected and grouped data to investigate the characteristics of the problem. The analysis describes and summarizes the information, establishes relationships between variables, compares variables, establishes differences between variables, and finally forecasts the outcome, regardless of whether the data is qualitative or quantitative. The term "analysis" refers to the computation of measures and the search for patterns in data groups' relationships. Data analysis is the process of giving a vast amount of data order, structure, and meaning before interpreting it to make sense of it. The main goal of data analysis is to collect valuable and accessible data. Statistical methods play an essential role in data collection, organization, analysis, and interpretation. The investigator interprets the findings after the data has been analyzed.

It is the penultimate stage of data treatment and requires a thorough, rational, and critical review of the findings acquired following the analysis, taking into account the sample's constraints and the tools chosen and employed in the study. After the data has been collected, it must be processed and analyzed following the outline established to develop the research plan. The scientific study must ensure that we have all relevant data for the comparisons and analyses. Editing, coding, classification, and tabulation of collected data are all part of the analysis. The current research was experimental.

For secondary school students, a programme was created to develop leadership skills. As outlined in Chapter III, the established programme was introduced to one School of standard IX students for one academic session in 2017-18. According to the used pre-test- post-test non-equivalent control group design, two different schools were used as control and experimental groups in this study. Students in standard IX were assessed on three dimensions of seven different leadership skills.

The control and experimental groups were given a post-test to assess the three dimensions: conceptual knowledge of leadership skills, intended leadership

behaviour, and actual leadership behaviour. The collected data was quantitatively and qualitatively analyzed to determine the efficacy of the Student Leadership Programme (SLP). The quantitative analysis used the mean post-test scores, standard deviation, standard error of the mean, Mann Whitney U-test, and Intensity Index. Content analysis was used to examine the qualitative data. The data analysis and interpretation of conceptual knowledge and the intended behaviour of leadership skills are given under caption 4.2.3.1, 4.2.3.2. The experimental group's reaction towards different components of the Student Leadership Programme (SLP) for developing leadership skills was taken with a reaction scale. Analysis and interpretation of data related to reaction scale is given under the caption 4.2.3.4

The effectiveness of the Student Leadership Programme (SLP) was also determined through observations of students' skill-based behaviours during school hours. The observations related to different leadership skills were noted from an experimental group given under caption 4.2.4.3. Most data are presented in tables which are followed by analysis and interpretation. The details about the analysis and interpretation of data are given as follows.

4.2   **DATA ANALYSIS AND INTERPRETATION:**

The analysis of data and interpretation have been done objective-wise. In the present study, the focus of the study is developing leadership skills through the implementation of the Student Leadership Programme (SLP). The objectives are related to the development of the Student Leadership Programme (SLP), implementing this programme, checking the effectiveness of this programme, and collecting the reaction of students on the development of the Student Leadership Programme (SLP) for developing leadership skills.

4.2.1   **Data Analysis Pertaining to Objective 1**

"To develop the Student Leadership Programme (SLP) for development of leadership skills namely time management skill, goal setting skill, communication skill, problem solving skill, empathy skill, team building skill, and conflict management skill."

There were no statistics used for this objective, and has been described in Chapter III

4.2.2.   **Data Analysis Pertaining to Objective 2**

"To implement the Student Leadership Programme (SLP) for development of leadership skills namely time management skill, goal setting skill, communication skill, problem solving skill, empathy skill, team building skill, and conflict management skill."

There were no statistics used for this objective and has been described in Chapter III

4.2.3.   **Data analysis Pertaining to Objective 3**

"To study the effectiveness of the Student Leadership Programme (SLP) for development of leadership skills namely time management skill, goal setting skill, communication skill, problem solving skill, empathy skill, team building skill, and conflict management skill in terms of conceptual knowledge, intended behaviour and actual behaviour in leadership skills."

All the components, i.e., Leadership conceptual knowledge, intended Leadership Behaviour, Actual Leadership Behaviour, are taken separately for analysis.

4.2.3.1   Data Analysis Related to leadership conceptual knowledge

With the help of the leadership conceptual knowledge test prepared by the investigator, the mean post-test scores were calculated. It was calculated by taking the mean post-test scores of leadership conceptual knowledge of the students for both the experimental group and the control group in the taken leadership skills, namely time management skill, goal setting skill, communication skill, problem-Solving skill, empathy skill, team building skill, and conflict management skill. In this segment, the leadership conceptual knowledge analysis of both the groups is taken separately for each leadership skill and all seven leadership skills as a whole. These analyses are presented with tables and interpretations as follows.

TABLE 4.1

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of Time Management Skill

Conceptual knowledge of Time management skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	1.9000	1.12495	0.20539
Experimental group	30	12.1000	1.42272	0.23193

From Table 4.1, it was found that the mean post-test score of students for the conceptual knowledge of time management skill of the control group and the experimental group were 1.9000 and 12.1000, respectively. The standard deviation from the mean post-test score was found to be 1.12495 and 1.42272 for the control group and experimental group, respectively. The standard error of the mean was 0.20539 and 0.25975 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of experimental groups in the conceptual knowledge of time management skill compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the conceptual

knowledge of time management skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.2, which is followed by interpretation.
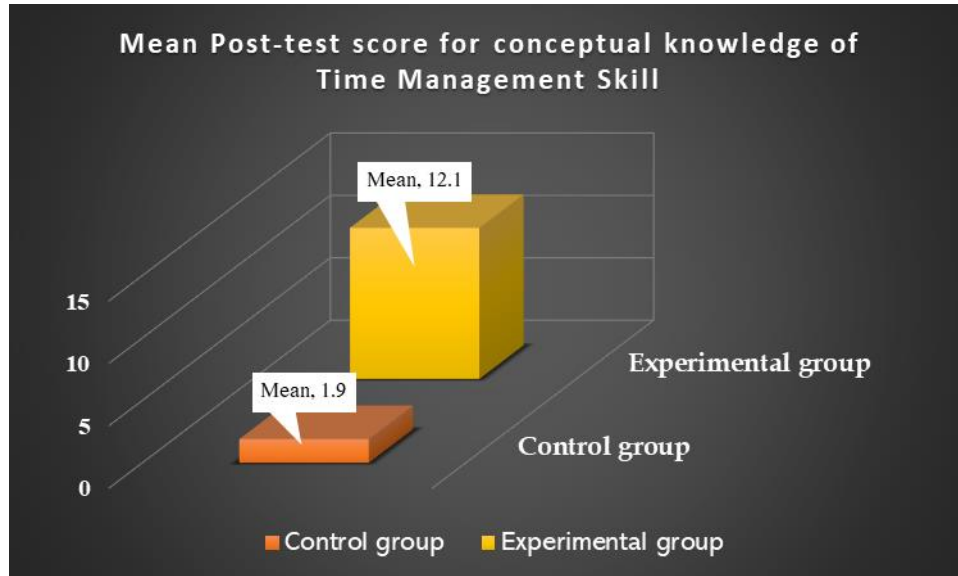

FIGURE 4.1 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Time Management Skill

TABLE 4.2

Summary of Mann-Whitney U-Test for the conceptual knowledge of time management skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z-Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.716	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.2, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of time management skill were 465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.716, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.716, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e.,

"there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of time management skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of time management was evident. From Table 4.1, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP). Hence, it can be concluded that the conceptual knowledge of time management skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.3

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of Goal Setting Skill

Conceptual knowledge of goal setting skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	2.3333	0.66089	0.12066
Experimental group	30	12.2000	1.27035	0.23193

From Table 4.3, it was found that the mean post-test score of students for the conceptual knowledge of goal setting skill of the control group and the experimental group were 12.2000 and 2.3333, respectively. The standard deviation from the mean post-test score was found to be 0.66089 and 1.27035 for the control group and experimental group, respectively. The standard error of the mean was 0.12066 and 0.23193 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in the conceptual knowledge of goal setting skill in comparison to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills.

To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the conceptual knowledge of goal setting skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.4, which is followed by interpretation.
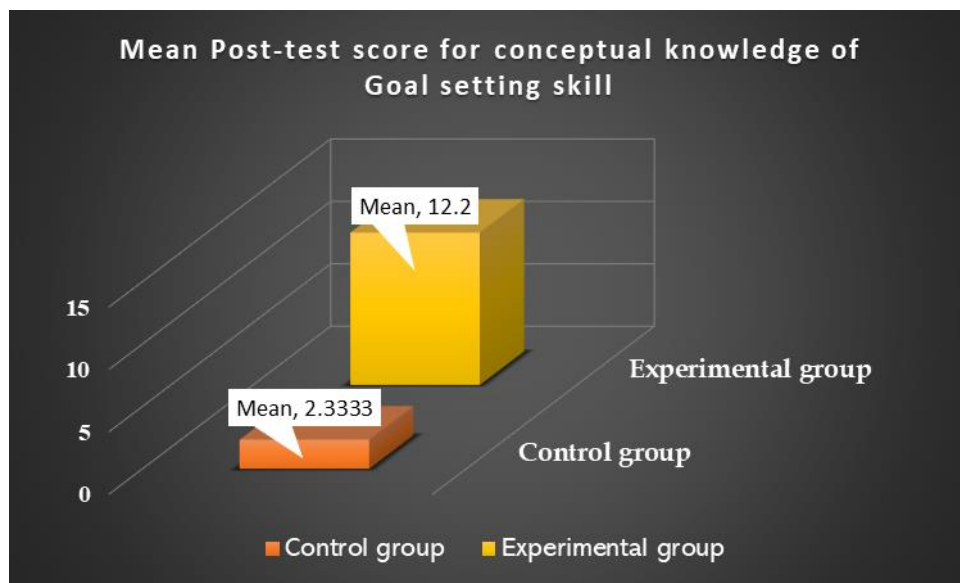

FIGURE 4.2 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Goal setting Skill

TABLE 4.4

Summary of Mann-Whitney U-Test for the conceptual knowledge of goal setting skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.787	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.4, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of goal setting skill were

465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.787, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z<= -6.787, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of goal setting skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of goal setting skill was clear. From Table 4.3, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme that was developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of goal setting skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.5

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of Communication Skill

Conceptual knowledge of communication skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	1.7333	1.17248	0.21406
Experimental group	30	11.2333	1.47819	0.26988

From Table 4.5, it was found that the mean post-test score of students for the conceptual knowledge of the communication skill of the control group and the experimental group were 1.7333 and 11.2333, respectively. The standard deviation from the mean post-test score was found to be 1.17248 and 1.47819 for the control group and experimental group, respectively. The standard error of the mean was 0.21406 and 0.26988 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing

them. From the standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in the conceptual knowledge of communication skill compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of the control and experimental group of standard IX in the conceptual knowledge of communication skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.6, which is followed by interpretation.
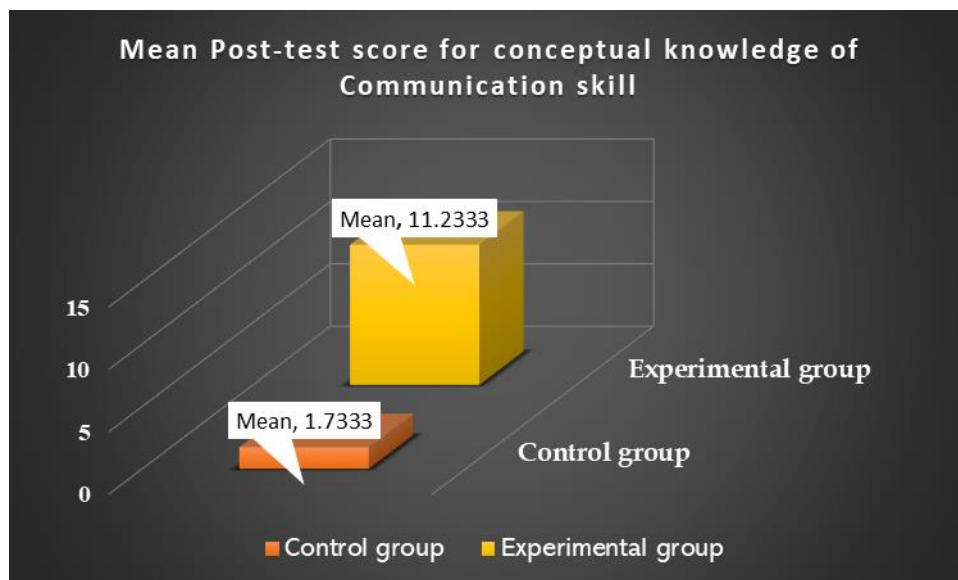

FIGURE 4.3 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Communication Skill

TABLE 4.6

Summary of Mann-Whitney U-Test for the conceptual knowledge of communication skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.77	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.6, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of communication skill were 465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.77, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z<= -6.77, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of the communication skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of communication skill was clear. From Table 4.5, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of communication skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.7

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of Empathy Skill

Conceptual knowledge of empathy skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	1.2333	1.27802	0.23333
Experimental group	30	11.8333	0.98553	0.17993

From Table 4.7, it was found that the mean post-test score of students for the conceptual knowledge of empathy skill of the control group and the experimental group were 1.2333 and 11.8333, respectively. The standard deviation from the mean post-test score was found to be 1.27802 and 0.98553 for the control group and

experimental group, respectively. The standard error of the mean was 0.23333 and 0.17993 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the control group was more heterogeneous than the experimental group. The higher mean post-test score of the experimental group in the conceptual knowledge of empathy skill compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of the control and experimental group of standard IX in the conceptual knowledge of empathy skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.8, which is followed by an interpretation
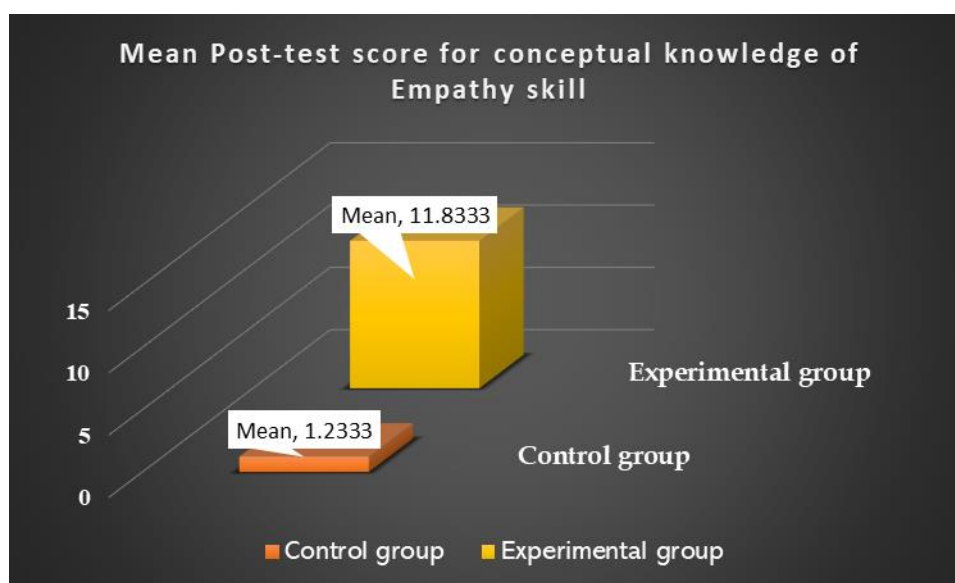

FIGURE 4.4 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Empathy skill

TABLE 4.8

Summary of Mann-Whitney U-Test for the conceptual knowledge of empathy skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	45.50	1365.00	0.000	-6.757	0.000
Experimental Group	30	15.50	465.00			

From Table 4.8, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of empathy skill were 465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.757, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z<= -6.757, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of empathy skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of empathy skill was clear. From Table 4.7, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of the empathy skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through the Student Leadership Programme (SLP).

TABLE 4.9

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Conceptual Knowledge of Problem-Solving Skill

Conceptual knowledge of problem-solving skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	1.8333	1.17688	0.21487
Experimental group	30	12.1000	1.74889	0.31930

From Table 4.9, it was found that the mean post-test score of students for conceptual knowledge of problem-solving skill of the control group and the experimental group were 1.8333 and 12.1000, respectively. The standard deviation from the mean post-test score was found to be 1.17688 and 1.74889 for the control group and experimental group, respectively. The standard error of the mean was 0.21487 and 0.31930 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in conceptual knowledge of problem-solving skill in comparison to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of the control and experimental group of standard IX in the conceptual knowledge of problem-solving skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.10, which is followed by interpretation.
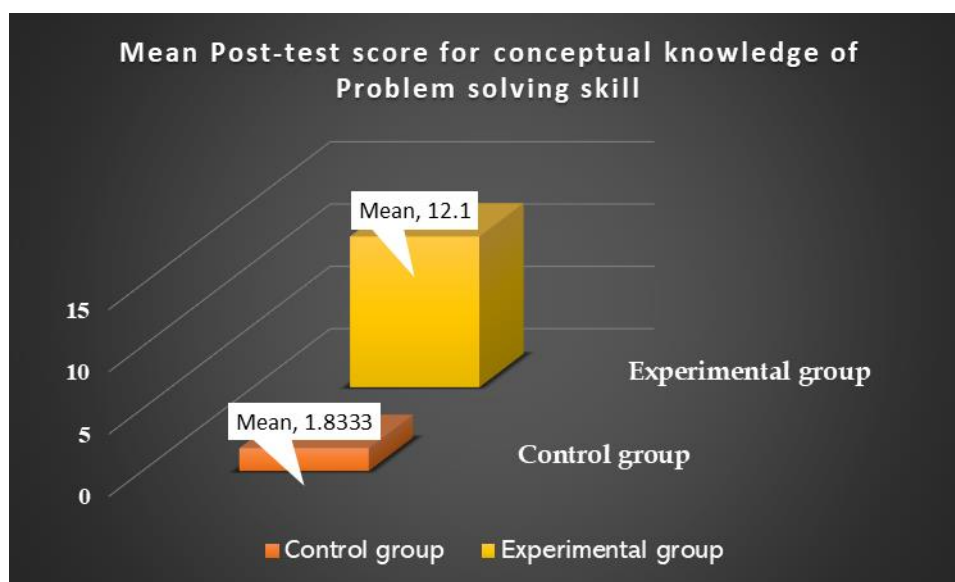

FIGURE 4.5 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Problem-solving skill

TABLE 4.10

Summary of Mann-Whitney U-Test for conceptual knowledge of problem-solving skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.697	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.10, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of problem-solving skill were 465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.697, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.697, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of problem-solving skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of problem-solving skill was evident. From Table 4.9, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of problem-solving skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to leadership skills in students through the Student Leadership Programme (SLP).

TABLE 4.11

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Conceptual Knowledge of Team-Building Skill

Conceptual knowledge of team-building skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	2.5333	1.38298	0.25250
Experimental group	30	12.5333	2.5333	0.30601

From Table 4.11, it was found that the mean post-test score of students for the conceptual knowledge of team-building skill of the control group and the experimental group were 2.5333 and 12.5333, respectively. The standard deviation from the mean post-test score was found to be 1.38298 and 2.5333 for the control and experimental groups. The standard error of the mean was 0.25250 and 0.30601 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in conceptual knowledge of team-building skill compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of the control and experimental group of standard IX in the conceptual knowledge of the team-building skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.12, which is followed by interpretation.

FIGURE 4.6 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Team building skill
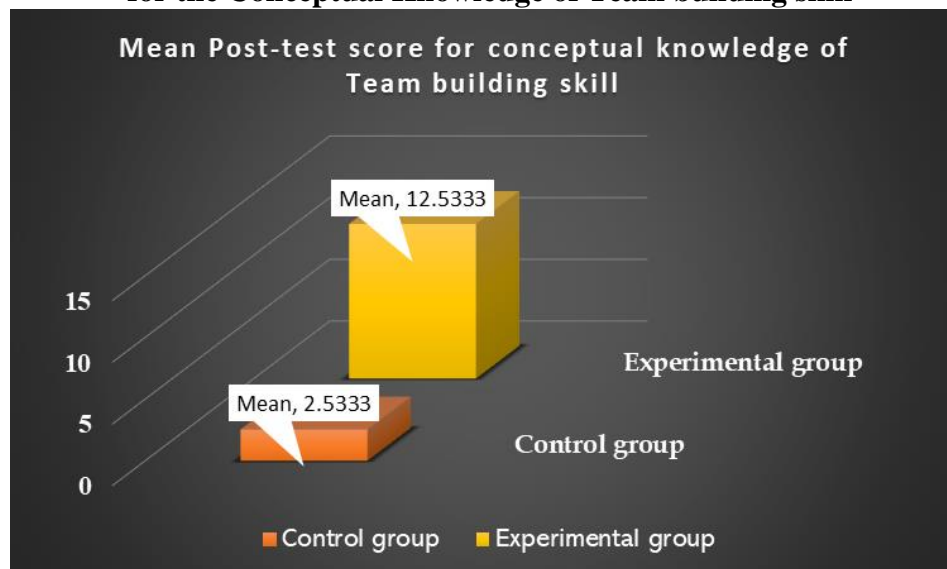
TABLE 4.12

Summary of Mann-Whitney U-Test for the conceptual knowledge of team-building skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.749	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.12, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of team-building skill were 465.00 and 1365.00, respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.749, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.749, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of the team-building skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of team-building skill was evident. From Table 4.11, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of team-building skill of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to leadership skills in students through the Student Leadership Programme (SLP).

TABLE 4.13

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of Conflict Management skill

Conceptual knowledge of conflict management skill	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	2.1667	1.53316	0.27992
Experimental group	30	12.1000	1.60495	0.29302

From Table 4.13, it was found that the mean post-test score of students for the conceptual knowledge of the conflict management skill of the control group and the experimental group were 2.1667 and 12.1000, respectively. The standard deviation from the mean post-test score was found to be 1.53316 and 1.60495 for the control group and experimental group, respectively. The standard error of the mean was 0.27992 and 0.29302 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in the conceptual knowledge of the conflict management skill in comparison to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the conceptual knowledge of the conflict management skill." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.14, which is followed by interpretation.
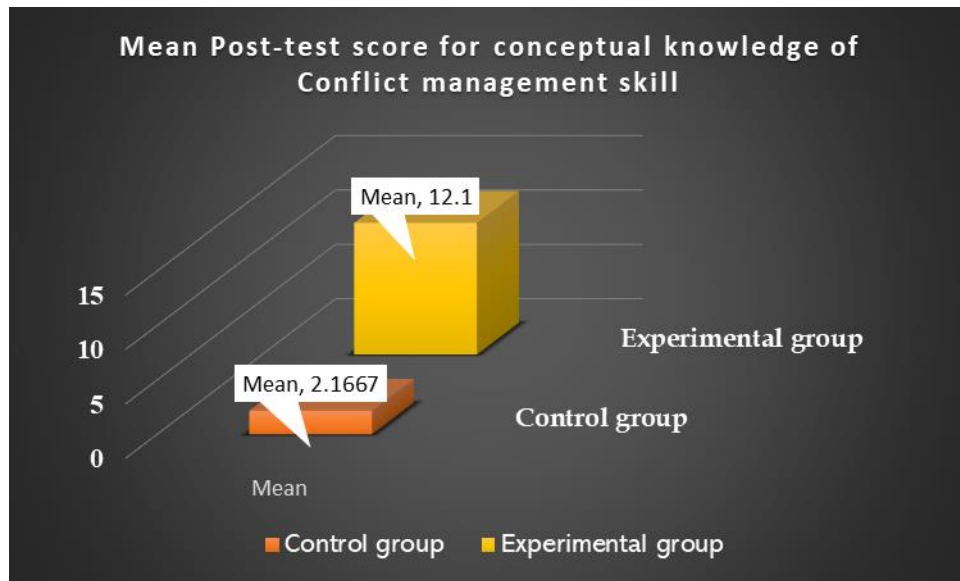
FIGURE 4.7 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of Conflict management skill

TABLE 4.14

Summary of Mann-Whitney U-Test for the conceptual knowledge of conflict management skill for Experimental Group and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.718	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.14, it was found that the sum of ranks of the control group and the experimental group students in the conceptual knowledge of the conflict management skill were 465.00 and 1365.00 respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.718, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.718, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of the conflict management skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual

knowledge of conflict management skill was clear. From Table 4.13, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of the conflict management skill in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.15

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for the Conceptual Knowledge of all the seven skills as a whole

Conceptual knowledge of all the seven skills as a whole	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	13.7333	4.99609	0.91216
Experimental group	30	96.9	9.97	1.82

From Table 4.15, it was found that the mean post-test score of students for the collective conceptual knowledge of all the seven skills as a whole of the control group and the experimental group were 13.7333 and 96.90, respectively. The standard deviation from the mean post-test score for the collective conceptual knowledge of all the seven skills as a whole was 4.99609 and 9.97 for the control group and experimental group, respectively. The standard error of the mean was 0.912 and 1.82 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group in all the seven skills as a whole compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the collective conceptual knowledge of all the seven

skills as a whole." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.16, which is followed by interpretation.
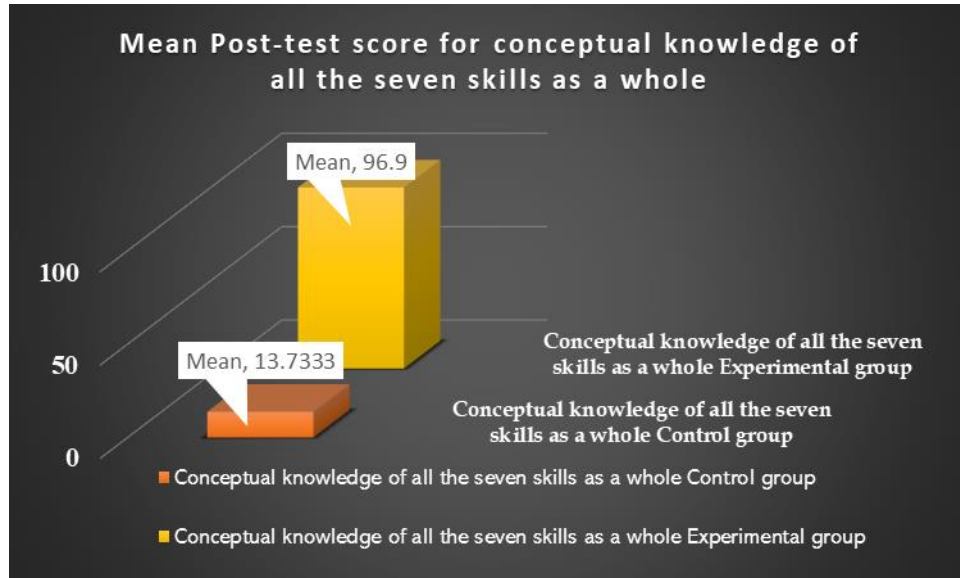

FIGURE 4.8 Mean Post-test score of Control Group and Experimental Group for the Conceptual Knowledge of all the seven skills as a whole

TABLE 4.16

Summary of Mann-Whitney U-Test for conceptual knowledge of all the seven skills as the whole of Experimental and Control Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	15.50	465.00	0.000	-6.669	0.000
Experimental Group	30	45.50	1365.00			

From Table 4.16, it was found that the sum of ranks of the control group and the experimental group students' conceptual knowledge of all the seven skills as a whole were 465.00 and 1365.00 respectively, with thirty students in each group. The u-value and z-value were found to be 0.000 and -6.669, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z $\leq$ -6.669, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence, the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of all the seven skills" a whole," was rejected. Therefore, the control group and the experimental group students differed significantly in their conceptual knowledge of all the seven skills as a whole was clear. From Table 4.15, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence, it can be concluded that conceptual knowledge of all the seven skills as a whole of the experimental group students was stochastically higher than the students in the control group due to the programme developed for students to leadership skills in the Student Leadership Programme (SLP).

4.2.3.2   **Data Analysis Related to intended leadership Behaviour**

With the intended leadership Behaviour Scale prepared by the investigator, the mean post-test scores were calculated. It was calculated by taking the mean post-test scores of intended leadership behaviour of the students for both the experimental group and the control group in the taken leadership skill namely time management skill, goal setting skill, communication skill, problem-Solving skill, empathy skill, team building skill, and conflict management skill. In this segment, the intended leadership Behaviour analysis of both groups is taken for each leadership skill. Furthermore, it also includes all the seven leadership skills as a whole. These analyses are presented with tables and interpretations as follows.

TABLE 4.17

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Time Management

Intended behaviour of the leadership skill of time management	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	24.266	3.72256	0.67964
Experimental group	30	32.9667	3.67173	0.67036

From Table 4.17, it was found that the mean post-test score of students for intended behaviour of the leadership skill of time management of the control group and the experimental group were 24.266 and 32.9667, respectively. The standard deviation from the mean post-test score was found to be 3.72256 and 3.67173 for the control group and experimental group, respectively. The standard error of the mean was 0.67964 and 0.67036 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the control group was more heterogeneous than the experimental group. The higher mean post-test score of the experimental group for intended behaviour of the leadership skill of time management compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the

intended behaviour of the leadership skill of time management." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.18, which is followed by interpretation.

FIGURE 4.9 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of time management
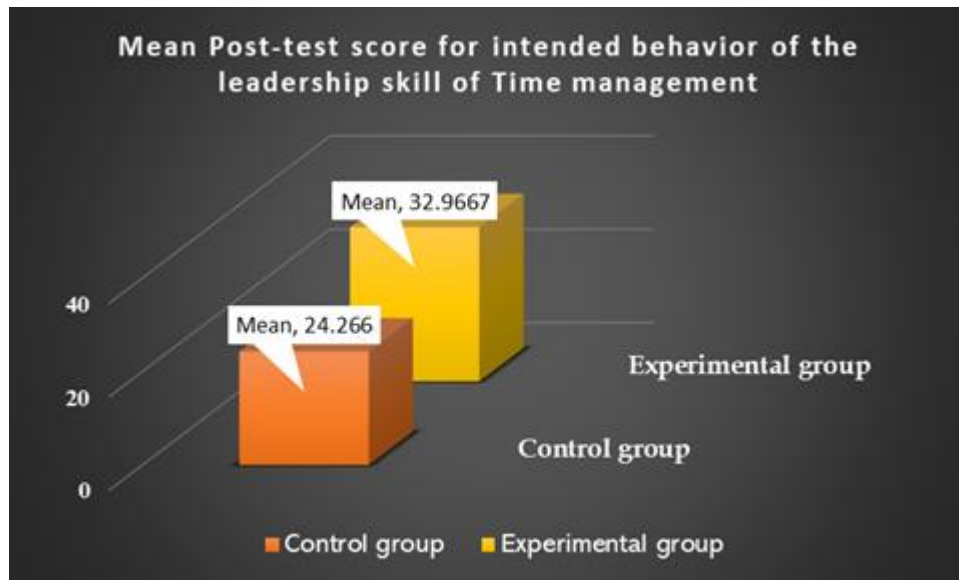

TABLE 4.18

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of time management for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.90	507.00	**42.000**	**-6.051**	**0.000**
Experimental Group	30	44.10	1323.00			

From Table 4.18, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of time management were 507.00 and 1323.00, respectively, with thirty students in each group. The u-value and z-value were found to be 42.000 and -6.051, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.051, the two-tailed probability was found to be

0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of time management," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of time management was evident. From Table 4.17, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the leadership skill of time management of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.19

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Goal Setting

Intended behaviour of the leadership skill of goal setting	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	23.5667	4.05721	0.74074
Experimental group	30	34.7667	3.84782	0.70251

From Table 4.19, it was found that the mean post-test score of students for the intended behaviour of the leadership skill of goal setting of the control group and the experimental group were 23.5667 and 34.7667, respectively. The standard deviation from the mean post-test score was found to be 4.05721 and 3.84782 for the control group and experimental group, respectively. The standard error of the mean was 0.74074 and 0.70251 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing

them. From the score of standard deviation, it was observed that the control group was more heterogeneous than the experimental group. The higher mean post-test score of the experimental group for intended behaviour of the leadership skill of goal setting compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of the leadership skill of goal setting." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.20, which is followed by interpretation.
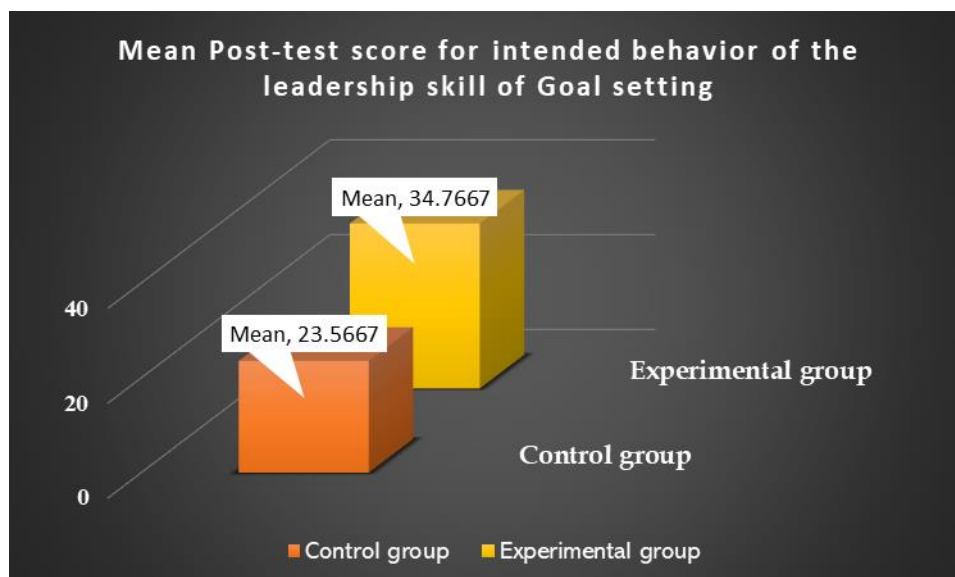

FIGURE 4.10 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of Goal setting

TABLE 4.20

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of goal setting for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.23	487.00	22.000	-6.343	0.000
Experimental Group	30	44.77	1343.00			

From Table 4.20, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of goal setting were 487.00 and 1343.00, respectively, with thirty students in each group. The u-value and z-value were found to be 22.000 and -6.343, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.343, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of goal setting," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of goal setting was clear. From Table 4.19, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.21

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Communication

Intended behaviour of the leadership skill of communication	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	23.2	3.61	0.659
Experimental group	30	33.86	3.91	0.738

From Table 4.21, it was found that the mean post-test score of students for the intended behaviour of the communication of the control group and the experimental group were 23.2 and 33.86, respectively. The standard deviation from the mean post-test score was found to be 3.61 and 3.91 for the control group and experimental group, respectively. The standard error of the mean was 0.659 and 0.738 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the leadership skill of communication in comparison to the control group may be attributed due to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of leadership skill of communication." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.22, which is followed by interpretation.
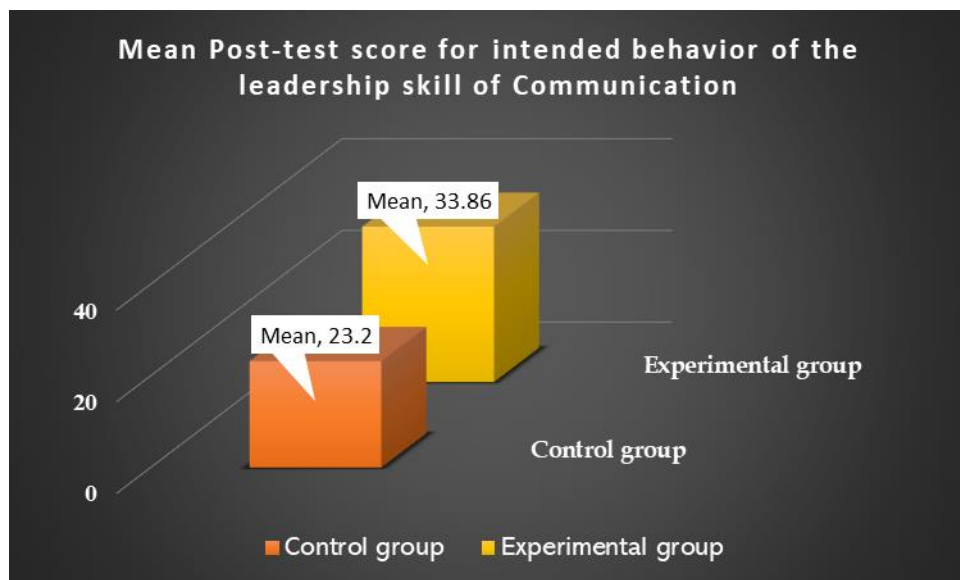

FIGURE 4.11 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of Communication

TABLE 4.22

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of communication for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	17.17	515.00	50.000	-5.933	0.000
Experimental Group	30	43.83	1315.00			

From Table 4.22, it was found that the sum of ranks of the control group and the experimental group students in intended behaviour of leadership skill of communication were 515.00 and 1315.00, respectively, with thirty students in each group. The u-value and z-value were found to be 50.000 and -5.933, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -5.933, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of the communication skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of communication was clear. From Table 4.21, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of leadership skill of communication of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.23

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Empathy

Intended behaviour of the leadership skill of empathy	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	23.8667	3.20273	0.58474
Experimental group	30	33.3000	4.19482	0.76587

From Table 4.23, it was found that the mean post-test score of students for the intended behaviour of the leadership skill of empathy of the control group and the experimental group were 23.8667 and 33.3000, respectively. The standard deviation from the mean post-test score was found to be 3.20273 and 4.19482 for the control and experimental groups. The standard error of the mean was 0.58474 and 0.76587 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the leadership skill of empathy compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of the leadership skill of empathy." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.24, which is followed by interpretation.
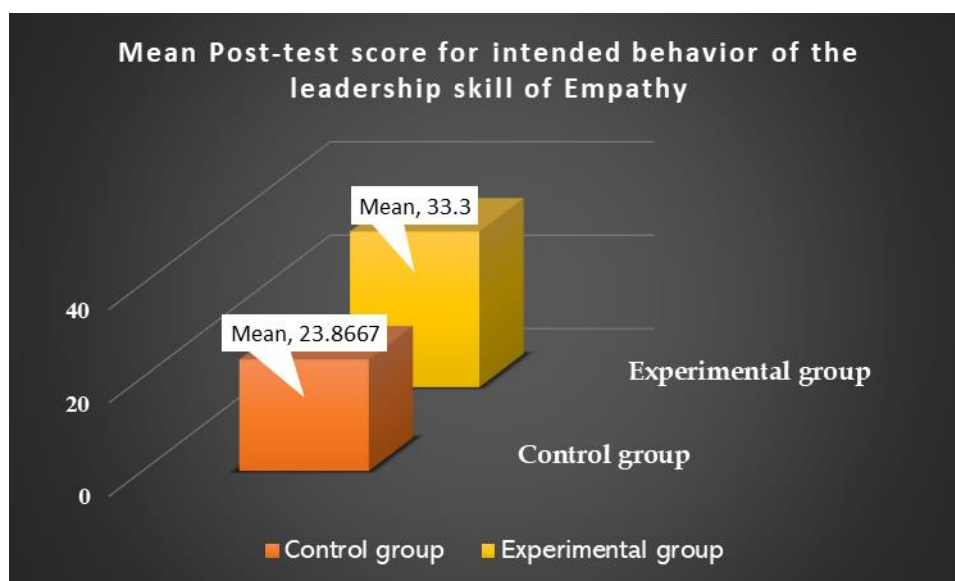
FIGURE 4.12 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of Empathy

TABLE 4.24

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of empathy for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.92	507.50	42.500	-6.038	0.000
Experimental Group	30	44.08	1322.50			

From Table 4.24, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of empathy were 507.50 and 1322.50, respectively, with thirty students in each group. The u-value and z-value were found to be 42.500 and -6.038, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.038, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of empathy," was rejected. Therefore, the control

group and the experimental group students differed significantly in their intended behaviour of the leadership skill of empathy was clear. From Table 4.23, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the leadership skill of empathy of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.25

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Problem Solving

Intended behaviour of the leadership skill of Problem Solving	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	24.0000	2.91252	0.53175
Experimental group	30	34.1000	3.67986	0.67185

From Table 4.25, it was found that the mean post-test score of students for the intended behaviour of the leadership skill of Problem Solving of the control group and the experimental group were 24.0000 and 34.1000, respectively. The standard deviation from the mean post-test score was found to be 2.91252 and 3.67986 for the control group and experimental group, respectively. The standard error of the mean was 0.53175 and 0.67185 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the leadership skill of Problem Solving compared to the control group may be attributed to the

Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of the leadership skill of Problem Solving." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.26, which is followed by interpretation.
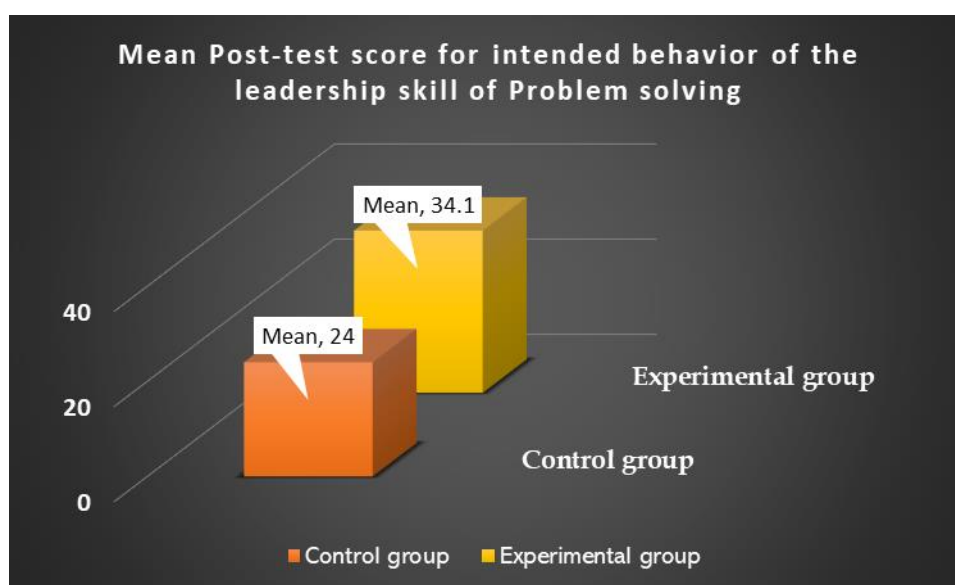

FIGURE 4.13 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of Problem solving

TABLE 4.26

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of Problem Solving for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.10	483.00	18.000	-6.413	0.000
Experimental Group	30	44.90	1347.00			

From Table 4.26, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of

Problem Solving were 483.00 and 1347.00 respectively, with thirty students in each group. The u-value and z-value were found to be 18.000 and -6.413, respectively. Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -6.413, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of Problem Solving," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of problem-solving was clear. From Table 4.25, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the leadership skill of Problem Solving of students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.27

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Team Building

Intended behaviour of the leadership skill of team building	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	24.400	3.73797	0.68246
Experimental group	30	35.1000	4.67089	0.85278

From Table 4.26, it was found that the mean post-test score of students for the intended behaviour of the leadership skill of team building of the control group and the experimental group were 24.4 and 35.100, respectively. The standard deviation

from the mean post-test score was found to be 3.73 and 4.67 for the control group and experimental group, respectively. The standard error of the mean was 0.68 and 0.85 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the leadership skill of team building compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of the leadership skill of team building." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.28, which is followed by interpretation.
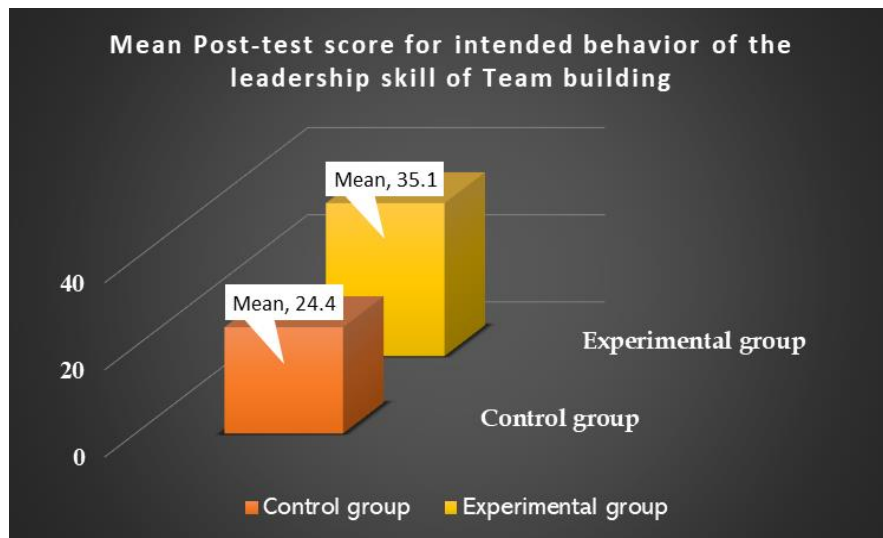

FIGURE 4.14 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of team building

TABLE 4.28

Summary of Mann-Whitney U-Test for intended behaviour of leadership skill of team building for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	17.23	517.00	52.000	-5.899	0.000
Experimental Group	30	43.77	1313.00			

From Table 4.28, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of team building were 517 and 1313, respectively, with thirty students in each group. The u-value and z-value were found to be 52.000 and -5.899, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z <= -5.899, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of team building," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of team building was clear. From Table 4.27, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the leadership skill of team building of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.29

Mean, Standard Deviation, Standard Error of Mean of Control Group and Experimental Group for Intended Behaviour of the leadership skill of Conflict Management

Intended behaviour of the leadership skill of conflict management	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	23.0333	3.63397	0.66347
Experimental group	30	33.4667	4.04060	0.73771

From Table 4.29, it was found that the mean post-test score of students for the intended behaviour of the leadership skill of conflict management of the control group and the experimental group were 23.033 and 33.466, respectively. The standard deviation from the mean post-test score was found to be 3.633 and 4.041 for the control group and experimental group, respectively. The standard error of the mean was 0.663 and 0.738 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the leadership skill of conflict management in comparison to the control group may be attributed due to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of leadership skill of conflict management." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.30, which is followed by interpretation.
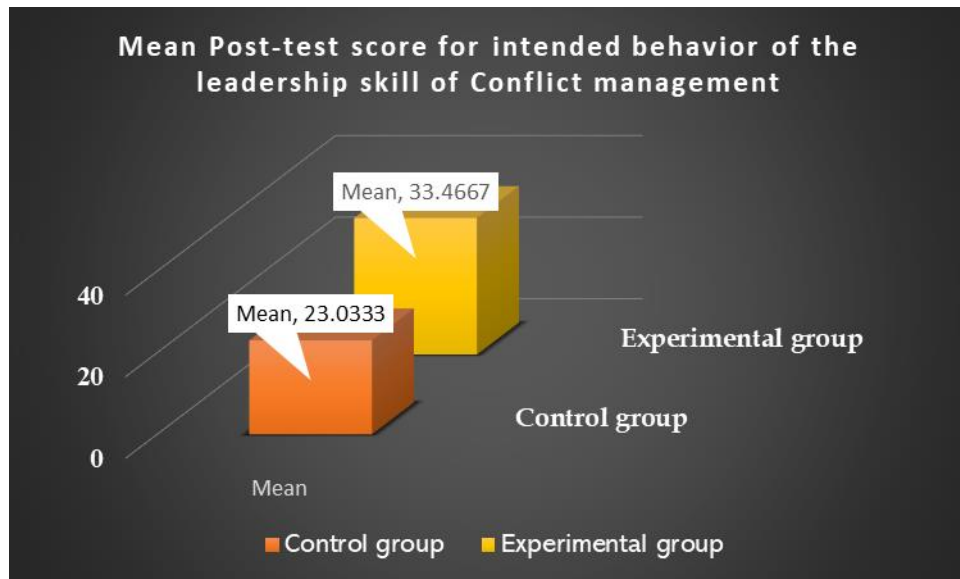
FIGURE 4.15 Mean Post-test score of Control Group and Experimental Group for the intended behaviour of the leadership skill of Conflict management

TABLE 4.30

Summary of Mann-Whitney U-Test for intended behaviour of the leadership skill of conflict management for Control Group and Experimental Group student with The Number of Sample, Sum of Ranks, U-Value, Z-Value, and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.95	508.50	43.500	-6.024	0.000
Experimental Group	30	44.05	1321.50			

From Table 4.30, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the leadership skill of conflict management were 508.50 and 1321.50 respectively, with thirty students in each group. The u-value and z-value were found to be 43.500 and -6.024, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z<= -6.024, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there

will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the intended behaviour of the leadership skill of conflict management," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the leadership skill of conflict management was evident. From Table 4.29, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the intended behaviour of the leadership skill of conflict management of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

TABLE 4.31

Mean, Standard Deviation, Standard Error of Mean of Control Group, and Experimental Group for Intended Behaviour on all the seven skills as a whole.

Intended behaviour on all the seven skills as a whole	N	Mean	Standard Deviation	Standard Error of Mean
Control group	30	166.333	21.42402	3.91147
Experimental group	30	237.5667	22.78185	3.91049

From Table 4.31, it was found that the mean post-test score of students for the intended behaviour of the seven leadership skill on all the seven skills as a whole of the control group and the experimental group were 166.33 and 237.57, respectively. The standard deviation from the mean post-test score was found to be 21.42 and 22.78 for the control group and experimental group, respectively. The standard error of the mean was 3.91 and 3.91 for the respective group. It was found that the mean post-test score of the experimental group was higher than the control group after comparing them. From the score of standard deviation, it was observed that the experimental group was more heterogeneous than the control group. The higher mean post-test score of the experimental group for the intended behaviour of the seven-leadership

skill on all the seven skills as a whole compared to the control group may be attributed to the Student Leadership Programme (SLP) for developing leadership skills. To find whether the difference in the mean post-test score was significant or by chance and to test the null hypothesis, i.e., H0 "there will be no significant difference between the mean post-test scores of the students of control and experimental group of standard IX in the intended behaviour of the seven-leadership skill on all the seven skills as a whole." Mann-Whitney U-test was used, as the sample was taken by the convenient sampling technique. The summary of the Mann-Whitney U-test is given in Table 4.32, which is followed by interpretation.
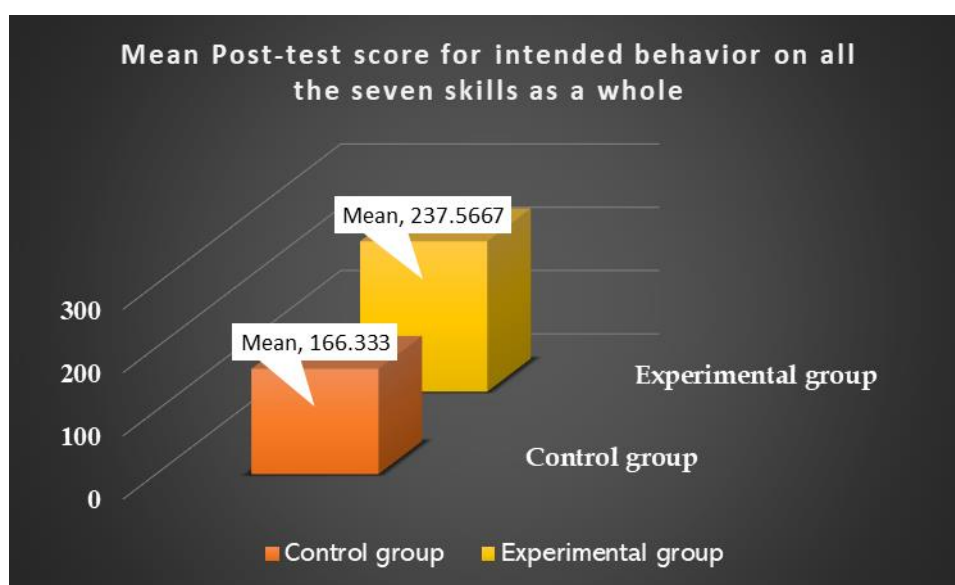
FIGURE 4.16 Mean Post-test score of Control Group and Experimental Group for the intended behaviour on all the seven skills as a whole

TABLE 4.32

Summary of Mann-Whitney U-Test for intended behaviour of overall leadership skill on all the seven skills as a whole for Control Group and Experimental Group student with the Number of Sample, Sum of Ranks, U-Value, Z-Value and Probability

Students	N	Mean of Ranks	Sum of Ranks	U-Value	Z- Value	Probability (p)
Control Group	30	16.27	488.00	23.000	-6.314	0.000
Experimental Group	30	44.73	1342.00			

From Table 4.32, it was found that the sum of ranks of the control group and the experimental group students in the intended behaviour of the seven leadership skill on all the seven skills as a whole were 488.00 and 1342.00 respectively 30 students in each group. The u-value and z-value were found to be 23.000 and -6.314, respectively.

Referring to the Table for normal probability (Table A of Siegel, 1956) under the null hypothesis (H0) of z, for z<= -6.314, the two-tailed probability was found to be 0.000, which was lesser than our decided a=0.01. Hence the null hypothesis H0, i.e., "there will be no significant difference between the mean post-test scores of the students of the control group and experimental group of standard IX in the conceptual knowledge of the communication skill," was rejected. Therefore, the control group and the experimental group students differed significantly in their intended behaviour of the seven-leadership skill on all the seven skills as a whole was clear. From Table 4.31, it was established that the mean post-test score of the experimental group was more than the mean post-test score of the control group, which could be attributed to the programme developed for students to leadership skills in students through a Student Leadership Programme (SLP).

Hence it can be concluded that the conceptual knowledge of the students in the experimental group was stochastically higher than the students in the control group due to the programme developed for students to inculcate leadership skills in students through a Student Leadership Programme (SLP).

4.2.3.3. Data Analysis of Actual Behaviour in leadership skills

During the academic year 2017-18, the investigator observed the actions and behaviours of students of the experimental group related to the seven leadership skills. The data related to the different skills was qualitatively analyzed using content analysis. The investigator noted in a journal their actions or any apparent activity relevant to the skills. The observation was done on the leadership skills demonstrated during school hours by the students and even outside school hours, such as during exhibitions and field trips. The investigator had observed their behaviour during other scheduled classes, morning assembly, recess time, and in the sports field.

- **Time management skill**

  The investigator had observed earlier those fifteen students used to take a long time usually more than ten minutes during group activities, but after learning the value of time, they became more aware of their time consumption and concluded their group discussion in seven-eight minutes. It was observed that one student created a schedule for her studies, athletics, and dancing lessons, something she had never done previously. Regarding the examination experiences of five students, it was noted that despite the length of one of the papers, they were able to complete it on time by concentrating on limiting the time allotted for each question. After taking the session of the time matrices, it was noted that ten students became more punctual in completing their projects and Formative Assessment (F.A.s), despite their previous lack of attention. Additionally, it was noted that all students arrived on time for their examinations.

- **Goal setting Skill**

  All students began developing short- and long-term goals following the class and regarding their daily activities. This was evident in the investigator's detailed observation of the assignment sheets of nine students. Additionally, it was observed that one student targeted for the year-end Olympiad and earned a fellowship. The investigator carefully listened to her experience preparing for the Olympiad by creating short-term goals, which she had learned during goal setting skill sessions. She completed her work daily, which helped her to obtain an outstanding score at the Olympiad. The investigator observed that four students had nominated themselves for becoming the head boy and head girl following the session. The investigator observed

their speech in which they acknowledged that the student leadership skill programme had been an excellent opportunity to highlight their talent as they aspired to be leaders in their fields.

- **Communication skill**

  The investigator observed that there were five students who did not participate much in conversation with other students. Later on, that is during the sessions they readily involved themselves in group activities with the rest of the class. It was found that though eight students initially preferred to write their views rather than speak at various events, soon gained the confidence to express themselves on stage in front of the entire class. Throughout the sessions, it was noted that there were twelve students who were previously uneasy, and three students who frequently refused to participate in activities and were hesitant to communicate their thoughts. However, at the session's conclusion, all the students were confident in discussing their firsthand experiences. The investigator saw that one student suffering from stage anxiety and who had never participated in any activities, participated, and presented herself with great confidence throughout the elocution competition. The investigator found that twelve students were initially disinterested, but eventually discussed their difficulties and even expressed different opinions in discussion forums. Eight students performed in various stage presentations during the school's annual event. One student competed in an inter-school quiz competition and was placed third, even though the student had never competed in any inter-school competition before owing to stage fright. Seven students participated actively in the teacher's day celebrations during the sessions only. Additionally, the investigator saw that the students dressed appropriately, and attended their respective classes. The investigator saw that the students were genuinely interested in resolving their classmates' difficulties; they communicated confidently and gave their best in the class, demonstrating excellent presentation abilities. Twenty-four students did not use the discussion forum during the session's initial phase, and so were unable to talk comfortably, but twenty-one students were able to give their comments properly in the discussion forum at the session's later stages.

- **Empathy skill**

  The investigator observed that four students paid less attention during the early sessions of the programme when the other students shared their personal stories, but towards the end of the sessions, they opined that it was wrong and that they would never do it again and disrespect anyone. In one instance, the investigator saw that after a student sustained an injury during an outdoor group activity, the entire group continued to play the game without him, yet they still shared their victory with the injured student. Another occurrence occurred when the investigator noticed a student approaching the investigator voluntarily to present the poem in the classroom which he had written for his late father. After hearing his poem, everyone applauded.

- **Problem-solving skill**

  The investigator observed that twenty-seven students began to discuss their concerns, and other students listened to them properly and gave worthy suggestions in various activities. After the skill session, good & scholarly students helped the low scorer students in their difficulties in the regular classes. Stereotypically, the students preferred to talk to their friends or spend time during free periods in the classroom, but later during the sessions, the students solved the problems, completed their work, & helped the other students to complete their class work. The investigator noted that students were now trying to understand each step for any given task. Twelve students were confident in providing further suggestions for many activities' smooth conduct, particularly group activities.

- **Team building skill**

  Although students formed their own groups in numerous activities, and they typically paired up with their closest friends, the investigator found that by the programme's conclusion, all students were relaxed and chose group members based on critical team elements rather than friendship. Initially, the sessions were chaotic for group activities, but there were no group formation issues during the latter part of these activities. The investigator noted that all students are at ease with one another irrespective of gender. The investigator noted that fifteen students competed in an inter-class skit competition and finished second. While they were rehearsing for the act, the investigator noticed that they had all prepared individually and without any conflicting incidents. The investigator made no observations regarding any small

issues or any blame game that emerged in the field. The investigator discovered that no single student remained unpaired through the programme's later phases, even though students could pair up independently. Concerning team building the investigator also noted that the team consisted of five students who participated in the Math-Science Exhibition. Additionally, the investigator saw that all students were aware of their roles and responsibilities, exerted maximum effort, and earned the top position at the zonal level. Additionally, at Ambe-Fest (an inter-school tournament), five students competed in the team's inter-debate competition and were placed second.

- **Conflict management skill**

  The investigator observed that while everyone agreed before to the session that there should be no fighting while working in a group or that there should be mutual understanding among team members, but not a single student was familiar with the concept or relevance of conflict management. Following the session, the students produced the skit spontaneously, without any competition for roles or themes. The investigator observed that during the preliminary stages of the programme, during group activities, students had varying opinions on numerous points in the skit, yet twenty-four students eventually volunteered numerous times to resolve the issues. Previously, during free periods/recess time, students frequently passed the time by fighting or chatting, which resulted in unanticipated problems. However, later in the day, when the teacher was not present, twenty-seven students sat quietly and completed their assignments. There was not a single student complaint about any malicious behaviour. They identified each group member's position and selected the role, topic, and even costumes for many group activities without resorting to silly disputes or arguments. The investigator noted that they exhibited a thorough understanding of conflict resolution. Two students were spotted not speaking to one another owing to previous grudges, but during one activity, one student expressed his feelings and expressed regret for everything, and both students became friends afterwards the other students expressed his regret as well.

  All these observations may be attributed to the Student Leadership Programme (SLP) for developing leadership skill of time management, goal setting, communication, empathy, problem-solving, team building, and conflict management. From these observations, it can be concluded that the Student Leadership Programme (SLP) used

for developing leadership skill could have been the cause all these demonstrated behaviours leadership behaviours among the students.

4.2.4. Data analysis Pertaining to Objective 4

"To study the reaction of students towards the Student Leadership Programme (SLP)."

The data pertaining to the reaction of all the experimental group students on the Student Leadership Programme (SLP) for leadership skill development was collected. Each statement had five alternatives mentioned in the reaction scale. The five alternatives ranged from **Strongly Agree, Agree, Undecided, Disagree,** and **Strongly Disagree**. The scores were as follows: Strongly agree (5), agree (4), undecided (3) and disagree (2), and strongly disagree (1). The percentage of responses to each statement was calculated, as well as the intensity index. They are listed below in the table.

The intensity index for each statement in the reaction scale was calculated using the formula given below:

f1	Frequency of Strongly Agree	N	Number of Respondents
f2	Frequency of Agree	SII	Statement Intensity Index
f3	Frequency of Undecided	n	Statement Number
f4	Frequency of Disagree	AI	Average Index
f5	Frequency of Strongly Disagree		

- **For each Statement Intensity Index (SII)**

=f1*5+f2*4+f3*3+f4*2+f5*1/Number of Respondents

- **For Average Index (AI)**

=Total of all Statement Intensity Indices/Number of Statements

=SII1+SII2+SII3+SII4+SII5+SII6+SII7+SII8+SII9+SII10+SII11+SII12+SII13+SII14+SII15+SII16+SII17+SII18+SII19+SII20/20

INTENSITY INDEX OF REACTION SCALE

Strongly Agree: **SA**, Agree: **A**, Undecided: **UD**, Disagree: **DA**, Strongly Disagree: **SD**

Sr. No.	Statement	SA %	A %	UD %	DA %	SD %	Intensity Index
T-1	The Student Leadership Programme (SLP) was different from other academic programmes.	80.00%	13.33%	6.67%	0.00%	0.00%	**4.73**
		24	4	2	0	0	30
T-2	The various concepts taught on leadership skills had clarity.	73.33%	20.00%	6.67%	0.00%	0.00%	**4.47**
		22	6	2	0	0	30
T-3	The concepts taught of different leadership skills were relevant to day-to-day life.	73.33%	23.33%	3.33%	0.00%	0.00%	**4.53**
		22	7	1	0	0	30
T-4	The overall explanation on leadership skills were according to the level of students.	66.67%	30.00%	3.33%	0.00%	0.00%	**4.53**
		20	9	1	0	0	30
T-5	The stories used during the interaction were interesting.	70.00%	23.33%	6.67%	0.00%	0.00%	**4.57**
		21	7	2	0	0	30
T-6	The examples used to explain different leadership skills were interesting and relevant to day-to-day life.	66.67%	20.00%	13.33%	0.00%	0.00%	**4.47**
		20	6	4	0	0	30
T-7	The activities used to develop different leadership skills were interesting and could be done in the classroom.	63.33%	30.00%	6.67%	0.00%	0.00%	**4.53**
		19	9	2	0	0	30
T-8	The games used to develop different leadership skills were interesting	66.67%	30.00%	3.33%	0.00%	0.00%	**4.57**
		20	9	1	0	0	30
T-9	The questions asked at different stages of the programme were relevant.	60.00%	36.67%	3.33%	0.00%	0.00%	**4.3**
		18	11	1	0	0	30
T-10	The time provided for various activities was adequate.	56.67%	33.33%	10.00%	0.00%	0.00%	**4.3**
		17	10	3	0	0	30
T-11	The time duration for each session was appropriate.	66.67%	33.33%	0.00%	0.00%	0.00%	**4.57**
		20	10	0	0	0	30
T-12	The time duration for the whole programme was appropriate.	63.33%	36.67%	0.00%	0.00%	0.00%	**4.63**
		19	11	0	0	0	30
T-13	The sessions on different leadership skills were interactive.	66.67%	33.33%	0.00%	0.00%	0.00%	**4.67**
		20	10	0	0	0	30
T-14	I participated actively in all the activities done in the classroom.	60.00%	33.33%	6.67%	0.00%	0.00%	**4.53**
		18	10	2	0	0	30
T-15	There was more interaction among peer group due to programme.	60.00%	30.00%	10.00%	0.00%	0.00%	**4.43**
		18	9	3	0	0	30
T-16	The SLP made learning of leadership skills joyful.	66.67%	26.67%	6.67%	0.00%	0.00%	**4.6**
		20	8	2	0	0	30
T-17	Learning of leadership skills become interesting due to SLP.	70.00%	23.33%	6.67%	0.00%	0.00%	**4.53**
		21	7	2	0	24	30
T-18	This SLP was helpful in increasing my conceptual knowledge about the different leadership skills.	73.33%	23.33%	3.33%	0.00%	0.00%	**4.7**
		22	7	1	0	0	30
T-19	The SLP developed different leadership skills in me.	66.67%	30.00%	3.33%	0.00%	0.00%	**4.5**
		20	9	1	0	24	30
T-20	I will practice these leadership skills in my daily life.	70.00%	26.67%	3.33%	0.00%	0.00%	**4.67**
		21	8	1	0	0	30

Data Interpretation of Reaction Scale

1. 80.00% of the students strongly agreed, 13.33% agreed, and 6.67% of students were undecided on statement no. 1 that "The Student Leadership Programme (SLP) was different from other academic programmes." The intensity index of 4.73 showed that their reaction was favourable.

2. 73.33% of the students strongly agreed, 20.00% agreed, 6.67% of students were undecided on statement no. 2, that "The various concepts taught on leadership skills had clarity". The intensity index of 4.47, showed that their reaction was favourable.

3. 73.33% of the students strongly agreed, 23.33% agreed, 3.33% of students were undecided on statement no. 3, that "The concepts taught of different leadership skills were relevant to day-to-day life." The intensity index of 4.53 showed that their reaction was favourable.

4. 66.67% of the students strongly agreed, 30.00% agreed, 3.33% of students were undecided on statement no. 4, that "The overall explanation on leadership skills was according to the level of the students." The intensity index of 4.53 showed that their reaction was favourable.

5. 70.00% of the students strongly agreed, 23.33% agreed, 6.67% of students were undecided on statement no. 5, that "The stories used during the interaction were interesting." The intensity index of 4.57 showed that their reaction was favourable.

6. 66.67% of the students strongly agreed, 20.00% agreed, 13.33% of students were undecided on statement no. 6, that "The examples used to explain different leadership skills were interesting and relevant to day-to-day life." The intensity index of 4.47 showed that their reaction was favourable.

7. 63.33% of the students strongly agreed, 30.00% agreed, 6.67% of students were undecided on statement no. 7 that "The activities used to develop different leadership skills were interesting and could be done in the classroom." The intensity index of 4.53 showed that their reaction was favourable.

8. 66.67% of the students strongly agreed, 30.00% agreed, 3.33% of students were undecided on statement no. 8 that "The games used to develop different leadership skills were interesting." The intensity index of 4.57 showed that their reaction was favourable.

9. 60.00% of the students strongly agreed, 36.67% agreed, 3.33% of students were undecided on statement no. 9 that "The questions asked at different stages of the

programme were relevant." The intensity index of 4.30 showed that their reaction was favourable.

10. 56.67% of the students strongly agreed, 33.33% agreed, 10.00% of students were undecided on statement no. 10 that "The time provided for various activities was adequate." The intensity index of 4.30 showed that their reaction was favourable.

11. 66.67% of the students strongly agreed, 33.33% of students were agreed on statement no. 11 that "The time duration for each session was appropriate." The intensity index of 4.57 showed that their reaction was favourable.

12. 63.33% of the students strongly agreed, 36.67% of students were agreed on statement no. 12 that "The time duration for the whole programme was appropriate." The intensity index of 4.63 showed that their reaction was favourable.

13. 66.67% of the students strongly agreed, 33.33% of students were agreed on statement no. 13 that "The sessions on different leadership skills were interactive." The intensity index of 4.67 showed that their reaction was favourable.

14. 60.00% of the students strongly agreed, 33.33% agreed, 6.67% of students were undecided on statement no. 14, that "I participated actively in all the activities done in the classroom." The intensity index of 4.53 showed that their reaction was favourable.

15. 60.00% of the students strongly agreed, 30.00% agreed, 10.00% of students were undecided on statement no. 15, that "There was more interaction among peer groups due to the programme." The intensity index of 4.43 showed that their reaction was favourable.

16. 66.67% of the students strongly agreed, 26.67% agreed, 6.67% of students were undecided on statement no. 16 that "The SLP made learning of leadership skills joyful." The intensity index of 4.60 showed that their reaction was favourable.

17. 70.00% of the students strongly agreed, 23.33% agreed, 6.67% of students were undecided on statement no. 17, that "The learning of leadership skills become interesting due to SLP." The intensity index of 4.53 showed that their reaction was favourable.

18. 73.33% of the students strongly agreed, 23.33% agreed, 3.33% of students were undecided on statement no. 18 that "This SLP was helpful in increasing my conceptual knowledge about the different leadership skills." The intensity index of 4.70 showed that their reaction was favourable.

19. 66.67% of the students were strongly agreed, 30.00% agreed, 3.33% were undecided on statement no. 19, that "The SLP developed different leadership skills in me." The intensity index of 4.50 showed that their reaction was favourable.

20. 70.00% of the students were strongly agreed, 26.67% agreed, 3.33% were undecided on statement no. 20, that "I will practice these leadership skills in my daily life." The intensity index of 4.67 showed that their reaction was favourable.

The average intensity index score was **4.62**. Therefore, it can be said that the students agreed with the above statements.

VISUAL REPRESENTATION