# CHAPTER IV

# DATA ANALYSIS AND DATA INTERPRETATION

## 4.1 Introduction

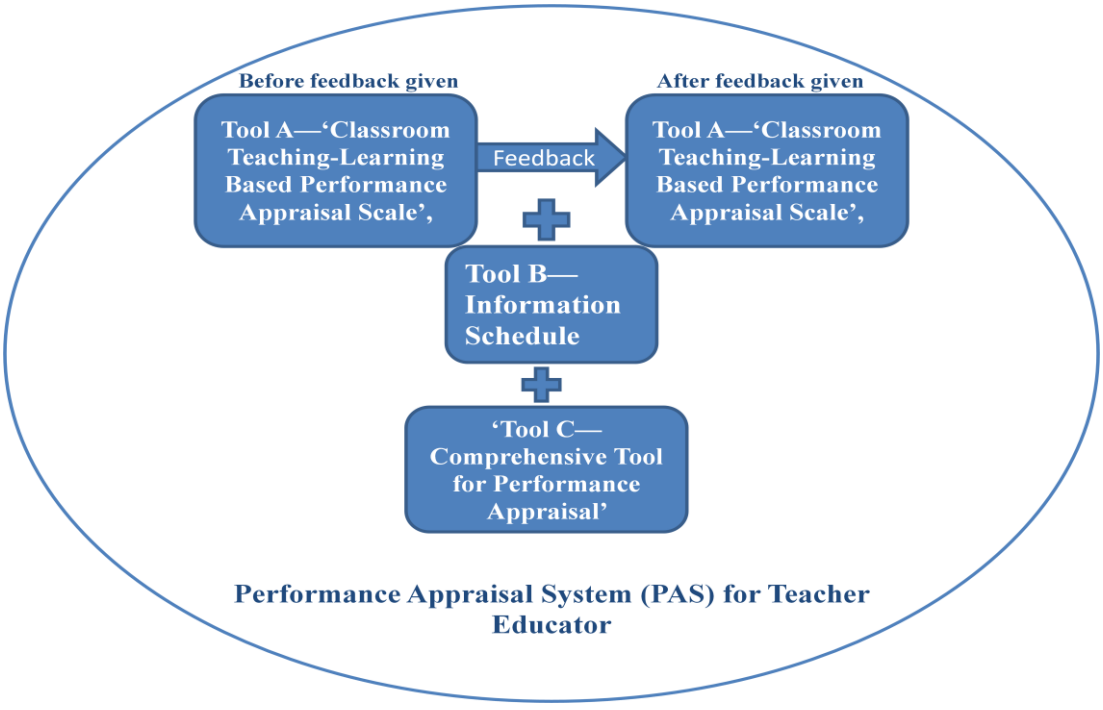
The present chapter describes analysis and interpretation of the data that had been collected after implementation of the Performance Appraisal System (PAS) on the target sample under study. The data were analyzed using the Quantitative (Descriptive and Inferential) statistical techniques. Frequencies, Percentage, Mean, Standard Deviation, t-test (Paired and Independent), ANOVA were used to analyze the data. For statistical analysis, Statistical Package for Social Sciences (SPSS) version 20 was used for exact values of parameters and tests. The objective wise analysis and interpretation of data are as follows.

## 4.2 Objective wise Analysis

### 4.2.1 Analysis with respect to Objective 1:

The first objective of the study was, "To develop Performance Appraisal System (PAS) for Teacher Educators by Self, Student-Teachers Peers, and Head." To achieve this objective, tools named Tool A—'Classroom Teaching-Learning Based Performance Appraisal Scale' (Appendix C), Tool B— Information Schedule (Appendix D), 'Tool C—Comprehensive Tool for Performance Appraisal' (Appendix E) were constructed by the researcher.

**Figure 4.1: Performance Appraisal System**



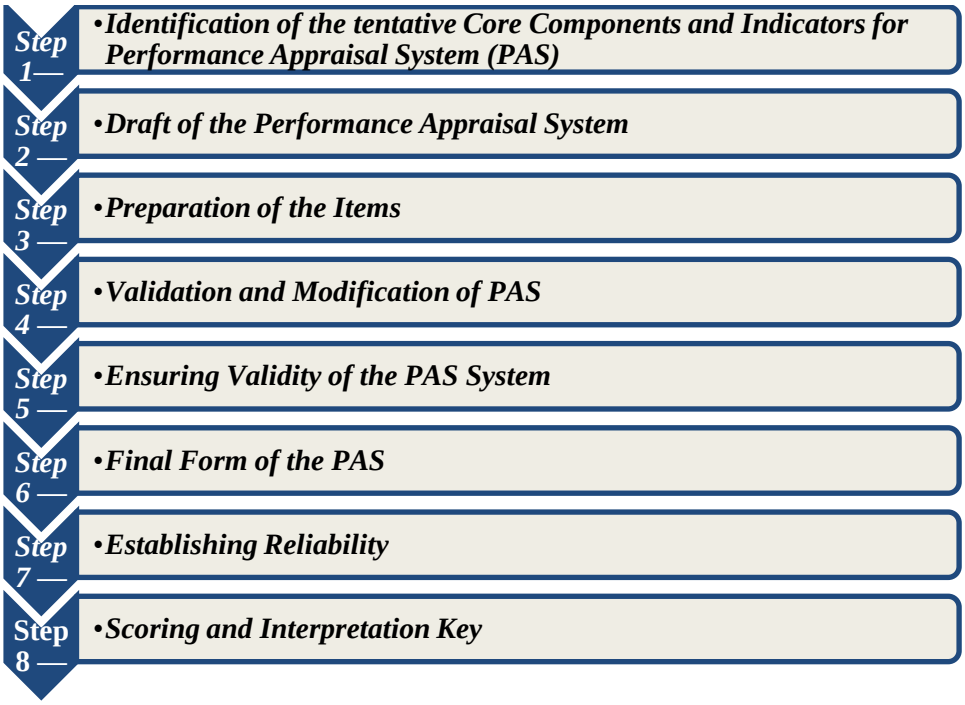
The Performance Appraisal system consists of rating of Teacher Educators' behaviour through *Tool A — 'Classroom Teaching-Learning Based Performance Appraisal Scale CTLBPAS', Tool B— Information Schedule and Tool C—Comprehensive Tool for Performance Appraisal*. Here, performance on Tool B and Tool C appraised by Self and Tool A with respect to the different components viz. *Classroom Management, Feedback, Communication Skills, Interpersonal Skills and Pedagogic Skills* is appraised by Self, Student-teachers, Peer and Head. Here, *Tool A* is administered before the feedback, then feedback is given to the Teacher Educators and again the same *Tool A* is administered on same group by same appraisers after the feedback.

The detailed process of development of the Performance Appraisal System (PAS) is elaborated in the following section.

### 4.2.1.1 Steps Involved in the Development of Performance Appraisal System

The Figure 4.2 depicts the steps involved in the development of the Performance Appraisal System which was used for the data collection for the present study.

**Figure 4.2: Steps involved in the Performance Appraisal System**




The elaborations of the steps are as follows:

**Step 1— Identification of the tentative Core Components for Performance Appraisal System (PAS):** From the different roles of Teacher Educator in the present context, Researchers' Personal Experience as Teacher Educator, Theoretical Framework of the present research, Analysis of Reviewed Literature related to the Performance Appraisal &

Teachers' Effectiveness and Discussions with the experts in the field of Teacher Education (Appendix B), the Core Components and Indicators of the PAS for Teacher Educators were identified and finalized (Appendix C1). It was decided that the PAS will include fewer than three major aspects A, B and C like (Figure 4.1):

A. Classroom Teaching-Learning Based Performance Appraisal
B. Information Schedule
C. Comprehensive Tool for Performance Appraisal

Under Aspect A: Classroom Teaching-Learning Based Performance Appraisal, the Category A: Teaching-Learning & Evaluation related to the Classroom Teaching-learning based Performance was evaluated. Five major components was to be included into this category namely

i. *Classroom Management,*
ii. *Feedback*
iii. *Communication Skills*
iv. *Interpersonal Skills and*
v. *Pedagogic Skills*.

The Aspect B: Information Schedule was constructed for collection of the Demographic Information about the Teacher Educators.

The Aspect C: Comprehensive Tool for Performance Appraisal comprised of two categories

Category B: Research Publication & Guidance

Category C: Extension, Institutional Growth & Community Development

The details under these categories are further elaborated in the subsequent sections. It was decided that the scores obtained from these categories will be utilized to allocate Composite Performance Appraisal Score (CPAS). The Composite Performance Appraisal Score (CPAS) for a particular Teacher Educator was calculated with appropriate differential weightage to all the three categories viz. Category A, Category B and Category C, by using the formula given in the Table 4.11.

**Step 2— Draft of the Performance Appraisal System**: After identification of the Core Components and Indicators, statements describing each indicator, a rough sketch of Performance Appraisal system for Teacher Educators were created that needed to be appraised by different stake holders' viz. Student-teacher, Self, Head and Peer. (See Appendix C2)

❑ The identified components for **Tool A—'Classroom Teaching-Learning Based Performance Appraisal Scale'** were initially made for different stake holders independently, which was as follows:

1. Appraisal of performance of Teacher Educators by student-teachers had components viz. Teaching skills
   - Planning, execution, evaluating and providing feedback during simulation / microteaching / internship / different phases of practice teaching along with curricular and co-curricular activities.
   - Evaluating student in compulsory course, providing feedback and arranging remedial classes.
   - Students and educators relation
2. Appraisal of performance of Teacher Educators by self was containing data viz.
   - Teaching skills
   - Contribution to professional related activities
   - Research related activities
   - Research project, research guidance
   - Refresher course/conference/seminar/workshop participation
   - Participation in institutional committees and other works, awards/ recognitions
   - Extension and co-curricular work
3. Appraisal of performance of Teacher Educator by peers was containing data viz.
   - Professional relation
   - Appearance (according to profession)
   - General behavior and
   - Attitude towards colleague
4. Appraisal of performance of Teacher Educator by head was containing data viz.
   - Contribution to professional related activities
   - Participation in institutional committees and other works, awards/ recognitions
   - Extension and co-curricular work
   - Research project, research guidance
   - Refresher course/conference/seminar/workshop participation
   - Evaluation of students and arranging remedial classes

Almost all items of Teacher Educator's self appraisal were parallel to Student-teacher's appraisal, Head's appraisal and Peer's appraisal, therefore a single scale was prepared for all stakeholders (assessors).

**Step 3— Preparation of the Items:** As per Expert's suggestions, items were prepared against each indicator. That further named as *Tool—A 'Classroom Teaching-Learning Based Performance Appraisal Scale'* (Appendix-C).

For collecting the basic information about the Teacher Educator *Tool-B 'Information schedule'* (Appendix-D) was also prepared.

*Tool C—'Comprehensive Tool for Performance Appraisal'* related to the Category B: Research Publication & Guidance and Category C: Extension, Institutional Growth & Community Development, was also constructed by the researcher. This Tool C was supposed to be filled by Teacher Educator with documental evidences. (Appendix E).

For a comprehensive PAS, Items under these three tools were designed and a rough draft was made by the researcher

**Step 4—Validation and Modification of PAS:** All three tools were sent to experts for Validation and Modification (Appendix B). As per requirement and ability of the items to get desired responses, items were modified/changed after experts' suggestions and were again sent for verification for different components.

- Major components and indicators which experts insisted to involve in **Tool—A 'Classroom Teaching-Learning Based Performance Appraisal Scale'** were mentioned in the Table 4.1.

**Table 4.1: Components and Indicators Approved by Experts'to be included in the Tool A**

| Sr. No. | Component | Indicators |
|---|---|---|
| 1. | **Classroom Management** | ▪ Motivate students for learning<br>▪ Involvement of learners in Teaching-Learning<br>▪ Innovative classroom teaching<br>▪ Motivate learner to initiate discussion<br>▪ Teacher Educator well prepared to manage time |
| 2. | **Evaluation and Feedback** | ▪ Educator gives proper feedback while teaching<br>▪ Observes practicing lessons n gives feedback<br>▪ Give feedback on lesson plan in advance<br>▪ Take test regularly according to content taught<br>▪ Gives appropriate feedback on teaching skills<br>▪ Assess learners' work objectively |

| | | |
|---|---|---|
| 3. | **Communication skill** | ▪ Create affective environment<br>▪ Educator loud and clear in their communication<br>▪ Appropriate use of language according to subject<br>▪ Effective in approaching student-teachers<br>▪ Organize remedial classes to improve skills |
| 4. | **Pedagogical skills** | ▪ Teacher-Educator has mastery over subject<br>▪ Teach subject with ease, giving variety of examples<br>▪ Teaches with confidence<br>▪ Innovative in teaching, integrate values in subject |
| 5. | **Interpersonal Relation** | ▪ Take care of students emotion while teaching<br>▪ Accessible in and out of classroom for students<br>▪ Facilitates cooperation among all<br>▪ Use written and spoken language well<br>▪ Exhibits appropriate action for emotionally and or physically disturbed students |

- ❑ Major components and indicators for which experts suggested not to include, in the *Tool—A 'Classroom Teaching-Learning Based Performance Appraisal Scale'* were
  - Content mastery as a component
  - Emotional attributes
  - Staff and professional obligation
  - Evaluation as the component and not with feedback
- ❑ Major aspects which experts insisted to consider and rejected to take in **Tool B—Information Schedule** were mentioned below in Table 4.2.

**Table 4.2: Demographic Variables Considered and Rejected under Tool B—Information Schedule were**

| **To include** | **Not to include** |
|---|---|
| Name | Caste |
| Gender | Designation |
| Qualification | Pay scale |
| Type of institution in working | Personal information |
| Experience | |

❑ For **'Tool C—Comprehensive Tool for Performance Appraisal'** almost all experts suggested to include more items in the draft tool and not to remove any of them to have comprehensive idea about Teacher Educators' professional and institutional progress keeping in mind societal aspect. Items suggested by the experts, which were included in tools were

- Training, faculty development work,
- Paper presented at different occasion and levels,
- Paper/articles published in different print media,
- Books published, researches carried out at different levels,
- Research Guidance given at the B.Ed. level too
- Membership with different Academic/Professional Bodies and Organizations/ Institutions,
- Invited Lectures/talks
- Innovation made in different subject areas/field,
- Administrative roles/responsibilities
- Co-curricular and community service related activities.

But items like commitment towards student, national obligation were not included and rejected by the experts.

**Step 5 — Ensuring Validity of the PAS System:** After considering suggestions of experts, pre-final version of PAS was prepare which includes *Tool—A 'Classroom Teaching-Learning Based Performance Appraisal Scale'*, *Tool-B 'Information schedule'* and *Tool C—'Comprehensive Tool for Performance Appraisal'. To ensure* 'Face cum Content Validity', the developed PAS was again send to subject experts (Appendix B). Language experts were also contacted for grammatical and language related errors.

**Step 6 — Final Form of the PAS:** Final version of the PAS was developed after attaining *Content validity and Face validity* by above mentioned steps. (Appendix C, D, E)

❑ *The Tool—A 'Classroom Teaching-Learning Based Performance Appraisal Scale' comprised of* forty statements pertaining to classroom teaching. Out of forty items, 9 items were related to 'Classroom Management' component, 9 items were from 'Feedback' component, 6 items for Communication skill' related component, 11 items were for 'Pedagogical Skill' component and 5 items were for 'Inter personal relation' component were finalized. (Appendix C). The *Classroom Teaching-Learning Based Performance Appraisal Score* (CTLBPAS) was calculated from this tool.

- In *Tool— B: General Information and Information* related to Demographic variables as mentioned in objective 3 were taken. (Appendix D)
- Where as in *Tool C—'Comprehensive Tool for Performance Appraisal'* Information encompassing all components of Professional, Institutional and Community Development related activities were included and implicated. (Appendix E)

**Step 7 — Establishing Reliability:** To establish reliability of the PAS a pilot study was undertaken in the teacher education institution named, S.D. Patel B.Ed. College, Sayjipura, Ajwa road, Vadodara in academic year 2012-13, December. The implementation of the tool on pilot sample was found satisfactory in terms of the intended purpose fulfillment.

**Step 8— Scoring and Interpretation Key:** The detailed Scoring key for obtaining the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) from Tool— A and Performance Appraisal Scores (PAS) from Tool— C, was prepared by the researcher and further validated by the experts. These scoring keys were developed for Tool—A and Tool—C, for consistent interpretation of the scores (Appendix—F & G).

The Composite Performance Appraisal Score (CPAS) was calculated with appropriate weightage to all the three categories viz. Category A, Category B and Category C by using the formula given in the Table 4.3.

**Table 4.3: Calculation of the Composite Performance Appraisal Score (CPAS)**

| Source Tool | Categories | Sub-categories | SCW | CF | OCW | Composite Performance Appraisal Score (CPAS) |
|---|---|---|---|---|---|---|
| **Tool A** | **Category A— Teaching-Learning & Evaluation (A)** | **Performance assessed by the Stakeholders ($a_1$)** | 0.8 | $=0.8*a_1+0.2*a_2$ | ***0.5*** | $=0.5*A+0.25*B+0.25*C$ Or $=0.5(0.8*a_1+0.2*a_2)+0.25*B+0.25*C$ |
| | | **Work Load ($a_2$)** | 0.2 | | | |
| **Tool C** | **Category B— Research Publication & Guidance (B)** | | - | | ***0.25*** | |
| **Tool C** | **Category C— Extension Institutional Growth & Community Development (C)** | | - | | ***0.25*** | |

*SCW- Sub Category Weightage; CF- Calculating Formula, OCW- Overall Category weightage*

The National Policy of Education (NPE)—1986 and Plan of Action (POA)—1992, considers the three fold task of a teacher as Teaching, Research and Extension of equal importance. But majority of the experts in the field of Teacher Education (Appendix B) were of the opinion that the major task of a Teacher Educator is to perform in the classroom along with the other two.

Other reasons for giving less weightage to Category B and Category C by the experts were:

- As the research and extension facilities are meager, especially, in the Private Teacher Education Institutions, so the performance scores in these areas will be negligible.
- Not all the Teacher Educators are recognized guides for Doctoral research
- Not all the Teacher Educators were having Major and Minor Projects by funding agencies like UGC, ICSSR, NUEPA etc.
- If equal weightage given to the Category A, Category B and Category C, then there might be less or no scores in the category B and Category C.
- Teacher Educators' score obtained in category A is mean result of all four stakeholders, whereas in category B and category C only self appraisal been done.
- Prime goal of education system is to provide quality education and research work give support to that. To ensure prime goal teaching is important.

So the performance of the Teacher Educator is majorly depends upon the Classroom based Teaching-Learning.

The next question was how much weightage to be given to each of the category to make a Composite Performance Appraisal Score (CPAS) for a Teacher Educator? From the discussion with the experts, it was emerged out that the Classroom based teaching-learning is the major component of the performance for a Teacher Educator along with the amount of the work load that a Teacher Educator carries out in the direct teaching learning and other activities. So a weightage of 0.5 was allocated to this Category A for making a CPAS. Out of this 0.5 weightage, 80 percent score weightage was given to the Performance assessed by the Stakeholders (Assessors) and 20 percent weightage was given to the work load the Teacher Educator carries out in the institution. Category B—Research Publication & Guidance (B) and Category C—Extension Institutional Growth & Community Development (C) was given a weightage of 0.25 each.

Thus, **Composite Performance Appraisal Score (CPAS)** = 0.5*A+0.25*B+0.25*C

Or

**Composite Performance Appraisal Score (CPAS)** ==$0.5(0.8*a_1+0.2*a_2)$ +0.25*B+0.25*C

### 4.2.2 Analysis with respect to Objective 2

The second objective of the study was, "To study the Performance of Teacher Educators through PAS by a. Self b. Student-teachers c. Peers and d. Head".

To achieve this objective, the constructed Performance Appraisal System (PAS) for Teacher Educators was implemented in the Teacher Education Institutions of Vadodara district as mentioned in the sample part earlier in Chapter III. The *Classroom Teaching-Learning Based Performance Appraisal Score* (CTLBPAS) was calculated from the Tool—A, where minimum score was 0 (zero) and maximum achievable score was 10 (ten), and used for analysis of the data under Objective 2.

#### 4.2.2.1 Analysis with respect to Objective 2.1:

The Objective 2.1 of the study was, "To compare the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators as assessed by Self, Student-teachers, Peers and Head, before the feedback was given."

Before the Feedback was given, the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators by Student-teacher, Peers Self and Head was found to be 6.4205, 7.059, 7.2455 and 7.4114 respectively. For comparing the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head, before the feedback was given, the following null hypothesis was formulated.

*Ho 2.1:* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators as assessed by Self, Student-teachers, Peers and Head, before the feedback was given.

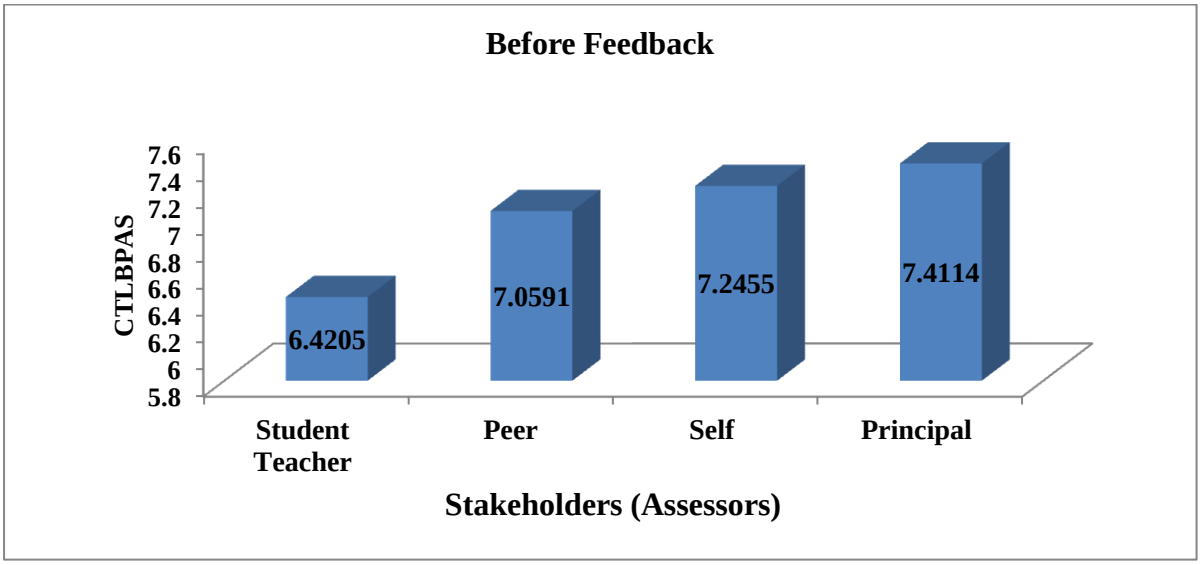
To test this hypothesis Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.4 and Graph 4.1 represent the results

**Table 4.4:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by Student Teachers, Peer, Self and Head before the feedback was given***

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value Sig.(2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 25.131 | 3 | 8.377 | | |
| Within Groups | 177.845 | 172 | 1.034 | 8.102 | .000* |
| Total | 202.975 | 175 | | | |

*Significant

***Graph 4.1: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) across different assessors (before giving the feedback)***




Further, from the Table 4.4 and Graph 4.1, it is clear that F-value was found to be 8.102 which was significant at P-value of 0.0 (2- tailed) with df = 3,172. This P-value is less than the alpha value of 0.05, thus, the F-value was significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators differ significantly at 0.00 level of significance with respect to different assessors i.e. Student Teachers, Peer, Self and Head. So, the null hypothesis, "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators as assessed by Self, Student-teachers, Peers and Head, before the feedback was given" was rejected at 0.00 level.

Thus, it can be elicited that Performance Appraisal Scores of Teacher Educators was dependent of the assessors Self, Student-teachers, Peers and Head.

From Table 4.4 it can also be elicited that the mean CTLBPAS scores of Heads were found to be more than the other stakeholders (assessors). Moreover, Peers among all stakeholders (assessors) were found to be allocating less CTLBPAS scores for the Teacher Educators. This may be possible due to the competition among the Teacher Educators.

To find out further which groups of the assessors had made significant difference for the Performance Appraisal of the Teacher Educators, a Post hoc Fisher's Least Significant Difference (LSD) test was performed using the SPSS (version 22). Following Table 4.5 represent the results.

**Table 4.5:** ***Post Hoc test for the CTLBPAS between different Assessor groups***

| Multiple Comparisons | | | | | | |
|---|---|---|---|---|---|---|
| Dependent Variable: *CTLBPAS* | | | | | Test: LSD | |
| (I) Stakeholder | (J) Stakeholder | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| Student Teacher | Peer | **-.63864*** | **.21679** | **.004*** | -1.0666 | -.2107 |
| | Self | **-.80843*** | **.21559** | **.000*** | -1.2340 | -.3829 |
| | Head | **-1.01210*** | **.21805** | **.000*** | -1.4425 | -.5817 |
| Peer | Self | -.16980 | .21559 | .432 | -.5953 | .2557 |
| | Head | -.37347 | .21805 | .089 | -.8039 | .0569 |
| Self | Head | -.20367 | .21685 | .349 | -.6317 | .2244 |
| ** Significant at the 0.05 level* | | For Means of the stakeholders under column (I) and (J), see Graph 4.1 | | | | |

From the Table 4.5, it was clear that Performance assessed by the Student-teachers and Performance assessed by Peers was significantly different at 0.002 level of significance.

Also, Performance assessed by the Student-teachers and Performance appraised by the Self was significantly different at 0.00 level of significance.

At the same time, Performance assessed by the Student-teachers and Performance appraised by the Heads were significantly different 0.005 levels of significance.

Further, between other possible pairs of assessors there Mean ***CTLBPAS*** was not significant different at 0.05 level of significance.

Therefore, it can be elicited that, before the feedback was given, out of four groups of assessors, three groups viz. Peer, self and Head were found homogeneous on assessing the performance of the Teacher Educators. While the Student-teachers having a different opinion about the performance of the Teacher Educators on the Classroom Teaching-Learning based Performance Appraisal.

From the student-teacher's point of view, the Performance of the Teacher Educators was found to be significantly different than that assessed by Peer, Self and Head, before the feedback was given. Thus, Student-teachers play important role in assessing Teacher Educators.

#### 4.2.2.2 Analysis with respect to Objective 2.2:

The Objective 2.2 of the study was, "To compare the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators as assessed by Self, Student-teachers, Peers and Head, after the feedback was given."

After the feedback was given, the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators by Student-teacher, Peers, Self and Head was found to be 7.5045, 7.1182, 7.4773 and 7.0682 respectively.

For comparing the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head, after the feedback was given, the following null hypothesis was formulated.

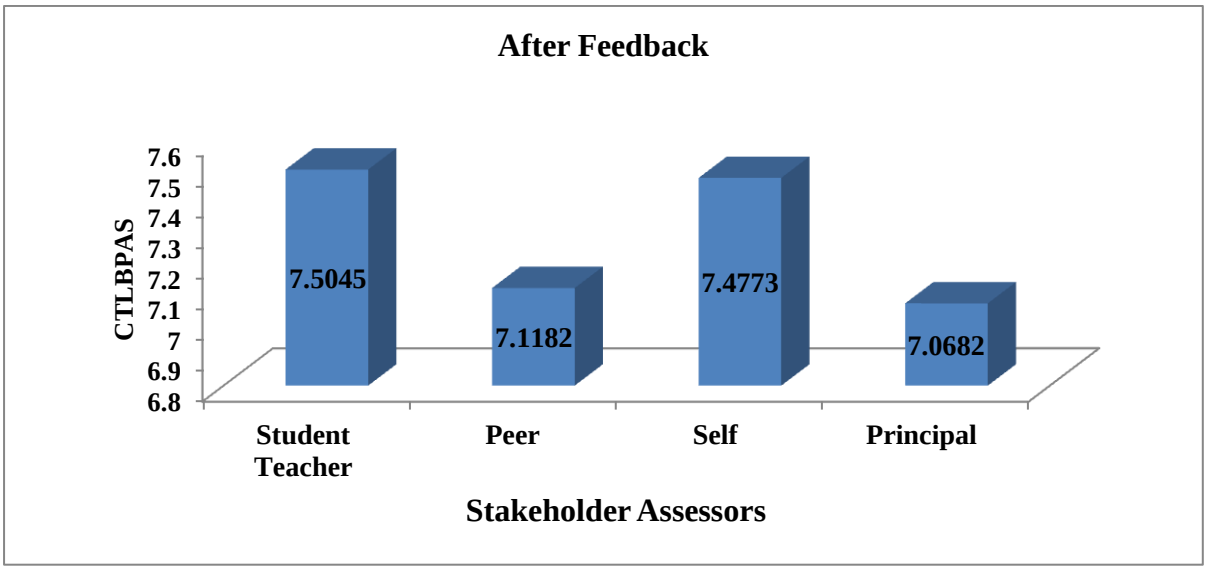
*Ho 2.2:* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators as assessed by Self, Student-teachers, Peers and Head, after the feedback was given.

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.6 and Graph 4.2 represent the results.

**Table 4.6:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by Student Teachers, Peer, Self and Head after the feedback was given***

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 6.428 | 3 | 2.143 | | |
| Within Groups | 167.701 | 172 | .975 | 2.198 | .090 |
| Total | 174.129 | 175 | | | |

***Graph 4.2: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) across different assessors after the feedback was given***



Further, from the Table 4.6 and Graph 4.2, it is clear that F-value was found to be 2.918 which was significant at P-value of 0.068 (2- tailed) with df =3,172. This P-value was greater than the alpha value of 0.05, thus, the F-value was not significant at 0.05 level of significance. This indicates that the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators did not differ significantly at 0.05 level of significance with respect to different assessors i.e. Student -teachers, Peer, Self and Head. So, the null hypothesis, "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head after the feedback was given" was not rejected at 0.05 level of significance.

Therefore, it can be elicited that Student-teachers, Peer, Self and Head were found homogeneous on assessing the performance of the Teacher Educators, after the feedback was given. Therefore, after the feedback was given the Performance Appraisal Scores of Teacher Educators as assessed by Self, Student-teachers, Peers and Head were homogeneous i.e. consistent, leading to reliability of the scores. Therefore, consistency of Performance Appraisal Scores across Self, Student-teachers, Peers and Head was observed after the feedback was given to Teacher Educators.

#### 4.2.2.3 Analysis with respect to Objective 2.3:

The Objective 2.3 of the study was, "To compare the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head on before and after the feedback was given."

Before the Feedback was given, the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators by Student-teacher, Peers Self and Head was found to be 6.4205, 7.059, 7.2455 and 7.4114 respectively.

After the feedback was given, the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators by Student-teacher, Peers, Self and Head was found to be 7.5045, 7.1182, 7.4773 and 7.0682 respectively.

For comparing the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head on before and after the feedback was given, the following null hypothesis was formulated.

*Ho 2.3:* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head on before and after the feedback was given.

For the convenience of analysis the Null Hypothesis Ho *2.3 was further divided into the following null hypotheses.*

- *Ho 2.3 (a):* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Student-teachers on before and after the feedback was given.
- *Ho 2.3 (b):* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Peers on before and after the feedback was given.
- *Ho 2.3 (c):* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Self on before and after the feedback was given.
- *Ho 2.3 (d):* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Head on before and after the feedback was given.

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. All the null hypotheses were tested at 0.05 level of significance. Following Table 4.7 and Graph 4.3 represent the results

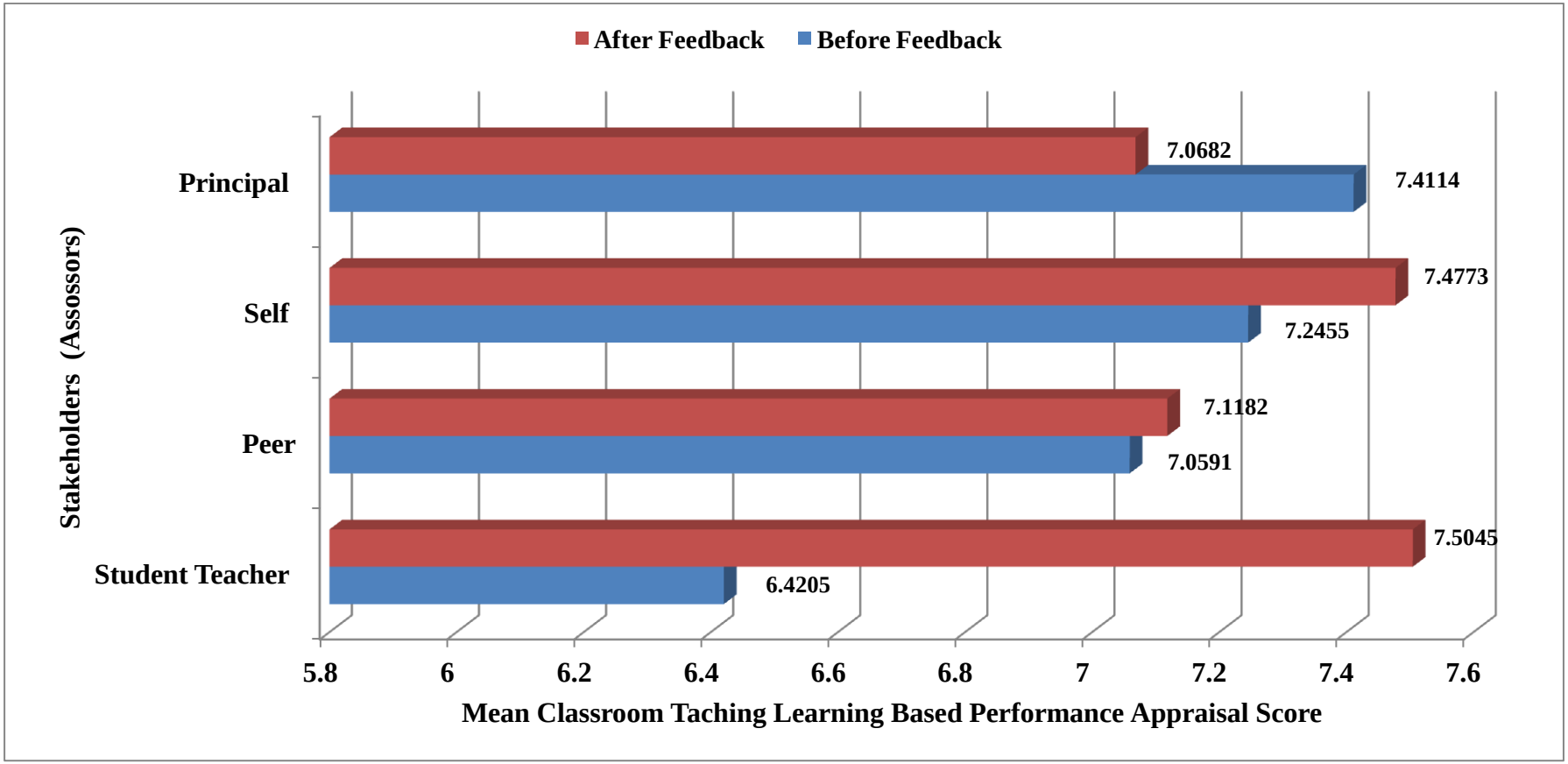
From Table 4.7 it can also be elicited that the mean CTLBPAS scores given by Heads were found to be less than that given by all of the stakeholders (assessors), after feedback was given. Peers were allocating less CTLBPAS scores for the Teacher Educators after feedback was given. Whereas Student-teachers and Self assessed more on CTLBPAS, after feedback was given.

**Table 4.7:** ***Sum of squares of mean, Mean square, Correlation 'r', Paired Sampled t-value, degrees of freedom (df), and level of significance (0.05) of the Performance Appraisal Scores with respect to different Assessors on before and after the feedback was given***

| Paired Samples Statistics | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Pair wise comparison of before and after the feedback** | | **Mean** | **N** | **Std. Deviation** | **Std. Error Mean** | **df** | **Correlation 'r'** | **'t'** | **P-value Sig. (2-tailed)** |
| Pair 1 | Student Teacher Before Feedback | 6.4205 | 44 | 1.03308 | .15574 | 43 | .462 | -7.727 | .000* |
| | Student Teacher After Feedback | 7.5045 | 44 | .63975 | .09645 | | | | |
| Pair 2 | Peer Before Feedback | 7.0591 | 44 | 1.18131 | .17809 | 43 | .892 | 0.658 | .514 |
| | Peer after Feedback | 7.1182 | 44 | 1.31578 | .19836 | | | | |
| Pair 3 | Self Before Feedback | 7.2455 | 44 | .90899 | .13703 | 43 | .839 | -2.815 | .007* |
| | Self After Feedback | 7.4773 | 44 | .99554 | .15008 | | | | |
| Pair 4 | Head Before Feedback | 7.4114 | 44 | .92415 | .13932 | 43 | .749 | 3.576 | .001* |
| | Head After Feedback | 7.0682 | 44 | .86851 | .13093 | | | | |

** Significant at 0.05 level*

*Graph 4.3: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to Self, Student-teachers, Peers and Head on Before and After the feedback was given*



From the Table 4.7 and Graph 4.3, it is clear that t-value was found to be -7.727 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Student-teachers for the Teacher Educators on before and after the feedback was given differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.4 (a), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Student-teachers, on before and after the feedback was given" was rejected. The Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Student-teachers after giving feedback was significantly more than that of before feedback was given. Thus, it can be elicited that the Teacher Educators' classroom teaching-learning based performance was improved, after the feedback was given as assessed by the Student-teachers.

From the Table 4.7 and Graph 4.3, it is clear that t-value was found to be 0.658, which was significant at P-value of 0.514 (2- tailed) with df =43. This P-value is greater than the 0.05 alpha level of Significance, thus, the t-value is not significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Peers for the Teacher Educators on before and after the feedback was given do not differ significantly. So, the null hypothesis: 2.4 (b), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Peers, on before and after the feedback was given" was not rejected. The Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Peers before or after giving feedback was not makes any difference. Thus, it can be elicited that the Teacher Educators' classroom teaching-learning based performance was not improved, after the feedback was given as assessed by the Peers.

From the Table 4.7 and Graph 4.3, it is clear that t-value was found to be -2.815, which was significant at P-value of 0.007 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level. This indicates that the Mean Classroom Teaching Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the self for the Teacher Educators on before and after the feedback was given differ significantly. So, the null hypothesis: 2.4 (b), "There will be no

significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by Self on before and after the feedback was given" was rejected. The Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by self, on after giving feedback was significantly more than that of before feedback was given. Thus, it can be elicited that the Teacher Educators' classroom teaching-learning based performance was enhanced, after the feedback was given, as assessed by Teacher Educators themselves.

From the Table 4.7 and Graph 4.3, it is clear that t-value was found to be 3.576 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Head for the Teacher Educators on before and after the feedback was given, differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.4 (d), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators assessed by the Heads on before and after the feedback was given" was rejected. The Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by the Head before giving feedback was more than that of after feedback was given. Thus, it can be elicited that the Teacher Educators' classroom teaching-learning based performance was decreased, after the feedback was given as assessed by the Head.

Conclusively, it can be inferred that the Performance of the Teacher Educators was enhanced after the feedback was given to them as assessed by the Student-teachers, Peers and the Teacher Educator themselves. But from the Principal's point of view the performance was decreased on giving the feedback.

#### 4.2.2.4 Analysis with respect to Objective 2.4:

The Objective 2.4 of the study was, "To compare the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators for Different Components of Teaching-Learning, before and after the feedback was given."

For comparing the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators on Different Components of Teaching-Learning, before and after the feedback was given, the following null hypothesis was formulated

*Ho 2.4: There will be no significant difference in the mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators* on Different Components of Teaching-Learning, on *before and after the feedback was given.*

As the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators were calculated upon five major components namely *Classroom Management, Feedback, Communication Skills, Interpersonal Skills and Pedagogic Skills*. Thus, for the convenience of analysis the Null Hypothesis Ho 2.4 was further divided into the following null hypotheses.

- *Ho 2.4 (a): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Classroom Management' Component of Teacher Educators before and after the feedback was given.*
- *Ho 2.4 (b): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Feedback' Component of Teacher Educators before and after the feedback was given.*
- *Ho 2.4 (c): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Communication Skills' Component Management Component of Teacher Educators before and after the feedback was given.*
- *Ho 2.4 (d): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Interpersonal Skills' Component of Teacher Educators before and after the feedback was given.*
- *Ho 2.4 (e): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Pedagogic Skills' Component of Teacher Educators before and after the feedback was given.*

To test these hypotheses, Mean, Standard Deviation, Standard Error of Mean, Pearson Correlation coefficient 'r', Paired sample t-value, degrees of freedom (df), and level of significance of the scores were calculated.

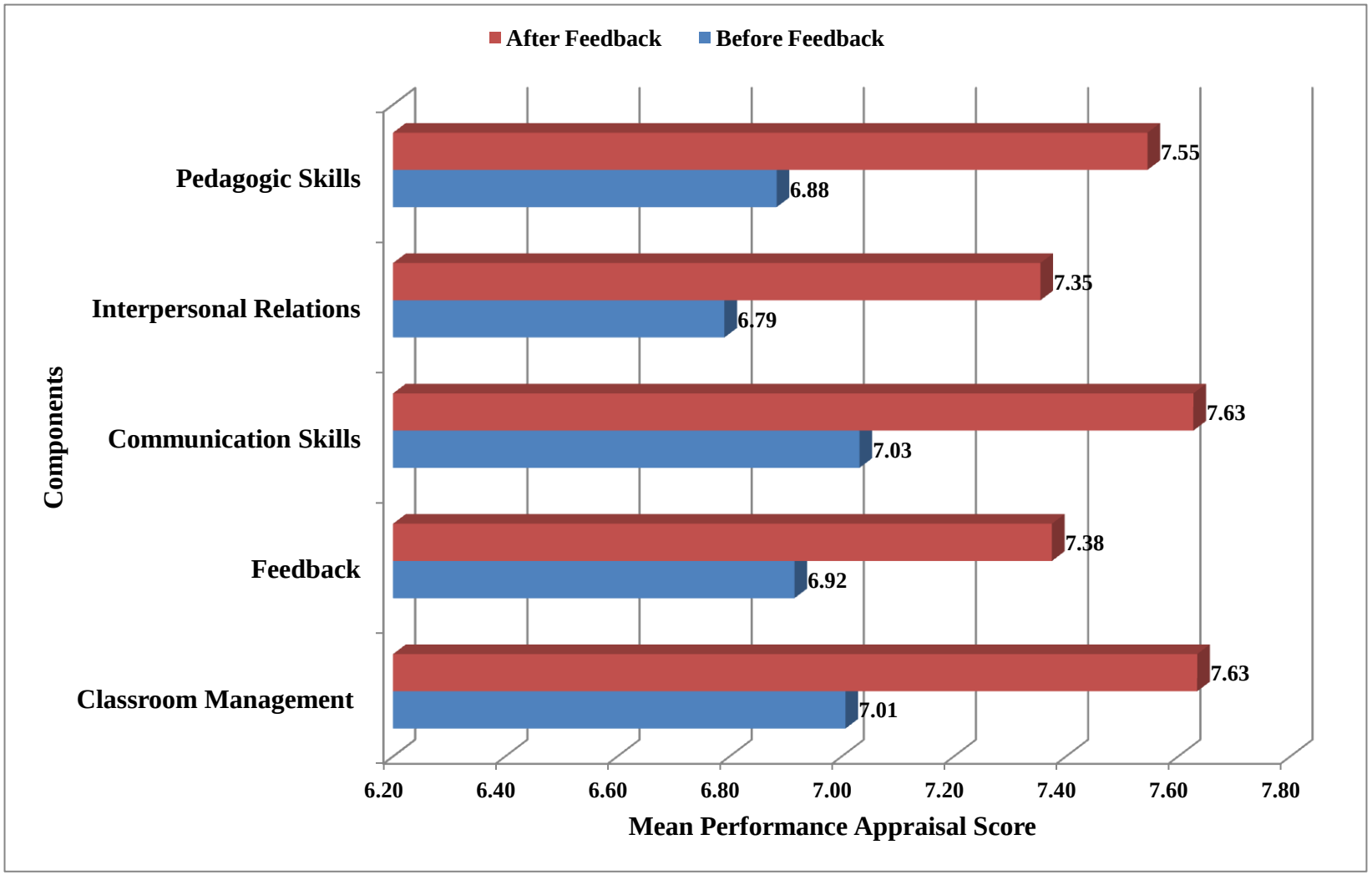
All these hypotheses under study were tested at 0.05 level of significance. Following Table 4.8 and Graph 4.4 represent the results.

**Table 4.8:** ***Mean, N, Standard Deviation, Correlation 'r', Paired Sampled t-value, degrees of freedom (df), and level of significance (0.05) of the Performance Appraisal Scores with respect to different components***

| Paired Samples Statistics | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Component** | **Mean** | **N** | **Std. Deviation** | **Std. Error Mean** | **df** | **Correlation 'r'** | **'t'** | **P-value Sig. (2-tailed)** |
| Pair 1 | Classroom Management (Before Feedback) | 7.0068 | 44 | 0.91509 | .13796 | 43 | 0.427 | 4.626 | .000* |
| | Classroom Management (After Feedback) | 7.6341 | 44 | 0.70478 | .10625 | | | | |
| Pair 2 | Feedback (Before Feedback) | 6.9159 | 44 | 0.94523 | .14250 | 43 | 0.724 | 4.485 | .000* |
| | Post Feedback (After Feedback) | 7.3750 | 44 | 0.87527 | .13195 | | | | |
| Pair 3 | Communication Skills (Before Feedback) | 7.0318 | 44 | 0.92580 | .13957 | 43 | 0.216 | 3.422 | .000* |
| | Communication Skills (After Feedback) | 7.6273 | 44 | 0.91838 | .13845 | | | | |
| Pair 4 | Interpersonal Relationship (Before Feedback) | 6.7909 | 44 | 0.90575 | .13655 | 43 | 0.285 | 4.058 | .001* |
| | Interpersonal Relationship (After Feedback) | 7.3545 | 44 | 0.56710 | .08549 | | | | |
| Pair 5 | Pedagogic Skills (Before Feedback) | 6.8841 | 44 | 0.99952 | .15068 | 43 | 0.321 | 4.370 | .000* |
| | Pedagogic Skills (After Feedback) | 7.5455 | 44 | 0.65502 | .09875 | | | | |
| Pair 6 | Overall (Before Feedback) | 6.9205 | 44 | 0.91844 | .13846 | 43 | 0.442 | 4.524 | .000* |
| | Overall (After Feedback) | 7.5045 | 44 | 0.63975 | .09645 | | | | |

**Significant at 0.05 level*

*Graph 4.4: Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators different Components*



From the Table 4.8 and Graph 4.4, it is clear that t-value was found to be 4.626 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Classroom Management' Component of the Teacher Educators differ significantly at 0.00 level of significance. So, the null hypothesis: 2.1(a), "*There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Classroom Management' Component of Teacher Educators before and after the feedback was given.*" was rejected at 0.00 level. As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS)on 'Classroom Management' Component after giving feedback was more than that of before feedback, thus, it can be elicited that the Teacher Educators' performance related to the 'Classroom Management' component was improved, after the feedback was given.

From the Table 4.8 and Graph 4.4, it is clear that t-value was found to be 4.485which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Feedback Component' of the Teacher Educators differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.1(b), "*There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Feedback' Component of Teacher Educators before and after the feedback was given.*" was rejected at 0.00 level. As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Feedback' Component after giving feedback was more than that of before feedback, thus, it can be elicited that the Teacher Educators' performance related to the 'Feedback' component was improved, after the feedback was given.

From the Table 4.8 and Graph 4.4, it is clear that t-value was found to be 3.422 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Communication Component' of the Teacher Educators differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.1(c), "*There will be no significant difference in the Mean Classroom Teaching-Learning*

*Based Performance Appraisal Score (CTLBPAS) on 'Communication Skills' Component of Teacher Educators before and after the feedback was given.*" was rejected at 0.00 level. As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Communication Skill' Component after giving feedback was more than that of before feedback, thus, it can be elicited that the Teacher Educators' performance related to the 'Communication' component was improved, after the feedback was given.

From the Table 4.8 and Graph 4.4, it is clear that t-value was found to be 4.058 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Interpersonal Relationship Skill' component of the Teacher Educators differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.1(d), "*There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Inter Personal Relationship' Component of Teacher Educators before and after the feedback was given.*" was rejected at 0.00 level. As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Interpersonal Relationship' Component after giving feedback was more than that of before feedback, thus, it can be elicited that the Teacher Educators' performance related to the 'Interpersonal Relationship' component was improved, after the feedback was given.

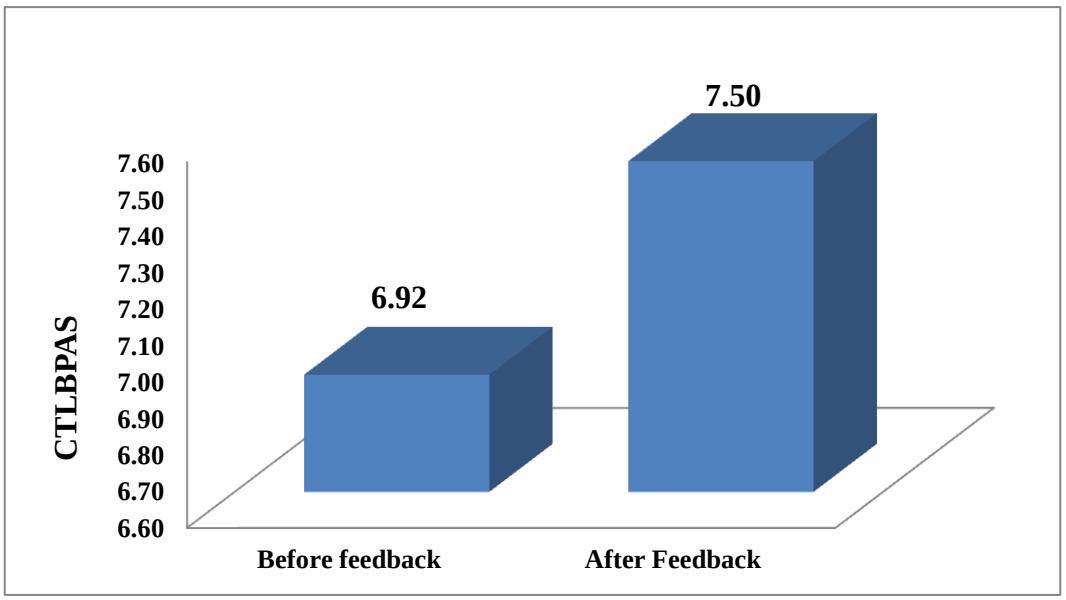
From the Table 4.8 and Graph 4.4, it is clear that t-value was found to be 4.370 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Pedagogic Skills' of the Teacher Educators differ significantly at 0.00 levels of significance. So, the null hypothesis: 2.1(e), "*There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Pedagogic Skills' Component of Teacher Educators before and after the feedback was given.*" was rejected at 0.00 level. As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on 'Pedagogic Skills' Component after giving feedback was more than that of before feedback, thus, it can be elicited that the Teacher Educators' performance related to the 'Pedagogic Skills' component was improved after the feedback was given.

While taking into consideration all the components together the overall Teacher Educator's performance before and after the feedback was given the means were compared in the light of testing the hypothesis Ho 2.1. Following Table and Graph represent the results.

**Table 4.9:** ***Sum of squares of mean, Mean square, Correlation 'r', Paired Sampled t-value, degrees of freedom (df), and level of significance of the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) with on all components***

| Source of Variation | N | MEAN | SD | SEM | df | Correlation 'r' | 't' | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| Before Feedback | 44 | 6.92 | 0.92 | 0.14 | 43 | 0.442 | 4.524 | 0.00* |
| After Feedback | 44 | 7.50 | 0.64 | 0.1 | | | | |

**Graph 4.5: Overall Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) before and after the feedback**




From the Table 4.9 and Graph 4.5, it is clear that t-value was found to be 4.524 which was significant at P-value of 0.00 (2- tailed) with df =43. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value is significant at 0.05 level (and further it was also significant at 0.00 level too). This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators differ significantly at 0.05 levels of significance. So, the null hypothesis, "*There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance*

*Appraisal Score (CTLBPAS) of Teacher Educators before and after the feedback was given.*" was rejected at 0.05 level.

As the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on all Components after giving feedback was more than that of before feedback. Thus, it can be elicited that the Teacher Educators' performance related to the all components were improved after the feedback was given. Therefore, the feedback given by Student-teachers, peers, self and Head helps in enhancing the performance of the Teacher Educators of different Teacher Education Institutions of Vadodara District.

Thus, it is evident that there was a significant effect of the feedback on the performance appraisal of the Teacher Educators with respect to each of the components and further to the overall performance of the Teacher Educators.

#### 4.2.2.5 Analysis with respect to the Objective 2.5

The Objective 2.5 of the study was, "To compare the Teacher Educators' Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) with respect to the different subjects they teach."

For comparing the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects which they teach the following null hypothesis was formulated.

*Ho 2.5:* There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects they teach. For the convenience of analysis the Null Hypothesis Ho 2.5 was further divided into the following null hypotheses.

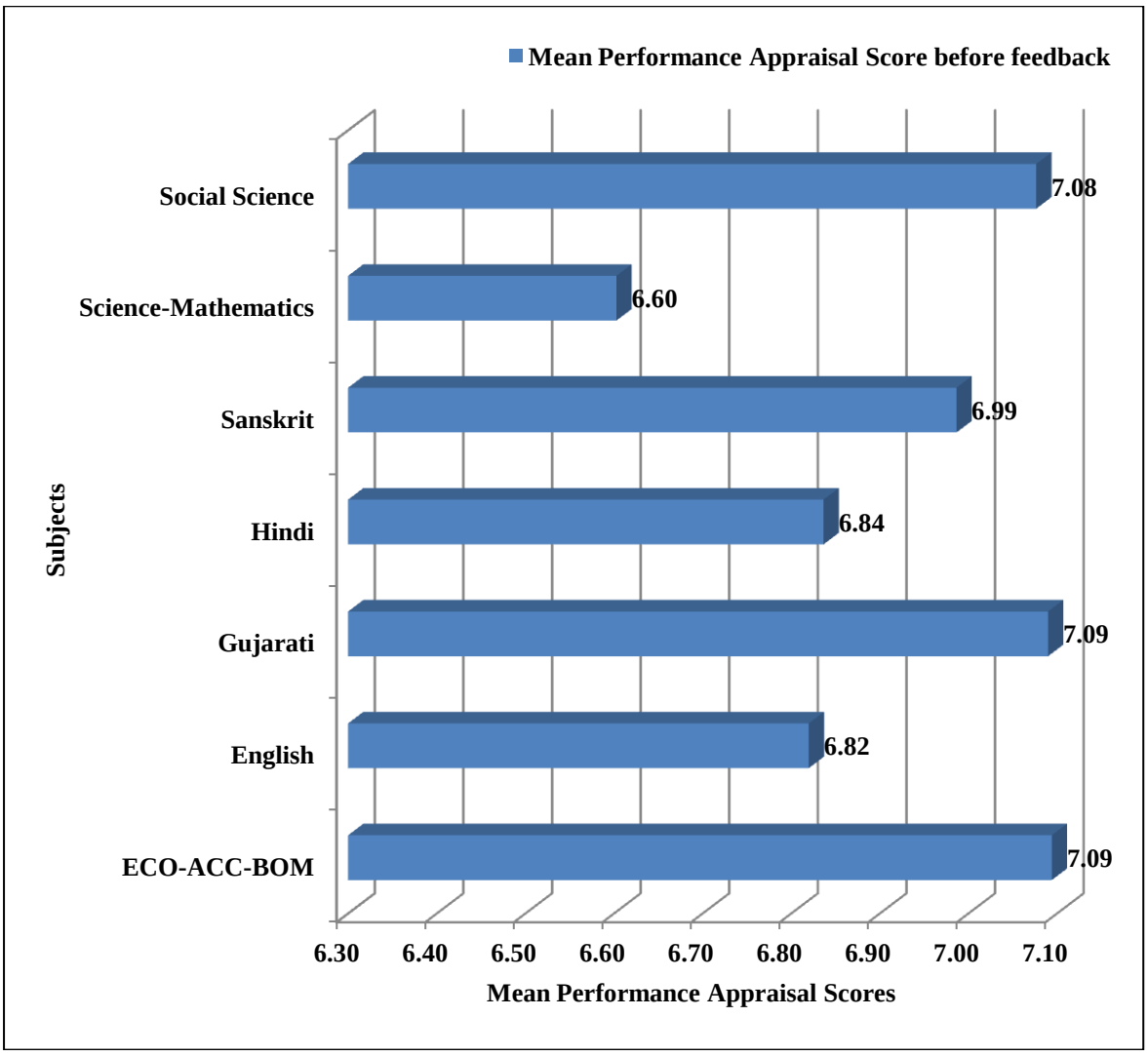
- Ho 2.5 (a): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects they teach, before the feedback was given.
- Ho 2.5 (b): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects they teach, after the feedback was given.

To test hypothesis Ho 2.5 (a) Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.10 and Graph 4.6 represent the results

**Table 4.10:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by Student Teachers, Peer, Self and Head with respect to the different subjects which they teach (Before the feedback was given)***

| Source of Variation | Sum of Squares | Df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 6.821 | 6 | 1.137 | 1.313 | 0.252 |
| Within Groups | 184.362 | 213 | 0.866 | | |
| Total | 191.182 | 219 | | | |

***Graph 4.6: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) across subjects before the feedback***



From the Table 4.10 and Graph 4.6, it is clear that F-value was found to be 1.313 which was significant at P-value of 0.252 (2- tailed) with df = (6, 213). This P-value is greater than the alpha value of 0.05, thus, the F-value was not significant at 0.05 level of significance. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators with respect to the different subjects which they teach before the feedback was given do not differ significantly. So, the null hypothesis Ho 2.5 (a), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects they teach before the feedback was given" was not rejected.

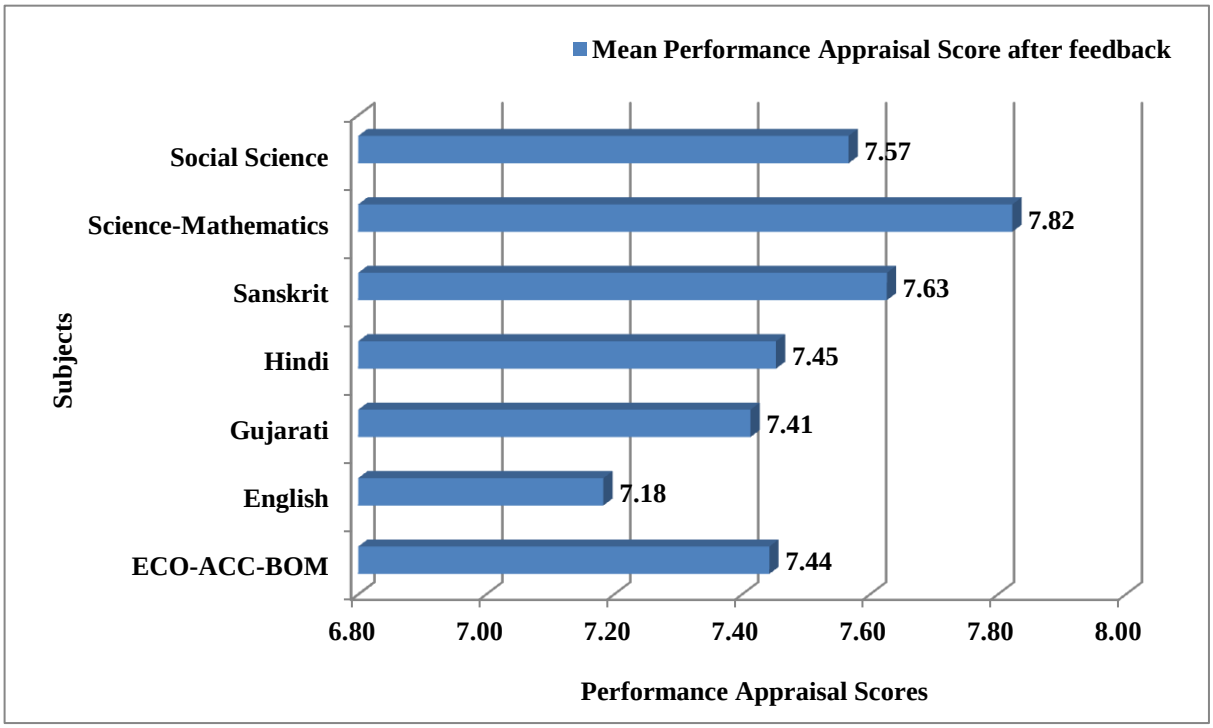
Thus, the Teacher Educators' performance on different subjects which they teach was not significantly different before the feedback was provided to them.

Further, to test hypothesis Ho 2.5 (b) Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.11 and 4.7 Graph represent the results

**Table 4.11:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by Student Teachers, Peer, Self and Head with respect to the different subjects which they teach (after the feedback was given)***

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 7.665 | 6 | 1.277 | 2.298 | .036 |
| Within Groups | 118.384 | 213 | .556 | | |
| Total | 126.048 | 219 | | | |

***Graph 4.7: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) across subjects after the feedback***




From the Table 4.11 and Graph 4.7, it is clear that F-value was found to be 2.298 which was significant at P-value of 0.36 (2- tailed) with df = (6, 213). This P-value is less than the alpha value of 0.05, thus, the F-value was significant at 0.05 level but not at 0.00 level of significance. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educators with respect to the different subjects which they teach after the feedback was given differ significantly. So, the null hypothesis Ho 2.5 (b), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to the different subjects they teach after the feedback was given" was rejected at 0.05 level of significance.

Thus, the Teacher Educators' performance on different subjects which they teach was found significantly different after the feedback was provided to them.

To find out further between which subjects made significant difference for the Performance Appraisal of the Teacher Educators, a Post hoc Fisher's Least Significant Difference (LSD) test was performed using the SPSS. Following Table 4.12 and graph 4.8 represent the results.

***Table 4.12: Post Hoc test for the Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) between different subjects which the Teacher Educators teach***

| **Multiple Comparisons** | | | | | | |
|---|---|---|---|---|---|---|
| Dependent Variable: Component Based Performance Appraisal Post score : LSD | | | | | | |
| (I) Subject | (J) Subject | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| ECO-ACC-BOM | English | .25952 | .18549 | 0.163 | -.1061 | .6252 |
| | Gujarati | .02952 | .18549 | 0.874 | -.3361 | .3952 |
| | Hindi | -.01048 | .18549 | 0.955 | -.3761 | .3552 |
| | Sanskrit | -.18381 | .18549 | 0.323 | -.5494 | .1818 |
| | **Science-Mathematics** | **-.38000*** | **.17821** | **0.034*** | -.7313 | -.0287 |
| | Social Science | -.12381 | .18549 | 0.505 | -.4894 | .2418 |
| English | Gujarati | -.23000 | .19249 | 0.233 | -.6094 | .1494 |
| | Hindi | -.27000 | .19249 | 0.162 | -.6494 | .1094 |
| | **Sanskrit** | **-.44333*** | **.19249** | **0.022*** | -.8228 | -.0639 |
| | **Science-Mathematics** | **-.63952*** | **.18549** | **0.001*** | -1.0052 | -.2739 |
| | **Social Science** | **-.38333*** | **.19249** | **0.048*** | -.7628 | -.0039 |
| Gujarati | Hindi | -.04000 | .19249 | 0.836 | -.4194 | .3394 |
| | Sanskrit | -.21333 | .19249 | 0.269 | -.5928 | .1661 |
| | **Science-Mathematics** | **-.40952*** | **.18549** | **0.028*** | -.7752 | -.0439 |
| | Social Science | -.15333 | .19249 | 0.427 | -.5328 | .2261 |
| Hindi | Sanskrit | -.17333 | .19249 | 0.369 | -.5528 | .2061 |
| | **Science-Mathematics** | **-.36952*** | **.18549** | **0.048*** | -.7352 | -.0039 |
| | Social Science | -.11333 | .19249 | 0.557 | -.4928 | .2661 |
| Sanskrit | Science-Mathematics | -.19619 | .18549 | 0.291 | -.5618 | .1694 |
| | Social Science | .06000 | .19249 | 0.756 | -.3194 | .4394 |
| Science-Mathematics | Social Science | .25619 | .18549 | 0.169 | -.1094 | .6218 |

*The mean difference is significant at the 0.05 level.

For Means of the subjects under column (I) and (J), see Table 4.13.

From the table 4.12, it was clear that a significant difference was found as far as the Performance Appraisal scores were concern between the teaching subjects of [Economics/ Accountancy/ Business Organization Management & Science/ Mathematics]; [English & Sanskrit]; [English & Science/Mathematics]; [English & Social Science]; [Gujarati & Science/ Mathematics] and [Hindi & Science/ Mathematics], after the feedback was provided to them.

Thus, it can be elicited that, after giving feedback to Teacher Educators, the

- Performance of the Teacher Educators teaching Science/ Mathematics was better than the performance of the Teacher Educators teaching Economics/ Accountancy/ Business Organization Management.
- Performance of the Teacher Educators teaching Science/ Mathematics was better than the performance of the Teacher Educators teaching English.
- Performance of the Teacher Educators teaching Sanskrit was better than the performance of the Teacher Educators teaching English.
- Performance of the Teacher Educators teaching Science/ Mathematics was better than the performance of the Teacher Educators teaching Gujarati.
- Performance of the Teacher Educators teaching Social Science was better than the performance of the Teacher Educators teaching English.
- Performance of the Teacher Educators teaching Science/ Mathematics was better than the performance of the Teacher Educators teaching Hindi.

Thus, It can be concluded that, the Performance of the Teacher Educators teaching Science/ Mathematics subject was found to be better than the Teacher Educators teaching Economics/ Accountancy/ Business Organization Management; English, Gujarati and Hindi.

On rest possible pair of the subjects there was no significant difference was found as far as the Performance Appraisal scores were concern after the feedback was provided to them.

On converging the *Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) on before and after the feedback was given, with respect to the individual subjects, the emerged scenario was also studied by testing the null hypotheses* Ho *2.5 (c) to* Ho *2.5 (i) mentioned as follows.*

- Ho 2.5 (c): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching ECO-ACC-BOM subject on before and after the feedback was given.

- Ho 2.5 (d): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching English subject on before and after the feedback was given.
- Ho 2.5 (e): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Gujarati subject on before and after the feedback was given.
- Ho 2.5 (f): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Hindi subject on before and after the feedback was given.
- Ho 2.5 (g): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Sanskrit subject on before and after the feedback was given.
- Ho 2.5 (h): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Science-Math subject on before and after the feedback was given.
- Ho 2.5 (i): There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Social Science subject on before and after the feedback was given.
- Ho 2.5 (j): There will be no significant difference in the Overall Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Different subjects on before and after the feedback was given.

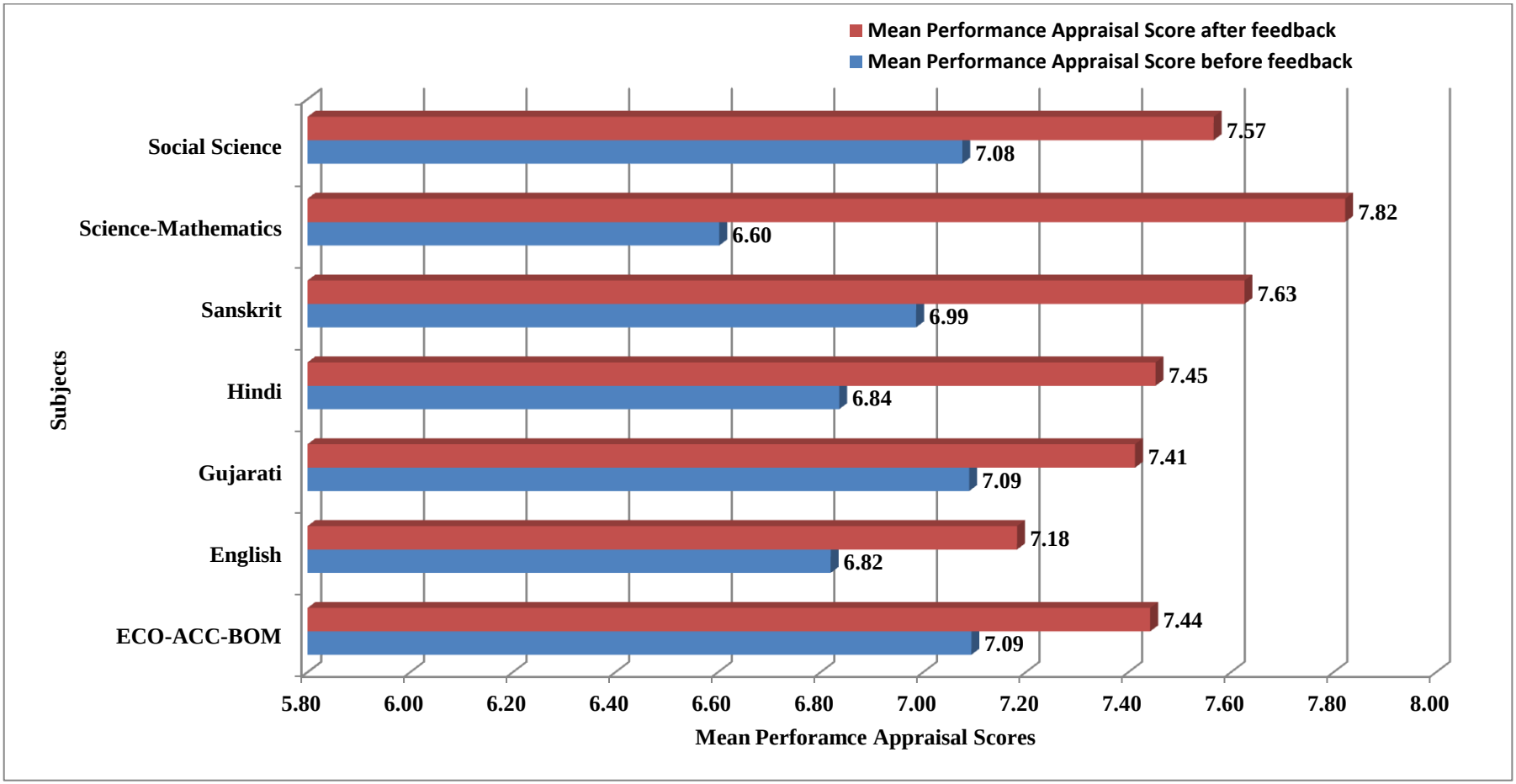
To test these hypotheses, Mean, Standard Deviation, Standard Error of Mean, Pearson Correlation coefficient ‘r’, Paired sample t-value, degrees of freedom (df), and level of significance of the scores were calculated. All these hypotheses were tested at 0.05 level of significance. Following Table 4.13 and Graph 4.8 represent the results.

**Table 4.13:** ***Mean, N, Standard Deviation, Correlation 'r', Paired Sampled t-value, degrees of freedom (df), and level of significance for Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) as assessed by Student Teachers, Peer, Self and Head with respect to the different subjects which they teach (Before and after the feedback was given)***

| Subject Pairs | | Mean | N | Std. Deviation | Std. Error Mean | df | Correlation *'r'* | t | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| Pair 1 | **ECO-ACC-BOM (Before Feedback)** | 7.0943 | 35 | .87075 | .14718 | 34 | 0.246 | 2.270 | .030 |
| | **ECO-ACC-BOM (After Feedback)** | 7.4429 | 35 | .55055 | .09306 | | | | |
| Pair 2 | **English (Before Feedback)** | 6.8200 | 30 | 1.11862 | .20423 | 29 | 0.731 | 2.580 | .015 |
| | **English (After Feedback)** | 7.1833 | 30 | .71007 | .12964 | | | | |
| Pair 3 | **Gujrati (Before Feedback)** | 7.0900 | 30 | .89340 | .16311 | 29 | 0.813 | 2.535 | .017 |
| | **Gujarati (After Feedback)** | 7.4133 | 30 | 1.19156 | .21755 | | | | |
| Pair 4 | **Hindi (Before Feedback)** | 6.8367 | 30 | .82608 | .15082 | 29 | 0.542 | 4.709 | .000* |
| | **Hindi (After Feedback)** | 7.4533 | 30 | .62903 | .11484 | | | | |
| Pair 5 | **Sanskrit (Before Feedback)** | 6.9867 | 30 | .85570 | .15623 | 29 | 0.265 | 3.824 | .001* |
| | **Sanskrit (After Feedback)** | 7.6267 | 30 | .62584 | .11426 | | | | |
| Pair 6 | **Science -Math (Before Feedback)** | 6.6029 | 35 | 1.01067 | .17084 | 34 | 0.093 | 5.651 | .000* |
| | **Science - Math (After Feedback)** | 7.8229 | 35 | .69201 | .11697 | | | | |
| Pair 7 | **Social Science (Before Feedback)** | 7.0767 | 30 | .89815 | .16398 | 29 | 0.511 | 3.351 | 002* |
| | **Social Science (After Feedback)** | 7.5667 | 30 | .67381 | .12302 | | | | |
| Overall | ***CTLBPAS (Before Feedback)*** | 6.9259 | 220 | .93433 | .06299 | 219 | 0.401 | 9.190 | .000* |
| | ***CTLBPAS (After Feedback)*** | 7.5073 | 220 | .75866 | .05115 | | | | |

***Significant at 0.05 level***

*Graph 4.8: Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) across subjects before and after the feedback*



With respect to the subject of Economics-Commerce-Business Organization Management (ECO-ACC-BOM), from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 2.270 which was significant at P-value of 0.03 (2- tailed) with df = 34. This P-value is greater than the 0.05 alpha level of Significance, thus, the t-value was not significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching ECO-ACC-BOM subject on before and after the feedback was given; do not differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (c), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching ECO-ACC-BOM subject on before and after the feedback was given." was not rejected at 0.05 level. Thus, there was no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching ECO-ACC-BOM subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching ECO-ACC-BOM subject was independent of the feedback. i.e. there was no effect of feedback on the performance of the Teacher Educators teaching ECO-ACC-BOM subject.

With respect to the Teaching Subject of English, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 2.58 which was significant at P-value of 0.015 (2-tailed) with df = 29. This P-value is greater than the 0.05 alpha level of Significance, thus, the t-value was not significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching English subject on before and after the feedback was given; do not differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (d), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching English subject on before and after the feedback was given." was not rejected at 0.05 level. Thus, there was no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching English subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching English subject was independent of the feedback. i.e. there was no effect of feedback on the performance of the Teacher Educators teaching English subject.

With respect to the Teaching Subject of Gujarati, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 2.535 which was significant at P-value of 0.017 (2-tailed) with df = 29. This P-value is greater than the 0.05 alpha level of Significance, thus, the

t-value was not significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Gujarati subject on before and after the feedback was given; do not differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (e), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Gujarati subject on before and after the feedback was given." was not rejected at 0.05 level. Thus, there was no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching Gujarati subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Gujarati subject was independent of the feedback. i.e. there was no effect of feedback on the performance of the Teacher Educators teaching Gujarati subject.

With respect to the Teaching Subject of Hindi, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 4.709, which was significant at P-value of 0.0 (2- tailed) with df = 29. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value was found significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Hindi subject on before and after the feedback was given, differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (f), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Hindi subject on before and after the feedback was given." was rejected at 0.05 level. Thus, there was significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching Hindi subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Hindi subject was dependent of the feedback. i.e. there was significant effect of feedback on the performance of the Teacher Educators teaching Hindi subject.

With respect to the Teaching Subject of Sanskrit, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 3.824, which was significant at P-value of 0.001 (2-tailed) with df = 29. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value was found significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Sanskrit subject on before and after the feedback was given, differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (g), "There will be no significant difference in

the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Sanskrit subject on before and after the feedback was given." was rejected at 0.05 level. Thus, there was significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching Sanskrit subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Sanskrit subject was dependent of the feedback. i.e. there was significant effect of feedback on the performance of the Teacher Educators teaching Sanskrit subject.

With respect to the Teaching Subject of Science-Math, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 5.651, which was significant at P-value of 0.00 (2-tailed) with df = 34. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value was found significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Science-Math subject on before and after the feedback was given; differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (h), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Science-Math subject on before and after the feedback was given." was rejected at 0.05 level. Thus, there was significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching Science-Math subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Science-Math subject was dependent of the feedback. i.e. there was significant effect of feedback on the performance of the Teacher Educators teaching Science-Math subject.

With respect to the Teaching Subject of Social Science, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 3.351, which was significant at P-value of 0.00 (2- tailed) with df = 29. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value was found significant at 0.05 level. This indicates that the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Social Science subject on before and after the feedback was given; differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (i), "There will be no significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching Social Science subject on before and after the feedback was given." was rejected at 0.05 level. Thus, there was significant difference in the Mean Classroom Teaching-Learning Based Performance Appraisal Score

(CTLBPAS) of the Teacher Educator teaching Social Science subject, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Social Science subject was dependent of the feedback. i.e. there was significant effect of feedback on the performance of the Teacher Educators teaching Social Science subject.

With respect to the all Teaching Subjects, from the Table 4.13 and Graph 4.8, it is clear that t-value was found to be 9.190, which was significant at P-value of 0.00 (2- tailed) with df = 29. This P-value is less than the 0.05 alpha level of Significance, thus, the t-value was found significant at 0.05 level. This indicates that the Overall Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching different subjects on before and after the feedback was given; differ significantly at 0.05 level of significance. So, the null hypothesis Ho 2.5 (j), "There will be no significant difference in the Overall Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of Teacher Educators teaching different Subjects on before and after the feedback was given." was rejected at 0.0 level. Thus, there was significant difference in the Overall Mean Classroom Teaching-Learning Based Performance Appraisal Score (CTLBPAS) of the Teacher Educator teaching different subjects, on before and after the feedback was given. Therefore, it can be elicited that the performance of the Teacher Educators teaching Different subjects was dependent of the feedback. i.e. Overall there was significant effect of feedback on the performance of the Teacher Educators teaching different subjects.

Conclusively, the Teacher Educators of the subjects Economics-Accountancy Business Organization Management, English and Gujarati were not benefited from the feedback, whereas the Teacher Educators teaching Hindi, Sanskrit, Science-Math and Social Science subjects were significantly improved their performance on giving feedback. But overall, there was significant effect of feedback on the performance of the Teacher Educators teaching different subjects.

### 4.2.3 Analysis with respect to Objective 3:

The third objective of the study was, *"*To study the measured performance of Teacher Educators with respect to demographic variables viz. Type of Institution, Experience, Stream, Gender, Performance Categories, Colleges, and Subjects."

To achieve this objective, the composite score of the measured performance appraisal scores of the Teacher Educators were taken into consideration. The table 4.13 depicts the

methodology of calculating the Composite Performance Appraisal Score (CPAS). The Composite Performance Appraisal Score (CPAS) was calculated with appropriate weightage to all the three categories viz. Category A, Category B and Category C by using the following formula. (Appendix—F & G)

**Composite Performance Appraisal Score (CPAS)** = 0.5*A+0.25*B+0.25*C Or

**Composite Performance Appraisal Score (CPAS)** ==0.5(0.8*$a_1$+0.2*$a_2$) +0.25*B+0.25*C

The descriptive analyses of the CPAS obtained by the Teacher Educators were depicted in the following table 4.13.

**Table 4.14: Descriptive Statistic analysis of the Composite Performance Appraisal Score (CPAS)**

| N | Min CPAS | Max CPAS | Median | Mean CPAS | Std. Deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| 44 | 5.56 | 191.12 | 22.85 | 33.68 | 36.83 | 2.62 | 7.91 |

Table 4.14 indicates the Composite Performance Appraisal Score (CPAS) of the 44 Teacher Educators from the six different Teacher Education Institutions of Baroda district. The minimum CPAS and maximum CPAS were found to be 5.56 and 191.12 respectively. The median of the CPAS was found to be 22.85 which imply that above and below this score the 50 percent of the total Teacher Educators falls.

The average CPAS of the distribution were found to be 33.68 implies this measure attained by most of the Teacher Educators.

In order to understand the distribution better, Skewness and Kurtosis of the CPAS distribution were also computed. The value for Skewness was calculated to be 2.62, indicates that the distribution of CPAS was positively skewed i.e. CPAS were massed at the lower end of the distribution (the left end) and were spread out more gradually towards the higher end i.e. the scores tend to trail off to the right or the positive end, if a curve being plotted.

The Kurtosis was calculated to be 7.91, which is greater than the standard value 0.263 of normal distribution curve. This means that the distribution is *Leptokurtic* (peaked curve) i.e. there is high concentration of score near central tendency and high tails as compared to a normal distribution.

After the analysis of the descriptive statistics about the Composite Performance Appraisal Score (CPAS) of Teacher Educators the next section presents the testing of the

hypotheses about CPAS related to different demographic variables. Under Objective 3, the following seven null hypotheses were made and tested at the 0.05 level of significance.

- *Ho 3.1: There will be no significant difference in the Mean Composite Performance Appraisal Score (CPAS) of Teacher Educators with respect to grant-in-aid and self-financed institution.*
- *Ho 3.2: There will be no significant difference in mean Composite Performance Appraisal Score (CPAS) of Teacher Educators with respect to Experience up to 5 yrs, 5-10 yrs and 10-20yrs and above 20 years.*
- *Ho 3.3: There will be no significant difference in mean Composite Performance Appraisal scores (CPAS) of Teacher Educators with respect to stream of Teacher Educator.*
- *Ho 3.4: There will be no significant difference in Mean Composite Performance Appraisal scores (CPAS) of Teacher Educators with respect to male and female.*
- *Ho 3.5: There will be no significant difference obtained Mean Composite Performance Appraisal Score by the Teacher Educators on different categories viz. Category A, Category B and Category C.*
- *Ho 3.6: There will be no significant difference among the mean Composite Performance Appraisal Score obtained by the Teacher Educator belongs to different colleges*
- *Ho 3.7: There will be no significant difference among the mean Composite Performance Appraisal Score (CPAS) obtained by the Teacher Educator with respect to different subjects they teach.*

*Ho 3.1: There will be no significant difference in the Mean Composite Performance Appraisal Score (CPAS) of Teacher Educators with respect to grant-in-aid and self-financed institution.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, Independent sample t-value, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.14, 4.15 and Graph 4.9 represent the results.

From the table 4.15 , before applying the independent sample ‘t’ test , one of the assumptions of applying ‘t’ test i.e. *homogeneity of variance* was checked through Levene's Test for Equality of Variances in the two groups. The ‘F’ value 36.630 from the *Levene's Test for Equality of Variances* was found to be significant at 0.00 level which was less than 0.05 means that the variability in two groups was not the same i.e. the scores in one condition vary much more than the scores in second condition. Put scientifically, it means that the

variability in the two groups was significantly different. Therefore, the second row of the independent sample t test was taken into consideration for interpreting the results i.e. equal variance not assumed.

**Table 4.15: Levene's test for Equality of Variances**

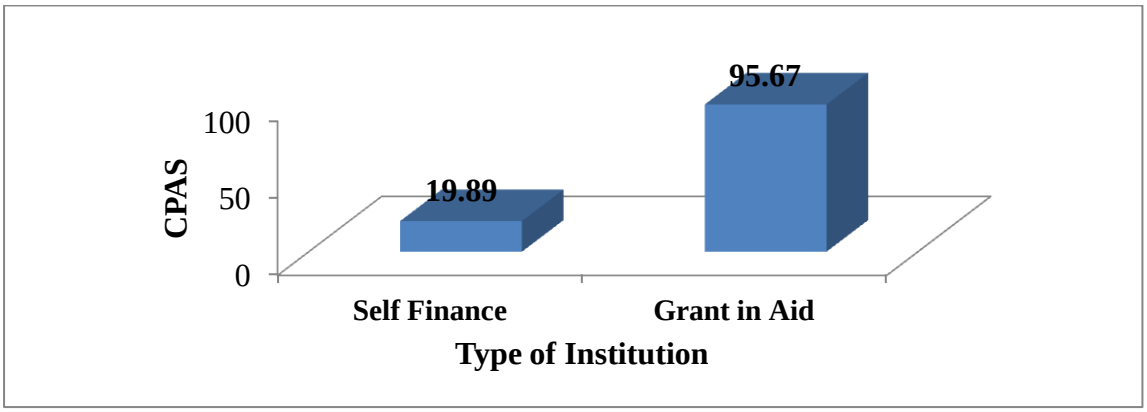
| COMBINED | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| Equal variances assumed | 36.630 | 0.00 | 8.72 | 42 | .000 | -75.77 | 8.68 |
| Equal variances not assumed | | | 4.42 | 7.174 | .003 | -75.77 | 17.13 |

The overall results from the independent sample t test was as follows

**Table 4.16:** ***Sum of squares of mean, Mean square, Correlation 'r', Independent Sampled t-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal Score (CPAS) with respect to Type of Institution***

| Type of Institution | N | MEAN | SD | SEM | df | 't' | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| Self Finance | 36 | 19.8994 | 11.36998 | 1.89500 | 7.174 | 4.42 | 0.003 |
| Grant in Aid | 8 | 95.6725 | 48.15499 | 17.02536 | | | |

**Graph 4.9:** ***Composite Performance Appraisal Score (CPAS) with respect to Type of Institution***




From the Table 4.16 and Graph 4.9, it was clear that t-value 4.42 was found to be significant at P-value of 0.003 (2- tailed) with df =7.174. This P-value is less than the 0.05 alpha level of

significance, thus, the t-value was significant at 0.05 level and further at 0.00 level too. This indicates that the Composite Performance Appraisal Score (CPAS) of the Teacher Educators of Grant in aid and Self Finance institutions differ significantly at 0.00 level of significance. So, the null hypothesis, *Ho 3.1* "*There will be no significant difference in the Mean Composite Performance Appraisal Score (CPAS) of Teacher Educators with respect to grant-in-aid and self-financed institution*" was rejected at 0.00 level.

Thus, it is evident that there is significant effect of Type of Institution on the Performance Appraisal of the Teacher Educators.

Further, the mean Composite Performance Appraisal scores of the Teacher Educators of Grant in aid institutions were found to be greater than that of the Self Finance institutions' Teacher Educators. Thus, performance of the Teacher Educators of Grant in aid institutions was more than that of Self Finance institutions' counterparts.

*Ho 3.2: There will be no significant difference in mean Composite Performance Appraisal Score (CPAS) of Teacher Educators with respect to Experience up to 5 yrs, 5-10 yrs and 10-20 yrs and above 20 years.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.16 represent the results

**Table 4.17:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal Score (CPAS) with respect to Experience categories***

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 24190.757 | 3 | 8063.586 | 9.446 | 0.000 |
| Within Groups | 34147.332 | 40 | 853.683 | | |
| Total | 58338.090 | 43 | | | |

From the Table 4.17, it is clear that F-value was found to be 9.446 which was significant at P-value of 0.00 (2- tailed) with df = (3, 40). This P-value is less than the alpha value of 0.05, thus, the F-value was significant at 0.05 level of significance. This indicates that the Composite Performance Appraisal Score (CPAS) *of* the Teacher Educators with respect to the Experience categories differ significantly. So, the null hypothesis *Ho3.2*, "*There will be no significant difference in mean Composite Performance Appraisal scores of Teacher*

*Educators with respect to Experience up to 5 yrs, 5-10 yrs and 10-20yrs and above 20 years.*" was rejected at 0.05 level.

Thus, it can be elicited that teaching experience of the Teacher Educators affects their performance significantly.

To find out further, between which categories of Experience, there is significant difference for the Performance Appraisal of the Teacher Educators, a Post hoc test Fisher's Least Significant Difference (LSD) test was performed using the SPSS. Following Tables 4.18, 4.19 and Graph 4.10 represent the results.

**Table 4.18:** ***Descriptive statistics of the Composite Performance Appraisal Score (CPAS)*** *across* ***different Categories of Teaching Experience***

| COMBINED | | | |
|---|---|---|---|
| **EXPERIENCE** | **Mean** | **N** | **Std. Deviation** |
| >=20 years | 88.8300 | 4 | 27.38609 |
| >=10 years and <20 years | 72.9800 | 3 | 39.62308 |
| >=5 years and <10 years | 40.0717 | 12 | 49.20350 |
| <5 years | 17.0656 | 25 | 9.41306 |
| Total | 33.6764 | 44 | 36.83341 |

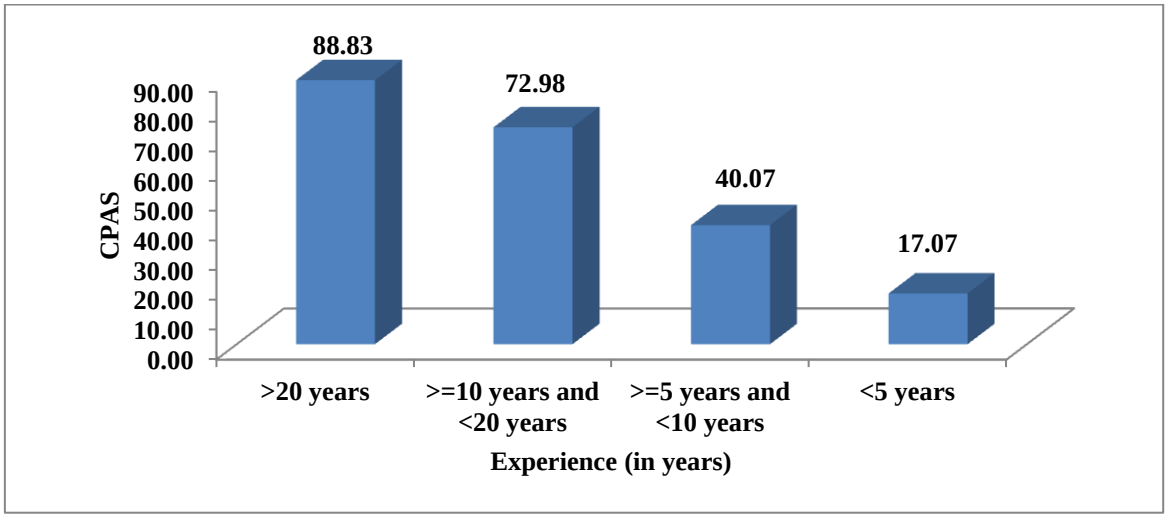
**Table 4.19:** ***Post hoc test for the Mean Composite Performance Appraisal Score (CPAS) between different Categories of Teaching Experience***

| Multiple Comparisons | | | | | | |
|---|---|---|---|---|---|---|
| Dependent Variable: CPAS | | | | Test : LSD | | |
| **(I) EXPERIENCE** | (J) EXPERIENCE | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
| | | | | | Lower Bound | Upper Bound |
| **>=20 years** | >=10 and <20 | 15.85 | 22.32 | 0.48 | -29.25 | 60.95 |
| | >=5 and <10 | 48.76* | 16.87 | 0.01* | 14.66 | 82.85 |
| | <5 | 71.70* | 15.73 | 0.00* | 39.96 | 103.56 |
| **>=10 years and <20 years** | >=5 and <10 | 32.91 | 18.86 | 0.09 | -5.21 | 71.03 |
| | <5 | 55.91* | 17.85 | 0.00* | 19.83 | 92.00 |
| **>=5 years and <10 years** | <5 | 23.01* | 10.26 | 0.03* | 2.27 | 43.74 |

*. The mean difference is significant at the 0.05 level.

*For Means of the experience under column (I) and (J), see Table 4.18.*

**Graph 4.10:** ***Composite Performance Appraisal Scores (CPAS) with respect to different categories of Experience***




From the Table 4.18, Table 4.19 and Graph 4.10, it is evident that mean Composite Performance Appraisal Score (CPAS) of Teacher Educators between the Categories of teaching experience of ( >=20 years )and (>=5 years and <10 years); (>=20 years )and (< 5 years); (>10 years and <20 years) and (<5 years); (>=5 years and <10 years) and (<5 years) were found to be significant at 0.05 level of significance.

On rest possible pair of the subjects there was no significant difference was found as far as the mean Composite Performance Appraisal scores were concern with respect to the teaching experience. Thus, it can be elicited that the Composite Performance Appraisal scores are dependent on experience i.e. teaching experience affects the teaching performance.

From the Graph 4.10 it was clear that with the increase in the teaching experience theie was a gradual increase in the CPAS. Thus, it can be elicited that with experience the performance scores of the Teacher Educators Increases. Thus, again it can be elicited that the Composite Performance Appraisal scores are dependent on experience i.e. teaching experience affects the teaching performance.

*Ho 3.3: There will be no significant difference in mean Composite Performance Appraisal scores (CPAS) of Teacher Educators with respect to stream of Teacher Educator.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (*df*), and level of significance of the scores were calculated. Following Table 4.20 represent the results.

**Table 4.20:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal scores (CPAS) with respect to stream of Teacher Educator***

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 1103.230 | 2 | 551.615 | 0.395 | 0.676 |
| Within Groups | 57234.860 | 41 | 1395.972 | | |
| Total | 58338.090 | 43 | | | |

From the Table 4.20, it was clear that F-value was found to be 0.395 which was significant at P-value of 0.676 (2- tailed) with df = 2, 41. This P-value is greater than the alpha value of 0.05, the F-value was not significant at 0.05 level of significance. This indicates that the Composite Performance Appraisal scores (CPAS) of the Teacher Educators with respect to the Streams do not differ significantly. So, the null hypothesis Ho: 3.3, "*There will be no significant difference in mean Composite Performance Appraisal scores of Teacher Educators with respect to stream of Teacher Educator*", was not rejected at 0.05 level. Therefore, it can be elicited that Performance Appraisal of Teacher Educators was found independent of Stream of Teacher Educators.

*Ho 3.4: There will be no significant difference in Mean Composite Performance Appraisal scores (CPAS) of Teacher Educators with respect to Male and Female.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, Independent sample t-value, degrees of freedom (*df*), and level of significance of the scores were calculated. Following Table 4.21, 4.22 and Graph 4.11 represent the results.

**Table 4.21: Levene's test for Equality of Variances**

| Independent Samples Test | | | | | | | |
|---|---|---|---|---|---|---|---|
| Combined | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
| Equal variances assumed | **7.772** | **.008** | 1.62 | 42 | .113 | 17.93 | 11.08 |
| Equal variances not assumed | | | 1.88 | 32.43 | .069 | 17.93 | 9.54 |

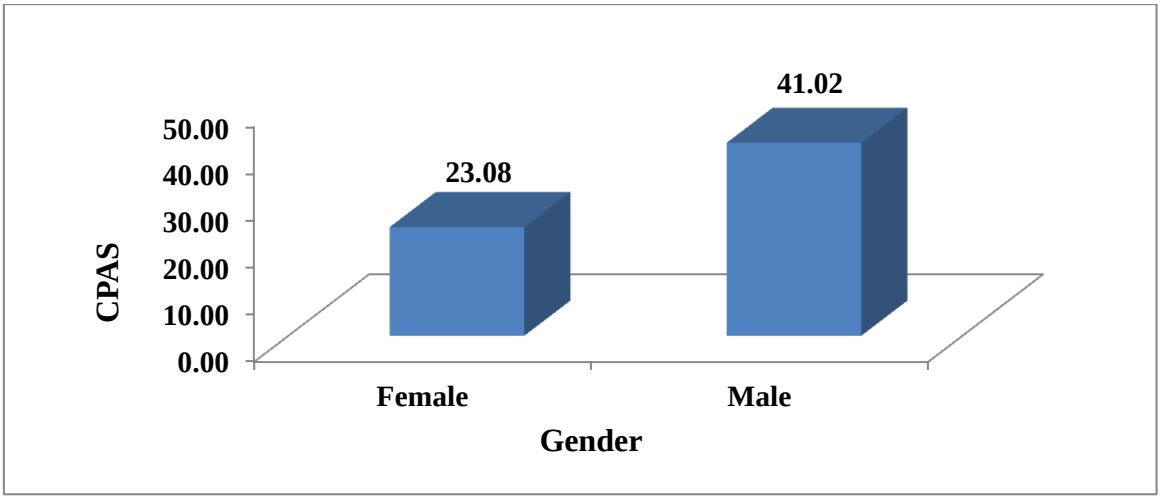
Before applying the independent sample t- test, one of the assumptions of applying t-test i.e. ***homogeneity of variance*** was checked through Levene's Test for Equality of Variances in the two groups. From the table 4.21, the 'F' value from the *Levene's Test for Equality of Variances* was found to be significant at 0.008 which was less than 0.05 means that the variability in your two groups was not the same i.e. the scores in one condition vary much more than the scores in your second condition. Put scientifically, it means that the variability in the two groups was significantly different. Therefore the second row of the independent sample t-test was taken into consideration for interpreting the results i.e. the equal variance not assumed.

The overall results from the independent sample t-test were presented in Table 4.22.

**Table 4.22:** ***Independent Sampled t-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal scores (CPAS) with respect to Gender***

| Gender | N | MEAN | SD | SEM | df | 't' | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| Female | 18 | 23.08 | 15.05 | 3.55 | 32.43 | 1.88 | .069 |
| Male | 26 | 41.02 | 45.19 | 8.86 | | | |

**Graph 4.11:** ***Composite Performance Appraisal scores (CPAS) with respect to Gender***




From the Table 4.22 and Graph 4.11, it is clear that t-value was found to be 0.069 which was significant at P-value of 0.113 (2- tailed) with df = 42. This P-value is greater than the 0.05 alpha level of significance, thus, the t-value was not significant at 0.05 level. This indicates that the Composite Performance Appraisal scores (CPAS) of the Teacher Educators do not differ significantly at 0.05 levels of significance. So, the null hypothesis, *Ho 3.4* "*There will be no significant difference in Mean Classroom Teaching-Learning Based*

*Performance Appraisal Score (CTLBPAS) of Teacher Educators with respect to male and female*" was not rejected at 0.05 level.

Thus, it is evident that there is no significant difference in the Performance of the male and female Teacher Educators with respect to all the components. Thus, Performance Appraisal of Teacher Educators was found independent of Gender of Teacher Educators.

*Ho 3.5: There will be no significant difference obtained Mean Composite Performance Appraisal Score by the Teacher Educators on different categories viz. Category A, Category B and Category C.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.23, Table 4.24, Table 4.25 and Graph 4.13 represent the results.

**Table 4.23:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal scores (CPAS)with respect to different Categories viz. Category A, Category B and Category C.***

| Source of Variation | Sum of Squares | Df | Mean Square | F | P-value Sig. (2-tailed) |
|---|---|---|---|---|---|
| Between Groups | 100320.532 | 2 | 50160.266 | 9.374 | .000* |
| Within Groups | 690283.543 | 129 | 5351.035 | | |
| Total | 790604.075 | 131 | | | |

From the Table 4.22, it was clear that F-value was found to be 9.374 which was significant at P-value of 0.000 (2- tailed) with df = 2, 129. This P-value was found to be less than the alpha value of 0.05, thus F-value was significant at 0.05 level of significance and further on 0.00 level of significance. This indicates that the mean Composite Performance Appraisal scores (CPAS) of the Teacher Educators differs with respect to the categories significantly. So, the null hypothesis Ho: 3.5, "*There will be no significant difference obtained Mean Composite Performance Appraisal Score by the Teacher Educators on different categories viz. Category A, Category B and Category C.*" was rejected at 0.00 levels. Thus, it can be elicited that the Performance of Teacher Educators were significantly different in different categories (Category A—Teaching-Learning & Evaluation, Category B— Research Publication & Guidance and Category C—Extension Institutional Growth & Community Development) of Performance Appraisal.

From the table 4.24, it was clear that the mean score of the Category C was more than the other two categories. Thus, the Teacher Educators had scored more in the Category C as compare to the other categories.

To find out further between which categories significant difference for the Performance Appraisal of the Teacher Educators was found, a Post hoc test Fisher's Least Significant Difference (LSD) test was performed using the SPSS. Following Table 4.24, 4.25 and graph 4.12 represent the results.

**Table 4.24:** ***Mean Composite Performance Appraisal scores (CPAS) on different Categories viz. Category A, Category B and Category C***

| CATEGORY | Mean | N | Std. Deviation |
|---|---|---|---|
| Category A | 11.8527 | 44 | 0.90988 |
| Category B | 32.5116 | 43 | 38.25751 |
| Category C | 77.4667 | 45 | 119.54223 |
| Total | 40.9509 | 132 | 77.68620 |

**Table 4.25:** ***Post Hoc test for the mean*** **Composite Performance Appraisal scores (CPAS)** ***between*** **different Categories viz.** ***Category A, Category B and Category C***

**Multiple Comparisons**

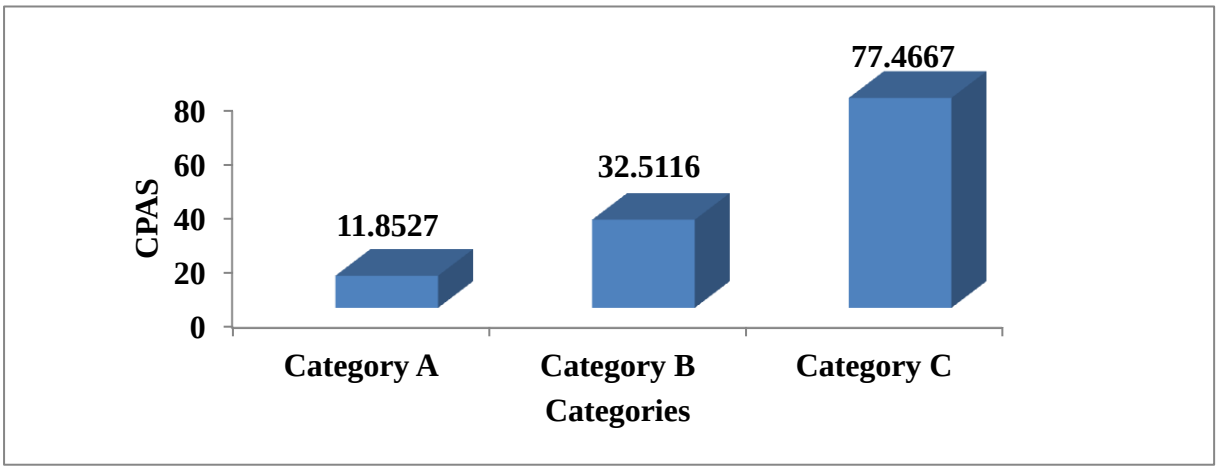
Dependent Variable: CPAS — Test: LSD

| (I) CATEGORY | (J) CATEGORY | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Category A | Category B | -20.65 | 15.68 | .190 | -51.69 | 10.37 |
| | Category C | -65.61* | 15.50 | .000* | -96.29 | -34.92 |
| Category B | Category C | -44.95* | 15.59 | .005* | -75.82 | -14.09 |

** Significant at 0.05 level*

*For Means of the category under column (I) and (J), see Table 4.24.*

***Graph 4.12: Composite Performance Appraisal scores (CPAS) with respect to different categories***




From the Table 4.24, Table 4.25 and Graph 4.12 it was clear that the mean Composite Performance Appraisal Score (CPAS) on Category A and Category C were found to be significantly different at 0.00 level of significance.

Also mean Composite Performance Appraisal Score (CPAS) on Category B and Category C was found to be significant different at 0.005 level of significance. But mean Composite Performance Appraisal Score on Category A and Category B was not found to be significantly different at 0.05 level of significance.

Thus, it can be elicited that the Teacher Educators were found to be more scoring on the Category C rather than the category A and Category B.

*Ho 3.6: There will be no significant difference among the mean Composite Performance Appraisal Score obtained by the Teacher Educator belongs to different colleges*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.26, 4.27 and Graph 4.13 represent the results

**Table 4.26:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal scores (CPAS) with respect to different colleges***

| Source of Variation | **Sum of Squares** | **df** | **Mean Square** | **F** | **P-value Sig. (2-tailed)** |
|---|---|---|---|---|---|
| **Between Groups** | 38249.379 | 5 | 7649.876 | 14.471 | .000* |
| **Within Groups** | 20088.711 | 38 | 528.650 | | |
| **Total** | 58338.090 | 43 | | | |

** Significant at 0.05 level*

From the Table 4.25, it was clear that F-value was found to be 14.471 which was significant at P-value of 0.000 (2- tailed) with df = (5, 38). This P-value was found to be less than the alpha value of 0.05, thus F-value was significant at 0.05 level of significance and further on 0.00 level of significance. This indicates that the mean Composite Performance Appraisal scores (CPAS) of the Teacher Educators differs with respect to the different colleges significantly. So, the null hypothesis *Ho3.6*, "*There will be no significant difference obtained Mean Composite Performance Appraisal Score (CPAS) by the Teacher Educator belongs to different colleges.*" was rejected at 0.00 level. Thus, there was a significant difference in the performance of the Teacher Educators with respect to different colleges.

To find out further between which Colleges significant difference for the Performance Appraisal of the Teacher Educators was found, a Post hoc test Fisher's Least Significant Difference (LSD) test was performed using the SPSS. Following Table 4.27, Table 4.28 and Graph 4.13 represent the results.

**Table 4.27:** ***Descriptive statistics of the Composite Performance Appraisal scores (CPAS) for different colleges***

| Sr.No. | College | Type of Institution | Mean | N | Std. Deviation |
|---|---|---|---|---|---|
| 1 | S.D. Patel B.Ed. College | Private | 15.8186 | 7 | 8.29335 |
| 2 | Axar Mahila B.Ed. College | Private | 24.2913 | 8 | 12.36847 |
| 3 | Dabhoi B.Ed. College | Grant-in-Aid | 95.6725 | 8 | 48.15499 |
| 4 | Sanskar B.Ed. College, Khatamba | Private | 24.6571 | 7 | 14.73764 |
| 5 | Sanskarbharti B.Ed. College, Savali | Private | 20.0443 | 7 | 10.20496 |
| 6 | Pipariya B.Ed. College | Private | 14.0586 | 7 | 8.61026 |
| **Total** | | | **33.6764** | **44** | **36.83341** |

**Graph 4.13:** ***Composite Performance Appraisal scores (CPAS) between*** **different** ***colleges***

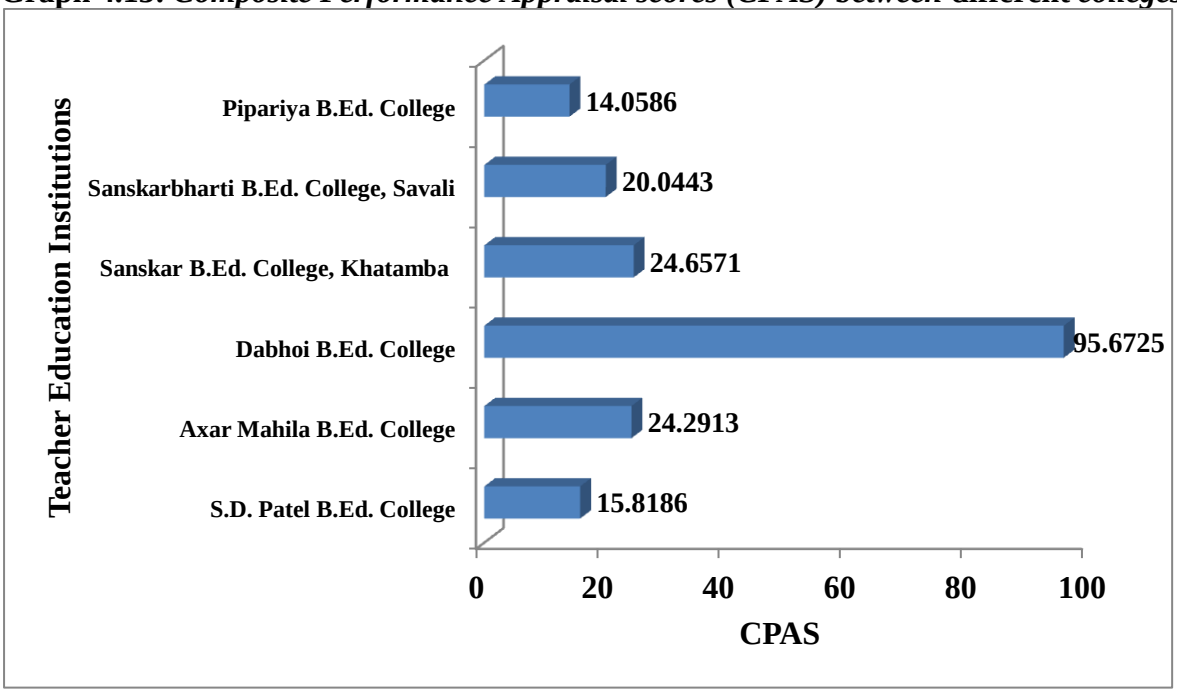



**Table 4.28:** ***Post Hoc test for the Composite Performance Appraisal scores (CPAS) between*** **different** ***colleges***

**Multiple Comparisons**

| **Dependent Variable: CPAS** | | | | | **TEST: LSD** | |
|---|---|---|---|---|---|---|
| **(I) College Name** | **(J) College Code Name** | **Mean Difference (I-J)** | **Std. Error** | **Sig.** | **95% Confidence Interval** | |
| | | | | | **Lower Bound** | **Upper Bound** |
| S.D. Patel B.Ed. College | Axar | -8.47268 | 11.89970 | .481 | -32.5624 | 15.6170 |
| | Dabhoi | -79.8539* | 11.89970 | .000 | -103.9436 | -55.7643 |
| | Khatamba | -8.83857 | 12.28995 | .476 | -33.7183 | 16.0411 |
| | Savali | -4.22571 | 12.28995 | .733 | -29.1054 | 20.6540 |
| | Pipariya | 1.76000 | 12.28995 | .887 | -23.1197 | 26.6397 |
| Axar Mahila B.Ed. College | Dabhoi | -71.3813* | 11.49620 | .000 | -94.6541 | -48.1084 |
| | Khatamba | -.36589 | 11.89970 | .976 | -24.4556 | 23.7238 |
| | Savali | 4.24696 | 11.89970 | .723 | -19.8427 | 28.3366 |
| | Pipariya | 10.23268 | 11.89970 | .395 | -13.8570 | 34.3224 |
| Dabhoi B.Ed. College | Khatamba | 71.01536* | 11.89970 | .000 | 46.9257 | 95.1050 |
| | Savali | 75.62821* | 11.89970 | .000 | 51.5385 | 99.7179 |
| | Pipariya | 81.61393* | 11.89970 | .000 | 57.5243 | 105.7036 |
| Sanskar B.Ed. College, Khatamba | Savali | 4.61286 | 12.28995 | .709 | -20.2669 | 29.4926 |
| | Pipariya | 10.59857 | 12.28995 | .394 | -14.2811 | 35.4783 |
| Sanskarbharti B.Ed. College, Savali | Pipariya | 5.98571 | 12.28995 | .629 | -18.8940 | 30.8654 |

* Significant at 0.05 level

*For Means of the colleges under column (I) and (J), see Table 4.27.*

From the Table 4.27, Table 4.28 and Graph 4.13, it was emerged clearly that the performance of the Teacher Educators of the Dabhoi B.Ed. College differs significantly from all the other Teacher Educators. It can also be elicited that the performance of the Teacher Educators of the Grant-in-Aid college i.e. Dabhoi B.Ed. College found significantly more than the Teacher Educators of the Private B.Ed. Colleges.

*Ho 3.7: There will be no significant difference among the mean Composite Performance Appraisal Score (CPAS) obtained by the Teacher Educator with respect to different subjects they teach.*

To test this hypothesis, Mean, Standard Deviation, Standard Error of Mean, ANOVA, degrees of freedom (df), and level of significance of the scores were calculated. Following Table 4.29 represent the results.

**Table 4.29:** ***Sum of squares of mean, Mean square, F-value, degrees of freedom (df), and level of significance of the Composite Performance Appraisal scores (CPAS) with respect to different subjects they teach***

| Source of Variation | Sum of Squares | Df | Mean Square | F | **P-value Sig. (2-tailed)** |
|---|---|---|---|---|---|
| Between Groups | 14678.58 | 6 | 2446.43 | 0.394 | 0.882 |
| Within Groups | 775925.48 | 125 | 6207.40 | | |
| Total | 790604.07 | 131 | | | |

From the Table 4.29, it was clear that F-value was found to be 0.394 which was significant at P-value of 0.882 (2- tailed) with df = 5, 125. This P-value was found to be less than the alpha value of 0.05, thus F-value was not significant at 0.05 level of significance. This indicates that the mean Composite Performance Appraisal Scores of the Teacher Educators do not differs with respect to the subjects they teach. So, the null hypothesis Ho: 3.7, "*There will be no significant difference obtained Mean Composite Performance Appraisal Score (CPAS) by the Teacher Educator belongs to different subjects they teach.*" was not rejected. Thus, the performance of the Teacher Educators was found independent of the Subject they teach.

### 4.2.4 Analysis with respect to Objective 4:

*The fourth objective of the study was "*To study the correlation between Performance Appraisal Score of the Teacher Educators and Student-teachers assessment of the Performance of the Teacher Educators." For this objective the following null Hypothesis was tested.

*Ho 4.1: There will be no significant correlation between the Composite Performance Appraisal Scores (CPAS) of the Teacher Educators and Student-teachers assessment scores of the Performance of the Teacher Educators.*

To test this hypothesis, Pearson Correlation Coefficient 'r' and level of significance of the scores were calculated for the Composite Performance Appraisal Score and that of the Student-teacher's assessment of the performance of the Teacher Educators. For this the Student-teacher's assessment of the performance of the Teacher Educators scores of after feedback was taken into consideration. Following Table 4.30 represent the results.

**Table 4.30:** ***Correlation coefficient 'r' between Student-teachers Assessment and Teacher Educators' CPAS and level of significance***

| Pair | N | Pearson Correlation | P-value Sig. (2-tailed) |
|---|---|---|---|
| *Student-teaches' Assessment and Teacher Educators' CPAS* | 44 | -0.107 | 0.489 |

From the table 4.30, it was clear that the correlation coefficient 'r' between Student-teachers Assessment and Teacher Educators' CPAS was found to be -0.107 (negatively correlated) which was significant at p-value of 0.489. This p-value is greater that the alpha level of 0.05. Thus, the null hypothesis, *"There will be no significant correlation between the Composite Performance Appraisal Score of the Teacher Educators and Student-teachers assessment of the Performance of the Teacher Educators"* was not rejected. Thus, there was no correlation between the scores of Performance Assessment by Student-teachers' and Teacher Educators' CPAS.

The presented data analysis and data interpretation helped to give a comprehensive and elaborative picture of the study. Hence, in the next chapter V, an attempt has been made to provide the clear results and idea about study through major findings followed by discussion.