

Comparison of Supervisor Feedback with Other Type of Feedback Interventions in Pre-Service Education

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Abstract- The quality of pre-service teacher-education programme depends upon the quality of teaching skills developed among the student teachers. The cultural, social and technological development of any nation depends on the competence level of its teachers. Thus systematic approach is to be adopted in the teaching programme imparting teaching skills to the student teachers using different type of feedback interventions. These feedback interventions help the student teachers to gain knowledge about their behaviour or performance in order to modify it in a desirable way. This study is an attempt to evaluate the effectiveness of supervisor feedback in comparison to student feedback and peer feedback in developing teaching competence among student teachers. The 10% of student teachers trained through student feedback move from average to high performance category in their post-test BGTC scores in comparison to pre-test scores and there was no change in level of performance of student teachers trained through peer feedback. The 20% of student teachers trained through supervisor feedback move from average to high performance category in terms of post-test BGTC scores in comparison to pre-test scores. It has been found that mean gain in the teaching competence was highest among the student teachers trained by supervisor feedback and least among the student teachers trained by peer feedback. The product moment coefficient of correlation between cognitive-based-competence and performance-based-competence for student teachers trained through student feedback, peer feedback and supervisor feedback have found to be 0.370, 0.389 and 0.687 respectively.

Keywords— Supervisor feedback, peer feedback, student feedback, teaching competence, teaching skills.

I. INTRODUCTION

The education improvement and reconstruction in pre-service education of teachers play a crucial and critical role. Student teaching is most important part of pre-service teacher education programme. The quality of pre-service teacher-education programme depends upon the quality of teaching effectiveness for turning out teachers who will pave more effective both inside and outside the classroom in moulding the future generation, student teaching has necessarily to become more effective. Teaching is four phased process: (i) Curriculum Planning - helping to formulate the goals of education (ii) Instructing - creating intentions regarding the strategies and tactics of instructions (iii) Measuring - creating or selecting devices to measure student learning (iv) Evaluating - using feedback to evaluate the appropriateness of objectives, the effectiveness of instructions, the validity and reliability of measurement. The effective student teaching programme helps to make competent teachers who pave the way for an enlightened society. Student teaching is an ideal opportunity for directing student teachers towards the development of self-analyses and self-improvement.

The training of student teachers demands our urgent attention. The teacher training programme should be designed in such a way in pre-service education so that student teachers acquire basic teaching skills and become competent teacher. The improvement in the competence level of student teachers is an important part of training programme. But unfortunately performance level of student teacher does not show any

improvement with the present training programme. The skills and competencies can be developed. The microteaching based training programme can be implemented in pre-service education to develop teaching skills among student teachers with the help of appropriate types of feedback. The term feedback stands for a sort of mechanism to provide to an individual or group of individuals about its behaviour or performance in order to modify it in a desirable way. This information help in knowing the strengths and weaknesses related to the working of an individual, group of individuals, or a system. Thus one can bring desired behavioural modification in one's working and improve one's performance in response to the related information received from others.

Feedback may take many shapes & styles depending upon its sources, and the time as well as mode of providing such feedback. Feedback is broadly classified into two categories on the basis of source of feedback as (a) Feedback by self (b) Feedback by others. Feedback by self is that feedback which is provided by the individual or the system itself for self correction and improvement. Feedback by others is feedback provided by others than self like peers, colleagues, co-workers, students, teachers and supervisors etc. It is further sub classified into three broad categories as follows: (i) Student Feedback: Pupils are real critic of their teachers. Students can analyse and evaluate the teacher's performance in terms their ease of grasping new knowledge out of the content delivered by the teacher. It is also necessary form the psychological point of view, since the teachers are trained to

teach students and hence the feedback provided by the students to their teachers will add positively to their classroom effectiveness. The basic drawback of this source of feedback is that as the pupils are professionally not well equipped, their feedback is over looked by the student teachers as they think that pupils do not have enough foresight to provide effective feedback. (ii) Peer Feedback: For providing the psychological base to learning situations fellow student teacher can also be used as the source for providing feedback. This type of feedback is termed as "peer feedback". (iii) Supervisor Feedback: Supervisors are the main sources of providing feedback. Here an experienced, competent, qualified and mature teacher educator provides feedback.

The competency is the ability to apply to practical situations the essential principles and techniques of particular subject matter field and can be described as a set of knowledge, skills, abilities and behavioural attributes which are required to deliver superior performance. Teaching competence is the ability of a teacher manifested through a set of overt teacher classroom behaviours which is a resultant of the interaction between the presages product variables of teaching within a social setting. A competent teacher has a role to play as a friend, philosopher and guide and secure the co-operation of society, co-workers, officials and so on in the discharge of his duties and for the achievement of the desired results i.e. a competent teacher helps the students to acquire and assimilate new set of knowledge.

McCullum and Due (1970) made an effort to avoid artificial situations through the elementary programmes for the inner city teachers of the Temple University for the preparation of elementary teachers from undergraduates. They used micro teaching to add the needed dimension of reality. The second aim was to bring about a change in the teacher's role in the social studies classroom. They found that the student teachers reacted more positively to their micro teaching method courses. The 'Traditional Texts' did not present life realistically in the classroom. Micro teaching provides the university student with some other expertise needed to enter student-teaching. In fact, micro teaching makes the method courses more relevant in terms of the needed skills and behaviours demanded by the student-teacher.

Dosajh (1974) carried out a preliminary try-out of micro teaching as a modifier of teacher behaviour. A teacher of local higher secondary school gave a lesson to five students for 15 minutes. His performance was televised in an adjoining room where a group of 20 observers judged his performance on a specially designed performa. The performance of teacher was played back to him in the presence of a teacher-educator who focused his attention on points, which needed improvement. The teacher was asked to prepare his lesson again in about 15 minutes and to deliver it to a group of five students. The same observer evaluated this second lesson on the second copy of the same Performa. The teacher showed an all round improvement in all areas.

Kloeden & McDonald (1981) conducted a study on obtaining student feedback for the improvement of an external mathematics course. They used short questionnaires based on major difficulties experienced by the students. These questionnaires do not require large resources and time.

It encouraged students to understand the rationale of the course and increases their interest and improves their communication about difficulties in understanding the course. Gandhi (1982) worked to find the teaching styles of student teachers exposed to micro teaching approach and traditional approach. The study was aimed to find the teaching styles of student teachers receiving micro teaching. A sample 34 student teachers equally divided into control and Experimental group on the basis of sex, age, qualification, experience, methods of teaching & I.Q. The results of the study indicated that micro teaching experiences did not have a significant effect on student teachers performance measured in terms of teaching styles.

Bawa (1984) worked on effectiveness of micro teaching with planned integration training following summative model & micro teaching without planned integration training on the general teaching competence of teacher trainees. The main objectives of the study were to assess whether training through micro teaching brings about substantial changes in the teaching competence of student teachers and to find the teaching competence of student teachers, who teach after systematic instructional training subsequent to micro teaching. The results of the study showed that exposure to micro teaching results in improving the teaching competence & this improvement was accounted for appropriateness of objectives, selection of content, explanation & pupils participation. Also exposure to integration based instruction subsequent to micro teaching based training improves their teaching competence and helps them to increase their ability to integrate various teaching skills effectively.

Cano (1992) administered the Group Embedded Figures Test and a teaching style inventory to 25 pre-service agriculture teachers. The results of the study showed (1) field-independent learners achieved higher scores in methods courses; (2) those preferring more sensitive teaching styles achieved higher microteaching scores; (3) the inclusion teaching style preference not influenced the teaching using the problem-solving approach. Tzetzis et al. (1997) depicted that goal setting and feedback are the important factors for acquiring physical skills. They proposed that feedback does not lead to any improvement in performance if it is separated from goals. They randomly assigned boys to three groups to examine knowledge of performance (KP) alone, knowledge of results with goal setting (KRG) and knowledge of performance and results with goal setting (KPRG) for the acquisition of basketball skills. They found that KP group showed performance improvement on complex skills whereas KRG group enhanced performance on simple skills. On the other hand KPRG group improved the most. Thus for better results in any type of coaching instruction, feedback has to be implicitly or explicitly related goal(s).

Rauch and Whittaker (1999) studied perceptions of pre-service teachers' regarding peer observation and feedback during student teaching. Students had positive attitudes about peer observation and feedback for improving their teaching. They felt more comfortable while working with peers and their experience of evaluating a peer was valuable.

Most students found that quality & content of peer feedback leads to improvement of their own teaching. Butler (2001) investigated music education majors' concept maps that

focused on teacher effectiveness. He explained how students created the concept maps after two microteachings and concluded that the combination of concept maps and microteaching may be beneficial. Bridges et al. (2002) proposed that the teacher can evaluate the effectiveness of their teaching effort by the assessment of students. Bullough et al. (2003) compared peer teaching with traditional teaching and proposed that peer teaching had a positive impact and student teachers would have increased support & discussion about teaching.

Richardson (2005) reviewed the research evidence concerning the use of formal instruments to measure students' evaluations of their teachers, students' satisfaction with their programmes and students' perceptions of the quality of their programmes. He used questionnaires for determining the quality of teaching, to enhance the quality of teaching and for providing information about course units/ programmes to prospective students. He concluded by discussing several issues affecting the practical utility of the instruments that student feedback. Although many teachers and institutions have opinion that the student feedback is useful to improve the quality of teaching learning process yet they are not able to implement it due to number of reasons. Rubin (2006) suggested developmental peer feedback as a method for providing students with individual feedback critical to the learning process. He pointed out that faculty members were reluctant to employ peer feedback citing fear of student responses, student feedback capabilities, unfamiliarity with the process, and time constraints in and outside of class. A peer feedback intervention creates mutually beneficial outcomes for both faculty and students. Students build feedback capacity to improve project quality while faculty members provide feedback to enhance learning among students.

Hendry et al. (2007) evaluated the relationship between teacher's approaches to teaching and responses to qualitative student feedback in a problem-based medical program. It had been found that the teachers incorporated changes to their teaching in response to students' suggestions on some of the instances. The student teaching programme is quite useful for student teachers as it promotes interaction between student teachers and supervisor and student teachers can make use of the expertise of supervisors (He, 2009; Nguyen, 2009). The inputs provided by the supervisor in the student teaching programme strengthen the bonds between theoretical knowledge and practical training (Bower and Bennett, 2009). Sadler (2010) proposed that during peer feedback, the quality of their peers' work is judged by peers, and they are explicitly dealing with the underlying learning objectives, evaluation principles, and alternative ways of solving problem/task. This will lead to a greater comprehension about the learning materials and outcomes. Kearney (2013) stressed on the need to implement authentic self and peer assessment into a pre-service teacher education course as traditional assessment techniques are not fulfilling the learning requirements in the present era. Clarke et al. (2014) proposed that the supervisors generate new way of thinking among student teachers in teacher preparation programme.

Schneider & Preckel (2017) projected that the peer feedback is useful technique to support learning in higher education

because by using this they can regulate their learning processes by themselves. Mandouit (2018) supported student feedback as a valuable tool for improving teaching competence and provides powerful stimulus for teacher reflection. Student feedback is useful for the teachers to increase the effectiveness of their practical skills and identify areas for their future professional learning.

Burgermeister et al. (2021) proposed that repeated peer feedback helps student teachers to attain higher self-efficacy with regard to gauging learning strategies and conferring feedback to their peers. Chawla (2022) proposed that the supervisor feedback is useful for the student teachers to make the required modification in their behaviour for acquisition of particular microteaching skill. This method of skills development under microteaching framework will in the long run contribute towards professional growth of student teachers and building of nation through effective teaching in schools. Chu, 2021 depicted the usefulness of supervisor feedback for the pre-service teachers to teach and develop their identity as teacher during the teacher training programme.

The present study is an attempt to evaluate the usefulness of supervisor feedback in developing teaching skills and thereby teaching competence among student teachers in comparison to student feedback and peer feedback. The specific objectives of the study were: (i) To determine the effect of different type of feedback interventions on the level of performance of student teachers. (ii) To ascertain the effect of different feedback interventions on the general teaching competence of student teachers. (iii) To assess the relationship between cognitive-based-competence and performance-based-competence of student teachers trained through different feedback interventions. The above mentioned objectives were evaluated by using following hypothesis:

1. There is no change in the level of performance of the student teachers trained through different type of feedback interventions.
2. There is no effect of different feedback interventions on the general teaching competence of student teachers.
3. There is no relationship between cognitive-based-competence and performance-based-competence of student teachers trained through different feedback interventions.

II. METHODOLOGY

Design & Sample

The study was conducted by using parallel group (with randomized matched subjects) pre-test post-test design. The sample of 30 student teachers of D.A.V. College of Education, Hoshiarpur was selected from 299 students enrolled for B.Ed. out of which 229 were female & 70 were male. The sample consisted of 18 female and 12 male student teachers. The sample was randomly divided into three groups i.e. EB-I, EB-II and EB-III, each group consisted of 10 student teachers out of which 6 were female & 4 were male. Group EB-I was trained by providing student feedback, group EB-II was trained by providing peer feedback and group EB-III trained by providing supervisor feedback. While grouping of student

teachers randomly into different groups they were matched in terms of mean & standard deviation of four extraneous variables i.e. marks obtained in B. Ed. entrance test, Teaching Learning Process paper marks, Percentage of marks in graduation & Index of Academic Motivation (JIM Scale). The dependent variable was teaching competence and the independent variable was type of feedback intervention i.e. student feedback, peer feedback and supervisor feedback. The five teaching skills i.e. Skill of Introducing the Lesson (ITL), Skill of Explanation (E), Skill of Probing Questions (PQ), Skill of Stimulus Variation (SV) & Skill of Blackboard Writing (BW) were developed among the student teachers with the help of different types of feedback intervention.

Tools Used

The tools as described by Chawla & Thukral, 2011 used in this study were: Baroda General Teaching Competence (BGTC) Scale; Observation Schedule cum Rating Scale for the Skill of Introducing the Lesson; Observation Schedule cum Rating Scale for the Skill of Explanation; Observation Schedule cum Rating Scale for the Skill of Probing Questioning; Observation Schedule cum Rating Scale for the Skill of Stimulus Variation; Observation Schedule cum Rating Scale for the Skill of Black Board Writing; Standardized questionnaire for student teachers to evaluate their cognitive aspect.

Data Collection

The cognitive based competence of student teachers was determined by administering the questionnaire. Subsequently BGTC Scale was applied on each student teacher as pre test to obtain initial scores of teach. After this the concept of microteaching, teaching skills, and components of selected teaching skills were taught in detail to all the student teachers. Subsequently each student was asked to prepare the two micro lesson plans each for the two teaching subjects adopted by him/her of about six minutes for each of the selected skill. In this way 20 micro lessons were prepared by each student teacher. Each student teacher of the group EB-I, EB-II and EB-III was trained respectively by student feedback, peer feedback and supervisor feedback in five selected teaching skills using a micro lesson plan for each skill for each teaching subject by following standard microteaching cycle. The total final score obtained by the student teacher in all the teaching skills is divided by the maximum total score (224) of all the five teaching skills and then multiplied by 100 to calculate overall efficiency of using the selected teaching skills. The BGTC Scale was reapplied as post-test to determine teaching competence of each student teacher.

Statistical Analysis

The data was analysed by mean & standard deviation to quantify the competence. The effect of student feedback, peer feedback and supervisor feedback on teaching competence of

student teachers was evaluated by product moment coefficient of correlation, Stanine scale.

III. RESULTS AND DISCUSSION

The analysis & interpretation of Level of Performance of the student teachers trained through student feedback, peer feedback and supervisor feedback was done with the help of pre-test & post-test BGTC scores of the student teachers of the group EB-I, EB-II and EB-III respectively using Stanine Scale. The comparison of the level of performance of student teachers trained through different types of feedback is ascertained by converting their pre-test & post-test BGTC raw scores into stanine scores. Figure 1 respectively represents the percentage of student teachers belonging to three different levels of performance i.e. Low, Average and High in terms of their pre-test & post-test score of group EB-I, EB-II and EB-III graphically.

From Fig. 1 it has been found that the 10% of the student teachers trained through student feedback (Group EB-I) move from average to high performance category in their post-test BGTC scores in comparison to pre-test scores and there was no change in percentage of student teachers showing low performance. There was no change in level of performance of student teachers trained through peer feedback (Group EB-II) rated on Stanine Scale in terms of pre-test & post-test BGTC scores. It has been also found that from Figure 1 that the 20% of the student teachers trained through supervisor feedback (Group EB-III) move from average to high performance category in terms of post-test BGTC scores in comparison to pre-test scores. There was no change in percentage of student teachers showing low performance for supervisor feedback. Thus the stated Hypothesis 1, "There is no change in the level of performance of the student teachers trained through different type of feedback interventions" is rejected in the light of above discussion. It is further concluded that out of the three feedback interventions supervisor feedback found to be most effective in changing the level of performance of student teachers measured in terms of BGTC score while peer feedback is least effective.

The second hypothesis of the study was tested by measuring pre-test and post-test BGTC scores of the student teachers of group EB-I, EB-II and EB-III. The mean pre-test & post-test BGTC scores was calculated which had been found to be 82.20 & 93.40, 83.70 & 93.50 and 80.10 & 102.30 respectively for group EB-I, EB-II and EB-III. The standard deviation for pre-test & post-test BGTC scores was also calculated which had been found to be 12.66 & 13.48, 13.53 & 15.50 and 11.39 & 13.50 respectively for group EB-I, EB-II and EB-III. Figure 2 shows the impact of student feedback, peer feedback and supervisor feedback on general teaching competence of student teachers in terms of their pre-test & post-test scores on BGTC scale.

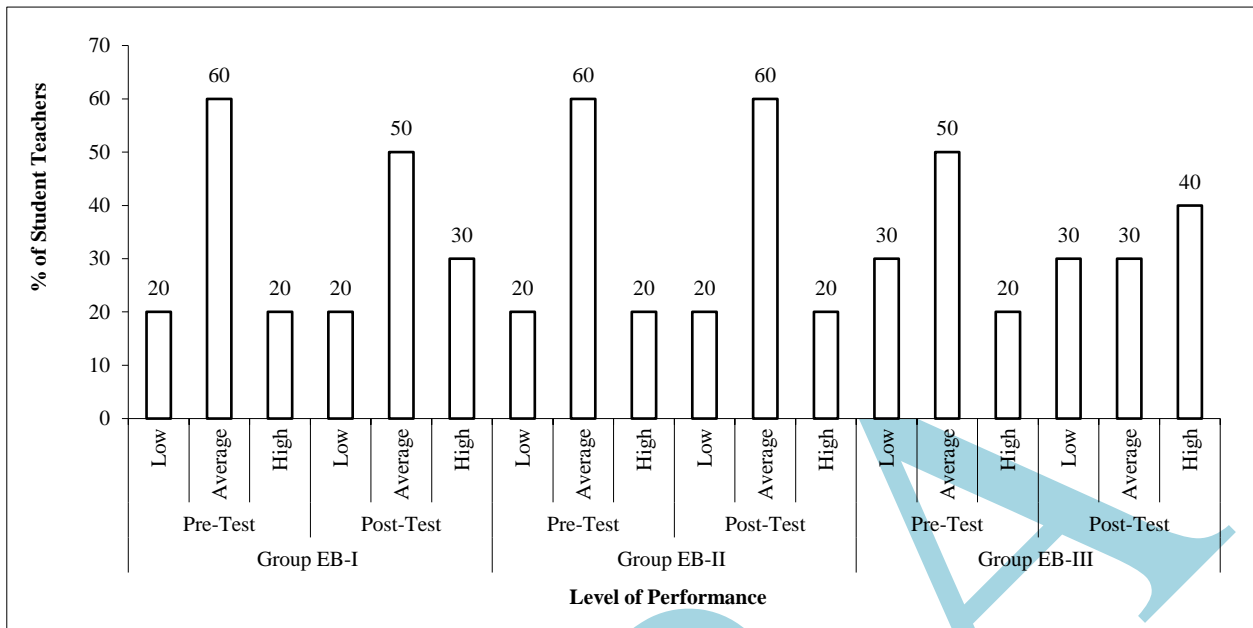


Figure 1: Level of performance of student teachers of group EB-I, EB-II & EB-III

It had been found that post-test scores of the group EB-I, EB-II and EB-III was considerably higher than their pre-test scores on BGTC scale. This indicates that student feedback, peer feedback and supervisor feedback results in the improvement in the teaching competence of student teachers.

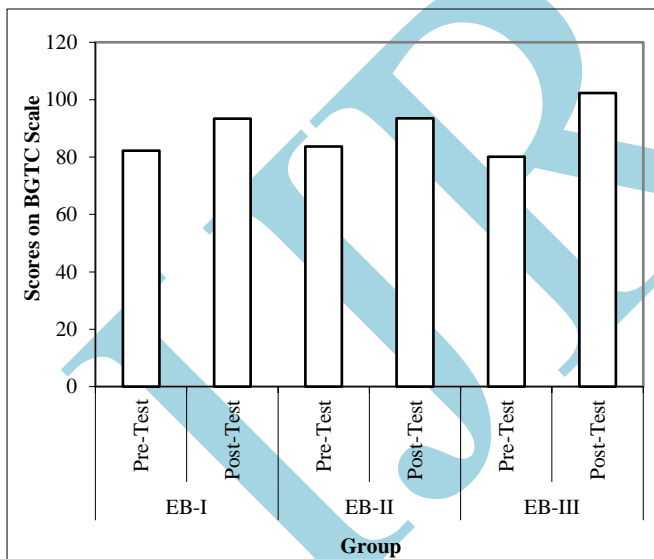


Figure 2: Impact of different types of feedback on teaching competence

Therefore the stated Hypothesis 2, “There is no effect of different feedback interventions on the general teaching competence of student teachers.” is rejected in the light of above findings. Further it is clear from the above figure that mean gain in the teaching competence was highest among the student teachers trained by supervisor feedback (Group EB-III) and least among the student teachers trained by peer feedback (Group EB-II).

Cognitive-based-competence (CBC) was measured through standardized questionnaire prepared for this purpose & the performance-based-competence (PBC) of

student teachers was determined through post-test BGTC scores.

CBC and PBC of all the student teachers belonging to the group EB-I, EB-II and EB-III was measured. The results are depicted in the Fig. 3 which represents the Scatter Diagram of the correlation between questionnaire score and post-test BGTC score for groups EB-I, EB-II and EB-III.

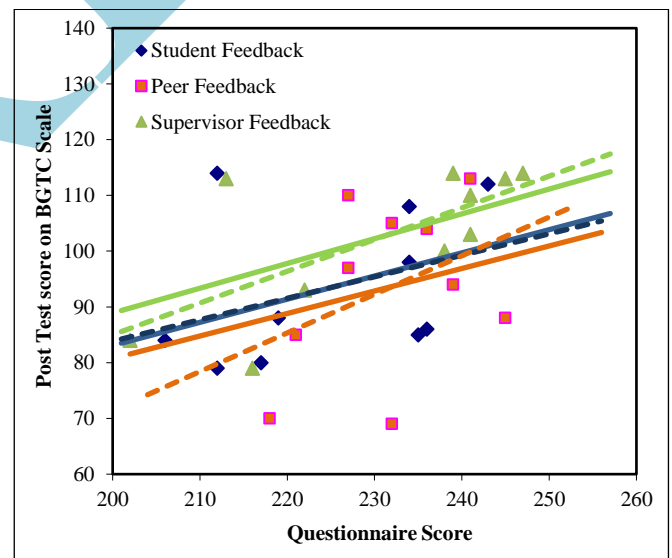


Figure 3: Relationship between questionnaire score & post-test score on BGTC Scale

The positive slope of the actual data trend line (dotted line) for all the groups from EB-I to EB-III shows that there is positive correlation between CBC and PBC for the student teachers trained by different types of feedback. Large displacement of points away from the actual data trend line (ADTL) & high angle of inclination of actual data trend line with perfect correlation trend line (solid line) for student teachers trained through student feedback and peer feedback indicates the low correlation between CBC and PBC.

Moderate displacement of points away from the ADTL & moderate angle of inclination of ADTL with perfect correlation trend line (PCTL) indicates the moderate correlation for the student teachers trained through peer feedback. Low displacement of points away from the ADTL & low angle of inclination of ADTL with PCTL indicates the substantial correlation between CBC and PBC for the student teachers trained through supervisor feedback. The product moment coefficient of correlation between CBC and PBC for the group EB-I, EB-II and EB-III have found to be 0.370, 0.389 and 0.687 respectively.

Thus the stated Hypothesis 3, "There is no relationship between cognitive-based-competence and performance-based-competence of student teachers trained through different feedback interventions" is rejected as per above results. It is further proposed that out of the three types feedback studied, student teachers trained through supervisor feedback indicates the highest correlation between CBC and PBC while student teachers trained through student feedback showed the lowest correlation between CBC and PBC. Thus supervisor feedback is effective in developing the practical competence among the student teachers by using theoretical knowledge possessed by them.

IV. CONCLUSIONS

It is concluded that out of the three feedback interventions supervisor feedback found to be most effective in changing the level of performance of student teachers measured in terms of BGTC score while peer feedback is least effective. It had been found that post-test scores of the group EB-I, EB-II and EB-III was considerably higher than their pre-test scores on BGTC scale. This indicates that student feedback, peer feedback and supervisor feedback results in the improvement in the teaching competence of student teachers. Further it has been found that mean gain in the teaching competence by student teachers trained with the help of supervisor feedback was highest and least for those trained by peer feedback. The supervisor feedback has been found to be the most effective in developing the practical competence among the student teachers by using theoretical knowledge on the basis of highest correlation between CBC and PBC.

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