CHAPTER V

SUMMARY AND CONCLUSIONS

COOPERATION IS THE THOROUGH CONViction THAT NOBODY CAN GET THERE UNLESS EVERYBODY GETS THERE.

- VIRGINIA BURDEN
CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 Background:

There was once a time when it was taken for granted that a quiet class was a
learning class, when principals walked down the hall expecting to be able to hear a pin
drop. (Al-Dawoud, 2001). However these classrooms do not encourage active learning
by students.

The teacher’s effort is aimed at developing students’ competencies and
talents; education is a personal transaction among students and between teacher and
students as they work together. The distinction between the classical and emerging
teaching learning paradigm is as illustrated in Table 5.1 which is given below.

Table 5.1

Comparison of Old and New Paradigms of Teaching.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Old Paradigms of Teaching</th>
<th>New Paradigms of Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Transferred from faculty to students</td>
<td>Jointly constructed by students and faculty</td>
</tr>
<tr>
<td>Student</td>
<td>Passive vessel to be filled by faculty’s knowledge</td>
<td>Active constructor, discoverer, transformer of own knowledge</td>
</tr>
<tr>
<td>Faculty Purpose</td>
<td>Classify and sort students into categories</td>
<td>Develop students competencies and talents</td>
</tr>
<tr>
<td>Relationships</td>
<td>Impersonal relationships among students and between faculty and students</td>
<td>Personal transaction among students and between faculty and students</td>
</tr>
<tr>
<td>Factors</td>
<td>Old Paradigms of Teaching</td>
<td>New Paradigms of Teaching</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Content</td>
<td>Competitive/ Individualistic</td>
<td>Cooperative learning in classroom and cooperative teams among faculty</td>
</tr>
<tr>
<td>Assumption</td>
<td>Any expert can be a teacher without training</td>
<td>Teaching is complex and requires considerable teacher training and continuous refinement of skills and procedures</td>
</tr>
</tbody>
</table>

Source: Johnson, Johnson & Holubec, 1998

In the traditional paradigm of teaching, teacher’s knowledge is transferred to passive learners. An absolute, necessary and sufficient requirement for teachers in this context is complete mastery of the content. A classic classroom is the teacher teaching and the students listening: students silently listening and in competition with each other as regards their performance and achievements.

The task of education is not to pour information into students’ heads, but to engage students’ minds with powerful and useful concepts. To facilitate this process, students should be taught in ways that make information meaningful and relevant to students by giving students opportunities to discover or apply ideas themselves. The quality of education, at all levels, is strengthened by practicing student centered, activity based, competency dependent cooperative approach for teaching which will make learning an enjoyable experience for pupils. (Sharma & Sharma, 2008)

5.2 Need of the Study:

The National Curriculum Framework also talks about the concerns in teacher education emphasizing that a lot of importance is given to just transmission of information and do not accommodate emerging ideas nor address the issues of linkages
between school and society. There should be a major shift in teacher education programme where learning should be appreciated as a participatory process that takes place in shared social context of learner’s immediate peers as well as the wider social community or the nation as a whole. (National Curriculum Framework, 2005. p 108)

To many pre service teachers, professional knowledge consists of both theoretical foundations of practice in future classroom teaching and the conceptual arguments from which the explanation of observed phenomenon has been found. The theory of teaching and learning related issues is commonly learned through discussions in lecture courses designed by instructors of training programs. Such learning experiences are teacher centered and the students are passive receivers of information. It does not require the ability of actively contextualizing professional knowledge with challenges faced in personal situations. Pre service teachers walk away from this course only with partial memory of the content read and discussed in the classroom. Unfortunately this is generally what they gain through the course. The use of cooperative learning can help in overcoming this limitation of teaching in pre service courses. (Liaw, 2008).

The theory behind Cooperative learning is based on **Lev. Vygotsky’s Social Development Theory**. Vygotsky’s Social Development Theory has also been termed **Social Constructivism**. Vygotsky (1978) states: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (inter psychological) and then inside the child (intra psychological)." (p57). (García, Mircea & Duque, 2010)
David and Roger Johnson (1985) claimed that despite the documented effectiveness of cooperative learning, this teaching strategy received little attention in teacher education. Lawrence Lyman and Harvey Foyle (1990) declared that it was “…lamentable that there are still colleges of education that graduate teachers and principals who are not equipped with the skills for effective collaboration and cooperation” (p. 12). If future teachers are to make positive use of cooperative learning, they need to know what it is, recognize the value of the strategy for their students and have knowledge and skill to plan cooperative activities. Therefore, teacher educators face the challenge of how best to ensure that pre service teachers acquire the knowledge and skill to enable them to implement cooperative learning and at the same time influence them to want to learn to use this model (Bouas, 1996).

Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other’s learning. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Students work through the assignment until all group members successfully understand and complete it (Kagan, 1994).

To have a chance of future implementation, cooperative learning must be modeled for pre service teachers and experience by them as learners. (Cohen, Brody & Shevin, 2004).

In light of the volume of research based finding regarding the benefits realised as a result of cooperative learning (Johnson & Johnson 1989, 1991; Kegan 1989/91; Sharan & Sharan 1989/90; Salvin 1989/90, 1991), it seems logical to expect cooperative learning to be both exemplified and taught in teacher education programmes (Bouas, 1996).
The same can be said about the existing teacher education programmes. There is little scope available in the B.Ed. syllabus for Pre Service Teachers to experience cooperative learning teaching strategies as students as lecture method is used as the method of instructions most of the times. Moreover the various types of lessons prescribed in the syllabus mainly follow the traditional Harbartian pattern of conducting lessons. No specific endeavours have been made to give systematic training in using cooperative learning teaching strategies.

The researcher selected a study based on cooperative learning because, not only has it been emphasized by the NCF as stated above, but it is included in the second section of the B.Ed. theory Paper II i.e. Psychology of Development and Learning.

This raised the following questions in the mind of the researcher:

- Whether teaching strategy based on cooperative learning is used in teaching Educational Psychology at Pre Service Teacher Education level?
- Whether social learning using teaching strategy based on cooperative learning will help the pre service teachers understand and learn Educational Psychology?
- If the pre servcie teachers will understand the concept of cooperative learning if taught using cooperative learning teaching strategy?
- Whether pre service teachers will use teaching strategies based on cooperative learning while planning and conducting their school lessons?

Hence the researcher decided to take up the present study in order to answer the above questions.
5.3 Statement of the Problem:

To find out the effectiveness of the programme based on the teaching strategy using Cooperative Learning on the academic achievement of pre service teachers in the subject Psychology of Development and Learning.

5.4 Definition of Key Terms:

5.4.1 Conceptual Definitions:

5.4.1.1. programme: A plan of activities for an event or a series of events (www.dictionary.cam Brigde.org)

5.4.1.2. strategy: A strategy is a particular way of approaching a problem or task, a mode of operation for achieving a particular end. (Brown, as cited by Karami, 2008)

5.4.1.2. teaching strategy: is a generalized plan for a lesson which includes structure, desired learner behavior in terms of goals, instruction and outline of planned tactics necessary to implement the strategy. (Stones & Moris as cited by Sharma & Chandra, 2003)

5.4.1.3. cooperative learning: Cooperative learning is a system of teaching strategy which promotes the students to cooperate in heterogeneous teams toward a common goal and are rewarded according to the success of the team. (Tan, 2001 as cited by Zou, 2011)
5.4.2 Operational Definitions:

5.4.2.1. **effectiveness:** in the present study it refers to the difference in the scores on the achievement test of the pre service teachers from experimental group and control group.

5.4.2.2. **teaching strategy based on cooperative learning:** teaching strategy based on cooperative learning refers to the activities planned by the researcher based on cooperative learning teaching techniques, namely timed-pair-share, think- pair-share, three step interview, circle the sage, formulate-listen-share and create, numbered heads, round table technique, paired heads together, pair compare and three minute review.

5.4.2.3. **academic achievement:** Scores obtained by the pre service teachers on the posttest (achievement test).

5.4.2.4. **Pre service teachers:** Students perusing the Bachelors Degree in Education from colleges affiliated to the Savitribai Phule Pune University formerly the University of Pune.

5.4.2.5. **Subject Psychology of Development and Learning:** refers to the units from Paper II, Section I - Psychology of Development and Learning from the B.Ed. syllabus. (Revised 2008) of Savitribai Phule Pune University formerly the University of Pune.

5.5 Objectives of the Study:

1. To explore the views of teacher educators regarding cooperative learning teaching strategies and find out if they use these strategies while teaching the subject ‘Psychology of Development and Learning’ to pre service teachers.
2. To develop a programme based on the teaching strategy using Cooperative Learning for teaching Paper II Section I ‘Psychology of Development and Learning’ to pre service teachers.

3. To find out the effectiveness of the teaching strategy.

4. To gather and analyse the feedback from Neutral Observers and the Pre Service Teachers of the Experimental Group regarding the intervention programme and link it with the researcher’s reflections.

5.6 Hypothesis:

Null hypothesis is stated for the study:

• $H_0$: There is no significant difference in the academic achievement of the Pre Service Teachers from the experimental and control group.

• $H_1$: “The intervention programme based on cooperative learning techniques to teach pre service teachers improves their academic achievement (of the units given in Paper II Section I ‘Psychology of Development and Learning’ of the B.Ed Revised Syllabus of 2008).”

5.7 Assumptions:

5.7.1. There is a requirement of shifting the learning paradigms from instruction to discovery and construction. (National Curriculum Framework, 2000)

5.7.2. Very few teacher education colleges pay attention to cooperative learning teaching strategy. (Johnson & Johnson, 1985)

5.7.3. The lecture format is a widespread methodology used in both undergraduate and graduate courses. (Ransdell & Moberly, 2003)
5.7.4. Students of Higher Education level enjoy learning through cooperative learning as it reduces anxiety. (Goodlad, 1990; Pushpanjali & Satyaprakash, 2010)

5.8 Scope, Delimitations and Limitations:

5.8.1 Scope:

5.8.1.1. The present research focuses on the use of cooperative learning as an effective teaching strategy for pre service teachers.

5.8.1.2. The research is concerned with colleges affiliated to Savitribai Phule Pune University formerly the University of Pune, Pune City.

5.8.2 Delimitations:

5.8.2.1 Survey:

- The study is limited to the teacher educators teaching Paper II: Psychology of Development and Learning in B.Ed. colleges within Pune city.

- The purposive sample consisted of B.Ed. colleges affiliated to Savitribai Phule Pune University formerly the University of Pune, Pune City.

5.8.2.1 Experiment:

- The study was restricted to only the pre service teachers from English medium.

- Only the English medium division of two B.Ed. Colleges in Pune city was included in the experiment.

- The researcher only included the units from Paper II, Section I – Psychology of Development and Learning from the B.Ed. syllabus. (Revised 2008)
The research has used non probability sampling method i.e. purposive sampling.

5.8.3 Limitations:

5.8.3.1 Survey:

- The motivation levels, fatigue, mood, past experience of the teacher educators which may affect their responses are beyond the control of the researcher.

5.8.3.2 Experiment:

- The motivation levels, fatigue, mood, past experience of the pre service teachers which may have affected their responses were beyond the control of the researcher.

5.9 Research Design:

The details of the research design has been given in table 5.2
### Table 5.2
**Description of the Research Design**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
<th>Objective 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research Method</strong></td>
<td>Survey</td>
<td>Product Development</td>
<td>Experimental Method</td>
<td>Descriptive Study: Programme Evaluation</td>
</tr>
<tr>
<td><strong>Research Design</strong></td>
<td>Mixed Methods quan + QUAL</td>
<td>-</td>
<td>Post-test Only Equivalent Group Design</td>
<td>Mixed Methods QUAN+QUAL</td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td>All Teacher educators teaching Paper II in Teacher Education Colleges affiliated to SPPU</td>
<td>-</td>
<td>All English Medium Teacher Education Colleges in Pune City</td>
<td>All English Medium Teacher Education Colleges in Pune City</td>
</tr>
<tr>
<td><strong>Sample/Informants</strong></td>
<td>53 teacher educators teaching Paper II in Teacher Education Colleges affiliated to SPPU</td>
<td>5 Experts</td>
<td>• Experimental Group: English Medium Pre Service Teachers from Adarsha Comprehensive College of Education and Research, Pune</td>
<td>• Informants: Neutral Observers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Control Group: English Medium Pre Service Teachers from Tilak College of Education, Pune</td>
<td>• Sample: Experimental Group</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Observers</td>
<td>• Informant: Researcher</td>
</tr>
<tr>
<td><strong>Data Collection Tools</strong></td>
<td>• Survey Questionnaire</td>
<td>• Feedback sheets for experts regarding the product.</td>
<td>• Ravens Progressive Matrices</td>
<td>• Observation sheets-Neutral Observers.</td>
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<tr>
<td></td>
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<td></td>
<td>• Teacher made Achievement test for both the groups</td>
<td>• Feedback sheets-experimental group</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Researcher’s reflections</td>
</tr>
<tr>
<td><strong>Data Analysis Tools</strong></td>
<td>• Quantitative data analysis: Percentage.</td>
<td>• Numbers or Frequency</td>
<td>• t test</td>
<td>• Quantitative data Analysis: Percentage</td>
</tr>
<tr>
<td></td>
<td>• Qualitative data analysis: Grounded Theory</td>
<td></td>
<td>• normality testing</td>
<td>• Qualitative data Analysis: Grounded Theory</td>
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<td></td>
<td></td>
<td></td>
<td>• Spearman’s Coefficient of Correlation</td>
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<td>• MANOVA</td>
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<td></td>
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<td></td>
<td>• Effect Size</td>
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</tbody>
</table>
5.10 Variables:

The independent, dependent and controlled variables in the research has been depicted in figure 5.1

![Variables in the research study](image)

Figure 5.1 Variables in the research study

5.11 Procedure:

The procedure followed in the present research study is given in figure 5.2
Figure 5.2 Procedure followed in the research study.

5.12 Major Findings:

5.12.1. Findings from the Survey (Objective 1): The teacher educators

5.12.1.1. are aware of theoretical aspects of cooperative learning. (Figure 4.2)

5.12.1.2. acknowledge the benefits of cooperative learning techniques for students and teachers. (Figure 4.5, Figure 4.6 and Figure 4.7)

5.12.1.3. rarely use cooperative learning techniques as they feel they have insufficient practical knowledge of implementing them and overcoming
the barriers they may face while using the techniques. (Figure 4.3, Figure 4.4 and Figure 4.8)

5.12.1.4. are keen on a handbook on cooperative learning, hence are willing to learn how to implement cooperative learning techniques in classrooms. (Figure 4.9 and Figure 4.10)

5.12.2. Findings from the Experiment (Objective 3):

5.12.2.1. The calculated effect size i.e. partial eta square values show that the intervention programme based on cooperative learning teaching techniques was effective as a teaching strategy for the pre service teachers. (Table 4.4 and Table 4.5).

5.12.3. Findings from the Responses from the neutral observers and experimental group pre service teachers (Objective 4):

5.12.4.1. The neutral observers were favourable towards the intervention programme with respect to its implementation and it facilitating learning (Table 4.6, Table 4.7, Figure 4.22, and Figure 4.24).

5.12.4.2. The pre service teachers also gave favourable responses to the intervention programme benefiting them personally (communicating accurately, increasing tolerance of other’s views and developing self esteem), as a learner and as a future teacher implementing cooperative learning teaching strategies. (Table 4.8, Table 4.9, Table 4.10, Table 4.11, Table 4.12, Figure 4.26, Figure 4.27, Figure 4.28).

5.12.4.3. The responses from the neutral observers, the feedback of the experimental group and the researcher’s reflections regarding the
implementation of intervention programme reflected the theories of constructivism, social constructivism and the element of cooperative learning. These were the theoretical basis on which the intervention programme was developed (Table 4.15).

5.13 Conclusions:

5.13.1 Teacher Educators are aware about the theoretical aspects of Cooperative Learning however the cooperative learning teaching techniques are rarely used in teacher education colleges.

5.13.2 Cooperative learning teaching techniques are effective or learning.

5.13.3 Cooperative learning teaching techniques are useful for teaching pre service teachers.

5.13.4 Pre service teachers’ and teacher educators’ views are favourable towards the use of cooperative learning teaching strategy in classrooms.

5.14 Discussion of Findings with earlier studies:

The present study was a multi method study consisting of a survey, product development, experimental method and a feedback from the neutral observers and the experimental group.

The survey was conducted to find out the views of teacher educators regarding cooperative learning teaching techniques and if they are used at the teacher education level. The findings of the study revealed that though the teacher educators acknowledged the benefits of cooperative learning techniques for students and teachers, they rarely used these techniques as they felt they had inadequate training for using
them. Similar finding was reported by Deepa and Sadananthan (2012) regarding secondary school teachers who had a favourable attitude towards the use of cooperative learning teaching techniques, but felt the need for training.

The main objective of the study was to find out the effectiveness of the developed intervention programme based on cooperative learning teaching techniques on the achievement of pre service teachers. This was assessed using a teacher made achievement test which was administered to the experimental and control group. The findings indicated that the achievement of the experimental group was significantly higher than that of the control group with a large effect size. Similar findings were reported in a study conducted by Badhe (2010) on D.Ed student teachers and Kaul (2008) on 7th class school students.

Further the achievement of the experimental group was higher than that of the control group with respect to the learning objectives namely knowledge, comprehension and application. Corresponding findings are seen in a study conducted by Behera and Pattanaik (2010).

A favourable feedback was obtained from the experimental group considering their views regarding the impact of the intervention programme on them at three levels: personal, as a learner and as future teachers. In the present study the pre service teachers from the experimental group were favourable regarding using cooperative learning teaching techniques in the future. The study by Bouas (1996) too indicated the willingness of pre service teachers to use cooperative learning in their future classroom. Another study by Puspanjali and Satyaprakash (2010) showed that Cooperative Learning strategy was effective in significantly reducing the anxiety. This was mirrored in the responses of the experimental group in the present study regarding the
intervention programme having a free environment allowing the pre service teachers to participate actively in class without the fear of rejection.

There were also a couple of studies whose findings did not correspond to the ones found in the present study. One of the studies conducted by Ruys, Keer and Aelterman (2010) indicated that student teachers do not prefer to collaborate themselves during the learning process. This was not the case in the present study, in which the experimental group preferred to work in groups than individually. Another study by Acharekar (2013) showed that cooperative learning as a treatment did not have a significant effect on the pre service teacher’s interpersonal relationships. However in the present study the pre service teachers opined that the cooperative learning teaching techniques had improved their communication skills and tolerance of other’s views.

5.15 Implications of the Present Study: The present research:

5.15.1. suggests that cooperative learning teaching techniques can be effective in keeping the pre service teachers active and giving them the opportunity of interacting with their peers in the classroom (Table 4.9).

5.15.2. implies that a variety of cooperative learning teaching techniques can be used at various stages during teaching. Appropriate techniques can be selected according to the content (Table 4.6).

5.15.3. indicates that cooperative learning teaching techniques may assist the pre service teachers in learning the theoretical concepts and also in learning the social skills required for good team work (Table 4.9).

5.15.4. denotes that cooperative learning teaching techniques can enable the teacher to keep the pre service teachers active, make them learn how to perform their roles and enrich theirs and other’s learning (Table 4.9)
5.15.5. shows that the theory of constructivism can be used to keep the pre service teachers active give them the opportunity to construct knowledge by interacting with their peers (Table 4.15).

5.15.6. suggests that exposure to cooperative learning teaching techniques encourages the pre service teachers to use cooperative learning teaching strategy as teachers (Table 4.12).

5.15.7. highlights that there is a need for a training programme in using cooperative learning teaching strategies in teacher education (Figure 4.11).

5.16 Contribution of the Study to the field of education:

5.16.1. The study will help teachers implement the new paradigms of teaching.

5.16.2. The teacher’s handbook which is the product of the study will be useful for teacher educators while teaching educational psychology.

5.16.3. The product may be useful for teacher educators teaching other papers or courses at the teacher education level.

5.16.4 The study has also analyzed the achievement of the experimental and control group according to the type of questions, learning objectives and the units given in the selected paper. This will help in preparing achievement tests and in evaluation.

5.16.5. The unique contribution of this study is that the researcher’s reflections have been analyzed and used in triangulation of the data collected. This aspect of
the present study will be useful to teachers for making teaching a reflective practice.

5.16.6 This study will benefit both pre service teachers and teacher educators in using cooperative learning teaching strategies in their respective classrooms using the product of the study i.e. The teacher’s handbook for cooperative learning teaching strategy.

5.17 **Suggestions for Further Research:**

5.17.1 Studies on parallel lines can be done to find out the effectiveness of cooperative learning teaching strategies for other papers in teacher education.

5.17.2 Moreover studies can be conducted on the effectiveness of other cooperative learning techniques besides those used in this study.

5.17.3 Studies can also be conducted which will focus on the training of pre service teachers and teacher educators in implementing cooperative learning techniques in their classrooms.

5.17.4 Cooperative learning teaching strategies can be planned for the entire syllabus of teacher education and be published as a book or teacher support material.

5.17.5 Comparative studies can be undertaken to find out if cooperative learning teaching strategy is more effective for a particular paper by comparing the achievement of pre service teachers with other papers given in the teacher education syllabus.
5.17.6 Studies can be conducted to find out if pre service teachers are able to successfully implement cooperative learning teaching techniques during their practice lessons or internship.

This chapter gives a summary of the present study and specifies the finding and the conclusions. It also compares the findings of the present study with the findings of previous findings. Further it highlights the implications and the contribution of the present study to the field of education. Finally it also recommends topics for further research.