LESSON STUDY: A STIMULUS TO IMPROVE PEDAGOGICAL SKILLS OF PRE-SERVICE TEACHERS

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Project Summary

Lesson study is a powerful embedded, peer-to-peer professional learning strategy. It requires teachers and educators to work collaboratively for strengthening a given lesson until it is refined to the extent possible. Then, it is taught to get data about how well the lesson works. Lesson study is a model of professional development aimed at improving the learning process and the teaching skills of teachers. In Pakistan, the process of teacher preparation is not properly aligned with the real needs of students. As a result, a large gap exists between theory and practice. 'Lesson Study' is the key approach to achieve the already set targets. Teacher education and training programs provide knowledge and skills to the prospective teachers that help them better perform professionally in classroom. Purpose of the study was to investigate the gap between theory and practice in term of teacher preparation and pedagogical approaches in Pre-Service training program (four-year B. Ed / ADE). To appreciate the depth and complexity of this interactive process, a variety of data sources were accessed to provide meaningful information regarding Pre-Service training program. Mixed method approach was employed for conducting this study and concurrent triangulation design was adopted. In concurrent triangulation strategy, the QAL as well as QAN approaches are used for cross validation (Creswell, 2003).The population comprised of student teachers, teacher educators, administrators and students of the institutes. All the student teachers enrolled in B. Ed (Hons), teacher educators and administrators were the population. Sample of study was drawn through purposive sampling. Data were collected through questionnaires, interviews, focus group discussions and direct observation. Instruments of the study were designed by a research team and validated from the help of expert educationists. Questionnaire was designed for student teachers, who were in teaching practice phase. Close and open ended questions were part of the questionnaire. Observation sheet was developed and utilized for identifying the pedagogical approaches of the teacher educators as well as prospective teachers. Interview consisted of open ended questions. Focus group discussion was arranged with student teachers in the practicing institutes. Quantitative data was analyzed by the help of SPSS, while qualitative data were analyzed through thematic analysis. The major findings of the study were; majority of the respondents agreed that lesson study develops lesson, teaching and student learning. Lesson study positively impacts on teachers: pedagogical strategies, content knowledge, skills and improves students' academic achievements through: content knowledge, subject matter, and reflection. Lesson study focused on specific goals, pre-determined goals, and teacher-generated goals. Lesson study assisted teachers to produce quality education, quality lesson plan and better understanding of student learning. Lesson study provided an opportunity to the students for academic achievement of the students through observation, reflection, and practice. Lesson study developed instruction that ensures basic academic abilities, fosters their individuality, and meets individual needs. Lesson study provided opportunities to teachers to develop their knowledge, skills and teaching. Lesson study strengthened teacher's knowledge of Subject matter, Instruction, and Capacity to observe student. It was recommended that, pilot studies may be conducted and encouraged in order to introduce the lesson study in the public schools at all levels. Teacher training institutes may include lesson study in the course outlines as a key professional development technique. It may be made compulsory for the teacher educators to perform and practice

lesson study during their teaching practices. Teachers without any prior professional qualification may excessively use lesson study in order to ensure the teaching-learning process more effectively, efficiently as well as fruitfully.

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Chapter 01

Introduction

The word “Lesson Study” comes from the Japanese words “jugyo- kenkyu”, which are generally translated as "lesson study" since jugyo means "lesson" and kenkyu means "study" or "research". It is taken as a method and in lesson study method, a group of teachers work together to plan, discuss, reflect as well as analyze an investigative research lesson and at last make a comprehensive as well as revised syllabus connected to teaching aim. In a group one colleague clarifies the research lesson (kenkyu- jugyo), whereas other members of the group see as well as gather data on learner learning. A comprehensive as well as inclusive conversation follows the opinion; concentrating on evidence, reflection of the other members of the group as well as planned lesson changes. Therefore group re-designs the instructional strategy based on these reflections, skills as well as documents. Later results are reflected for more lesson study cycles (Lewis, 2002; Stigler & Hiebert, 1999).

Lesson study is an embedded peer-to-peer professional learning strategy. It requires teachers and other educators to work collaboratively to strengthen a given lesson until it is refined as much as possible and then teach it to get powerful data about how well the lesson works. In a colloquium after the lesson is taught, the teacher (who can be anyone in the lesson study group) reflects on the lesson first and then the other members of the lesson study group share data they collected during the lesson. Lesson study groups make a decision about whether to revise the field-tested lesson and teach it again or simply apply what they have learnt in the lesson (Lee, 2008).

Teacher education plays a vital role in reforming and strengthening the education system of any country. Pre-Service teacher education provides knowledge and skills to the prospective teachers. A teacher applies diverse teaching methodologies, strategies,

approaches and pedagogical skills in order to improve his/her lesson and to inculcate lifelong learning among the young minds (Abdulrahman, 2008; Jalal, 2014). Since teacher is the focal point of any teaching-learning process, it is very important for him/her to get ready with the professional development techniques and strategies that plays effective role in students' academic achievement and learning. Among different professional development approaches Lesson study is in true sense potent embedded peer to peer professional learning strategy that possess different professional development approaches (Molina, 2011).

Having originated and emerged from Japan, it is a model of the teachers' professional development which is aimed at improving teaching and learning process (Iksan, Nor, Mahmud, & Zakaria, 2014) which has now captured attention of the communities of professional learning around the world (Ngang & Sam, 2015). In order to enhance and encourage the teachers' professional development for solution of the problems pertaining to the students' learning in the real classroom environment, it provides an alternative cooperative and collaborative strategy (Rahim, Sulaiman, & Sulaiman, 2015).

It includes cycles composed of several phases: collaborative planning, lesson observation by colleagues and other knowledgeable advisors, analytic reflection and ongoing revision. 'Lesson Study' is an exceedingly specified form and variety of classroom action research which has the sole focus upon development and improvement of the teachers' practice knowledge (Iksan, Nor, Mahmud, & Zakaria, 2014).

In Pakistan, the dilemma is that, the process of teacher preparation is not properly aligned with the real needs of students and a large gap exists between theory and practice. Alignment between theoretical knowledge and practical skills provided to the students in their pre-service education is of great importance (Good, 2006). The revitalization of present education, system is not possible without preparing, developing and inducting properly

trained teachers. According to the National Education Policy 2009, reforms in Pre-Service education and training of teachers are essential for improving the quality of education in Pakistan. Perhaps 'Lesson Study' is the key approach to achieve the already set targets. Teacher Education and training programs provide knowledge and skills to the prospective teachers that help them to perform professionally in classroom. Research studies have shown that 'Lesson Study' can improve the quality. Therefore, the 'Lesson Study' should be in line with each other in teacher training programs. This research project has been designed for B.Ed (Hons) students to (i) examine & study the pedagogical skills, (ii) survey the pedagogical approaches used in Pre-Service training program of B.Ed (Hons), (iii) study the ways teachers are prepared for fieldwork, (iv) find out the gap between theory and their teaching practice, (v) bring improvement in pedagogical skills of Pre-Service Teachers.

This study was conducted for the purpose to investigate the gap between theory and practice in term of teacher preparation and pedagogical approaches in Pre-Service training program (four-year B.Ed / ADE). To appreciate the depth and complexity of this interactive process, a variety of data sources were accessed to provide meaningful information on Pre-Service training program. The data sources include questionnaires, field notes, individual and focus group interviews, discussion and semi-structured interviews. In keeping with the eclectic nature of the study, both qualitative as well as quantitative data were obtained through questionnaire administered to current participants of the selected program. The qualitative data were gathered from interview conducted in group, field notes as well as information discussed with the respondents.

1.1. Objectives of the Study

1. To study the connotation of ‘Lesson Study’ and its implementation in practical classroom setting.
2. To compare the academic achievements of the students: whose teachers were with and without the experience of the ‘Lesson Study’.
3. To analyze the performance of the teachers in terms of the academic achievements of their students: who were with and without the experience of the ‘Lesson Study’.
4. To evaluate the relationship between academic achievement of the students and performance of the teachers in the light of ‘Lesson Study’ experience.
5. To suggest ways and means to introduce the ‘Lesson Study’ as a key professional development approach in teaching-learning process at secondary school level in Pakistan.

1.2. Research Questions

1. What is difference in the academic achievements of the students: whose teachers were with and without the experience of the ‘Lesson Study’?
2. What is performance of the teachers in terms of the academic achievements of their students: who were with and without the experience of the ‘Lesson Study’?
3. What is the relationship between academic achievement of the students and performance of the teachers in the light of ‘Lesson Study’ experience?
4. What type of the resources are required for the execution of “Lesson Study” for the teacher’s long term professional development?

1.3. Significance of the Study

The study will be significant for the following:

1. The study will be considered as an action plan to see how collaborative teachers should implement the 'Lesson Study' strategy in their own lessons and what teaching skills they should develop in this regard.
2. It will respond to the needs those teachers, professionals and stakeholders who are trying to find out for creating new strategies for preparing pre-service and in-service teachers and assisting them to develop their professional skills.
3. It will not only highlight and discuss the key concepts pertaining to 'Lesson Study' but also help the professional to understand the rationale behind its implementation and worldwide success.
4. The study will signify its importance in the teaching-learning process in the light of 'Lesson Study' as a key professional development approach, as well as help in policy making, to help in educational planning, curriculum development, administrators and teachers, and teacher's training programs.
5. Furthermore, this study is valuable for those pursuing investigation in the sector of education, mainly future scholars in the field of Lesson Study.

1.5. Operational Definitions

1.5.1. Lesson Study

Lesson study is a form of classroom inquiry in which several teachers collaboratively plan, teach, observe, revise and share the results of a single class lesson.

1.5.2. Pedagogical Skills

Pedagogy can be defined as the art of teaching. • Pedagogy involves being able to convey knowledge and skills in ways that students can understand, remember and apply. Pedagogical skills can generally be divided into classroom management skills and content-related skills.

1.5.3. Pre-Service Teachers Education

Pre-service teacher education is the education and training provided to student teachers before they have undertaken any teachin*g*. Pre-service education of teacher means, education of teachers before they enter into service as teacher. During this period of teacher education programmes, teaching practice goes side by side, while they are getting knowledge about theory papers. A good deal of improvement in the teacher education programme is needed.

1.5.4. Professional Development

Professional development is learning to earn or maintain professional credentials such as academic degrees to formal coursework, attending conferences, and informal learning opportunities situated in practice. It has been described as intensive and collaborative, ideally incorporating an evaluative stage.

Chapter 02

Literature Review

2.1. Lesson Study

The word “Lesson Study” comes from the Japanese words “jugyo- kenkyu”, which are generally translated as "lesson study" since jugyo means "lesson" and kenkyu means "study" or "research". It is taken as a method, in this method, a group of teachers work together to plan, discuss, reflect as well as analyze an investigative research lesson and at last make a comprehensive as well as revised syllabus connected to teaching aim. In a group one colleague clarifies the research lesson (kenkyu- jugyo), whereas other members of the group see as well as gather data on learner learning. A comprehensive as well as inclusive conversation follows the opinion; concentrating on evidence, reflection of the other members of the group as well as planned lesson changes. As a result, group re-designs the instructional strategy based on these reflections, skills as well as documents. Later results are reflected for more lesson study cycles (Lewis, 2002; Stigler & Hiebert, 1999).

It is distinct that lesson study, as a teachers collaboratively strategy, implement, imitate as well as revise and re-implement a lesson (Lewis, 2002). Fernandez, (2002); Yoshida (1999). Stigler & Hiebert (1999), considered lesson study as an encouraging school based activity, which delivers continuing alteration time to time. So, the principals of lesson study confirm the knowledge that learning is a social as well as situated procedure, while classrooms is the pre-eminent place for the teachers to learn as well as cooperate so as to develop their teaching methodology (Gutierez, 2015). Teachers contributing in lesson study put themselves in the cycle of instructional development in designing, perceiving as well as reviewing lessons (Lewis & Tsuchida, 1998). In lesson study, normally in a team of three to five teachers are generally selected possessing a similar rank they meet together, as well as collectively work on a “Research Lesson” plan so as to influence the learners' academic

success, (Fernandez, Cannon & Chokshi, 2003; Cheung &Wong, 2014). This process is used frequently all over in the education system of Japan. Lesson study is a detailed system of action research done in classroom directing on the improvement of teaching understanding in practice (Dunn, 2004).

Lesson study reflected as an approach of professional development, its main purpose is to refining teaching, rising as well as partaking practice understanding, and cultivating learners' development (Gutierez, 2015; Allen, 2015). This procedure contains a team of teachers, who collectively plan, teach, imitate as well as re-teach a lesson. These four cycles of lesson study have been used in Japan since the 1870s, during Meji government by primary school teachers. In that time education schools were not succeeded by the national government, thus educational scholars as well as policy makers tried to find innovative techniques so as to increase the teaching approached, (Sato, 2008, Dunn, 2004; Makinae, 2010).

Reflection is considered as compulsory part of learning as it helps in highlighting the weak areas and helps in the important as well. Lesson study is a method of thinking critically about practises as well as engagements which empowers teachers to link theory as well as practice, and to improve more cultured thinking style of teaching as well as learning process. Teachers should care more about what to teach as well as how to reflect on their actions so as to endorse learning intentions, which is main key to effective teaching and as the result improves learning. In a lesson study cycle selecting the research lesson is a very significant; it is merely a by-product of the deep procedures that comprise a more deep understanding of the lesson objectives, how the learners learn as well as a developed pedagogical understanding (Campbell, 2003). According to Tsui & Law (2007) the focus of the analysis is on the lesson as well as learning not the single teacher. Lesson Study inspires a safe situation

for teamwork, which in turn might increase self-efficacy as well as self-assurance of the teachers (Tsui & Law 2007).

A comparatively innovative method accepted by some teacher educators so as to develop teaching is lesson study, so Japan started work on them and introduced a new model for professional development of teachers (Fernandez & Yoshida, 2004). Stigler & Hiebert (1999) define LS as a chance for teachers to explore their practice "with new eyes". This model of professional development is used scientifically to extend content knowledge, increase understanding of pedagogy, as well as improve individual's skill to perceive as well as comprehend student knowledge. (Burroughs & Luebeck 2010) stated word lesson study is an interpretation of the two Japanese words: jugyo and kenkyu, it means lesson and study, correspondingly (Fernandez & Yoshida, 2004).

Lesson study is taken as a method and in this method, in which the Japanese teachers frequently involve in, to investigate their teaching practice by vigilant planning as well as reflection of lessons (Chokshi & Fernandez, 2005). LS is an continuing cycle of professional development of teachers, in which teacher educators work combine in a group to design a chapter of study based on knowledge aims, teach the lesson whereas gathering data on student knowledge, converse as well as study the lesson (debriefing), and re-teach the lesson with the changes that were made based on the results from the previous research lesson (Fernandez, 2002; Lewis, 2002; Yoshida, 1999). Teacher educators frequently select to emphasis on an idea that is mainly challenging for learners (Lewis, 2002). Aims are set for both academic content knowledge as well as lifelong learning (Campbell, 2003; Granger, 2003; Hurd, 2005; Lewis, 2002). Lifelong learning aims often contain social services or learning abilities for example, working more helpfully or relating knowledge learned in one situation to another situation (Campbell, 2003; Lewis, 2002). In decisive aims, the team of Lesson Study teachers think about where their learners are presently as well as where they

would like them to be in the upcoming, (Campbell, 2003; Hurd, 2005; Lewis, 2002). This gap between existing knowledge as well as ideal knowledge is used to emphasis the Lesson Study team during the Lesson Study cycle (Campbell, 2003; Fernandez, 2002; Lewis, 2002).When the objectives have been set, the group starts planning for the unit of study as well as selects a lesson that will be used for their lesson study, (Campbell, 2003; Lewis, 2002). The lesson can be formed by the team of teachers, as well as the team can select to use a lesson they find or have used in the previous (Lewis, 2002). Throughout the lesson planning period of the Lesson Study cycle, teacher educators prudently inspect the lesson in association to the learning objectives, which were set for learners (Lewis 2002; Yoshida, 1999). During this time teacher involve in discussions about the content of the lesson and predictable learner answers to the lesson, (Lewis 2002; Yoshida, 1999). Each and every stage of the lesson, teacher educator's converse, and the competency they want to see in learner (Hurd, 2005; Lewis, 2002).

How will the teacher investigators know if their lesson is operative in attaining the objectives they set forth? The reply to this question is used in developing research questions, (Fernandez, 2002; Lewis, 2002). If the group of teachers wishes to see learners rise their use of content particular language, they might improve a list of words that they would like to hear learners practice. Throughout the research lesson, the teacher investigators will record how numerous times each of these words is used. If educators are fascinated in learner involvement in the lesson, they can plan to make a strategy to record the number of enquiries asked by learners and the number of learners off task. From start of the research lesson, the team of Lesson Study obviously classifies, what kind of suggestion of learner knowledge they will gather during the lesson (Fernandez, 2002; Lewis, 2002). Throughout the research lesson, one teacher of the team communicates the lesson in his/her own classroom, whereas the other teacher of the team perceive as a teacher investigators gathering data on the

fundamentals of the lesson before determined by the team of lesson study (Fernandez, 2002; Granger, 2003; Hurd, 2005; Lewis, 2002). Occasionally, other educators and experts are requested to join the research lesson also. As a team they work together, as well as develop the lesson, there is co-operative ownership of the lesson (Yoshida, 1999). It is the lesson's impact on student learning that is being examine, not the teacher who is assisting the lesson (Perry & Lewis, 2003). When lesson is completed, the members of the team come together for a questioning (Campbell, 2003; Fernandez, 2002; Granger, 2003; Hurd, 2005; Lewis, 2002). The teacher educator who taught the lesson is the first to speak about his or her view of how the lesson is, (Campbell, 2003; Granger, 2003; Hurd, 2005; Lewis, 2002). Each and every teacher of lesson study team has a chance to remark on the lesson (Hurd, 2005; Lewis, 2002). The conversation throughout the questioning canters everywhere the preliminary objectives set forth by the team of lesson study, (Campbell, 2003, Lewis, 2002). The data composed are assembled as well as the results to each and every of the research questions are conversed (Lewis, 2002).

According to this strategy, some work examples composed from the learners are revised to increase further vision into how learners were handling the data from the lesson (Byrum, Jarrell, & Munoz, 2002). From time to time lesson study is recorded, as well as that recorded is used at this time to assess a mainly essential moment as well as to gather further data that might have been overlooked in the real-time interpretations (Byrum, et al., 2002; Lewis, 2002). The assessment of information throughout the debriefing leads to the alteration of the lesson for re-teaching (Granger, 2003; Lewis 2002). Teachers see for times during the lesson that learners do not show the attitudes that were expected (Granger, 2003; Lewis 2002). Through reflecting on learner answers to lesson study, a team of LS is bright to make alterations to the lesson with the goal of growing learner learning (Hurd, 2005; Lewis, 2002). The cycle thus starts again with development as well as will continue on to another research

lesson. The second research lesson will be taught by an altered fellow of the group in his or her personal classroom (Lewis, 2002). So, a whole LS cycle does not always contain teaching the lesson in each and every member of the team in classrooms. When a LS cycle has been finished, the team writes a report summarizing their work (Campbell, 2003; Fernandez, 2002).

2.2. Pitfalls of the Lesson Study

Besides so many benefits of Lesson Study, there are some pitfalls which also need to be considered. These include:-

1. Peer observation may put the teacher under pressure.
2. Difficulty in sparing time for the scheduling of meetings, lesson planning and lesson observations. Lack of time is the biggest barrier to lesson study.
3. Requires meeting as a group to find and locate resources for a Lesson in hand.
4. Require negotiating with colleagues and building a professional dialogue within a group of teachers not be well acquainted with one another.
5. Understanding among members that by investigating a lesson, they might come to different answers.
6. Understanding about how best to increase student's knowledge and understanding (Lee, 2008).

2.3. Characteristics of Lesson Study

Lesson Study, "an inclusive as well as well –voiced method for investigative practice" (Fernandez, 2003), LS has been the leading method of professional development for teachers in Japan since the 1990s (Lewis, Perry & Murata, 2006; Stephens & Isoda, 2007). The aim of Lesson Study is to develop the efficiency of the learning experiences that the teachers deliver for all of their learners, as well as to this at the end, teacher learning is inspected in words of

learner learning results. The fundamental standard of LS is the view that teachers can learn best from as well as develop their pedagogical practice through seeing when other teacher teach, and sharing knowledge as well as experience with associates. This fundamental standard need steam of teachers to meet with each other on regular basis an prolonged period of time, extending from some months to a year, to work on the planning, implementation, feedback, as well as development of one or numerous 'research lessons'(Stigler & Hiebert, 1999). Research lessons are dependable classroom lessons, taught by the teacher to their own class, that are:

1. Focused on a specific, pre-determined teacher-generated problem, goal, or a vision of pedagogical practice
2. Sensibly designed, frequently in teamwork with one or more associates
3. Observed by other teachers
4. Documented for investigation as well as thinking
5. Conversed by members of teams, other associates, administrators
6. Observer (Lewis & Tsuchida, 1997).

According to Lewis (2000), Japanese teachers were able to positively change their pedagogical method to teaching science from improving to a constructivist method through involvement in Lesson Study. They trust that LS will increase their teaching as well as that the most operative place to increase their teaching is in the setting of a classroom lesson (Stigler & Hiebert, 1999).

2.4. Benefits of Lesson Study

Lesson Study cycle bears a lot of benefits. Few of them are as follows:

1. Deeper understanding of curriculum contents.
2. Rich discussion of teaching strategies with a focus on student learning needs
3. Professional collegiality and appreciation of the insights shared by colleagues.

4. Lesson study Increased knowledge about instruction.
5. Increased capacity for meaningful observation of teaching and learning.
6. Increased confidence that a lesson is well-planned.
7. Increased ability of teachers to observe students.
8. Changes weaknesses into strengthens.
9. Strong motivation and sense of efficiency.
10. Improved quality of lesson (s).
11. Learning to see things from students' perspective
12. Promote collaboration among teachers inside as well as outside the classroom (Lewis, 2003).

2.5. Scope of the Lesson Study

Presently, Lesson Study is getting world-wide acknowledgement as a favourable method to cultivate teaching practice. Nations that are working on lesson study as a source of refining teaching contain: Thailand, Philippines, Cambodia, Laos, Indonesia, Egypt, Kenya, Ghana, South Africa, and Honduras (Isoda, Stephens, Ohara, & Miyakawa, 2007). The Asia-Pacific Economic Cooperation (APEC) project HRD, A Co-operative research of Improvements for Teaching as well as Learning Mathematics in Diverse Cultures among the APEC Member Economies, providing a chance for member economies to share methods to Lesson Study. In November 2006, the project was prolonged for four more years with the subsequent annually emphases: mathematical reasoning (2007), communication (2008), assessment (2009), as well as over simplification (2010) (CRICED), (University of Tsukuba), 2007). The first three themes were nominated in accordance with three LS procedures: design, do, as well as see. This co-operative project intended to:

1. Share thoughts as well as means of mathematical reasoning, which are essential for science, technology, economic development, as well as the growth of the APEC member economies; and
2. Develop teaching methods in mathematical thinking through Lesson Study among the APEC member economies.

2.6. Components of Lesson Study

Lesson Study contains five main components that are dependable with the endorsements for real professional development of a teachers. It is a student-centered, content based, collaborative, teacher-led, deep exercise (Lewis, 2002). To each of these components of Lesson Study are discussed below.

2.6.1 Student-Centered

The co-operative preparation as well as intensive consideration on learners' learning in the LS procedure changes the fundamental consideration from awarding teacher to the learners' thinking (Hurd & Licciardo, 2005). According to TIMSS, majority of the teachers in the US incline to emphasis on learners' services more frequently than on learners as well as functioning to comprehend their philosophy (Hiebert & Stigler, 2000). In making for the research lesson, teachers work self-possessed to expect learners' thinking as well as responses to the lesson (Lewis, 2002). It can be stimulating for a teacher in the US to expect learners' thinking. Aptitude to anticipate learners' intelligent talks from knowledge grown through earlier involvement in observing at the procedure of how learners learn. Deprived of these previous skills, it cannot be predictable that teachers will be capable to antedate how learners will practise on the innovative material (Perry & Lewis, 2003).

In Japan, it is further mutual for teachers' resources to contain information on learner philosophy. The Japanese teacher's handbooks contain comprehensive clarifications of how

learners' thinking is shaped everywhere an agreed idea. So, the main aim of Lesson Study is to improve the "eyes to see learners" (Perry & Lewis, 2003). Those who support the practice of LS pursue a paradigm shift away from an emphasis on ability growth concerning a stress on learner thinking, e.g viewing learners how to resolve a difficultly as well as then assigning several comparable difficulties does not want learners to think intensely about the fundamental ideas (Hiebert & Stigler, 2000).

However, making the capacity to realize the thinking procedures of learner's use that bring about both academic knowledge as well as social knowledge is appreciated, because of the confidence that both deliver insights for expecting as well as enabling future knowledge (Lewis, 2002). Through observation and reflection, practicing Lesson Study delivers a chance for true assessment of student knowledge (Byrum, Jarell, & Munoz, 2002). When teachers carefully inspect how and when learners are learning, the hurdles of learners in the process learning also become seeming. Even the methods in which teachers present a lesson or give a task to improve or disturb learners' thinking and knowledge (Hiebert & Stigler, 2000). LS enables the documentation of both hurdles to learning as well as the basics of practice that can be used in the studied lesson to help reduce the belongings of these hurdles. It can be modified to meet the requirements of precise classrooms, learners, and teachers because it looks at everyday connections on a classroom level (Hawley & Valli, 1999; Hurd & Licciardo-Musso, 2005). Investigative teaching at the classroom level permits for "profound discussions about curriculum, teaching, as well as learner knowledge" (Byrum, 2002).

2.6.2 Content Based

The content-based focus of Lesson Study is both at the learner level as well as the teacher level (Lewis, Perry, Hurd, O'Connell, 2006). Having distinct aims for learner knowledge delivers a strong goal for teachers as well as permits both teachers as well as

learners to know when prospects have been met (Alvarado, 1998). Knowledge of teaching theories as well as standards on their own does not confirm teaching practices that efficiently implement these approaches (Hiebert & Stigler, 2000). In order to imitate these skills in the classroom, teachers want high quality professional development that focuses on subject-matter content (Resnick, 2005). “till, we get an intensive, comprehensible, as well as mutual idea, standards-based education is just another big idea that will crash itself on the goals of implementation” (Alvarado, 1998). If we want our learners to gain a deeper, more thoughtful indulgent of content, teachers must first analyze the curriculum thus they can adoptive collaborations with learners that will solicit higher levels of thought (Alvarado, 1998).

The Lesson Study procedure guides teachers’ thinking in how to express to learners the content of the lesson. As teachers design the research lesson, they involve in deep contemplation of the main ideas that are furthermost significant for learners to understand so as to study the content being shown (Granger, 2003). In working Lesson Study, teachers not only think more extremely about learner learning, they also measure their own content knowledge (Gorman, 2005; Granger, 2003; Perry & Lewis, 2003). If the team of LS meetings a perception that they touch is particularly significant as well as the knowledge is not within the team, an external specialist in that specific subject is bring in for discussion. (Lewis, 2002; Lewis et al., 2006)

2.6.3 Collaborative

Teachers often report feeling lonely from other professionals in their same field (Beatty, 1999; Hawley & Valli, 1999; Gerono, 2005). Some even report that they are more concerned by being detached from associates than they are by other aspects for example in acceptable pay and stimulating working circumstances (Beatty, 1999). Teachers want to be part of a professional community in which they can ask questions as well as discover ideas (Gerono, 2005). A team of LS delivers the background for teachers to improve a helpful

system in which they can work collectively (Lewis, 2002). Teamwork with other teachers to see at mutual difficulties and exploration for answers produces discussion and associations that decreases approaches of separation and allows teachers as a specialist (Hawley & Valli, 1999). Teacher can construct their own understanding through distribution or uncertain and assistance of everyone in investigation in the professional learning group (Goodnough, 2002; Gerono, 2005). Distribution this learning procedure with a favourite group of associates supports shape the sturdy connections of the LS group that inspire teachers to continue to attempt innovative methods produce in their occupation (Beatty, 1999; Hiebert & Stigler, 2000; Hurd & Musso, 2005; Gerono, 2005). Through working collectively with each other, teachers build their own understanding as well as incorporate it with that of others to shape a further inclusive understanding base for the job (Chokshi & Fernandez, 2005). Cautiously inspecting their work creates teachers more clearly in what they teach and how they teach (Gorman, 2005). Teacher's conversation, commonly as well as purposely for the tenacity of refining teaching for the means of standards-based learner education (Alvarado, 1998).

2.6.4 Teacher-led

In United States of America teachers have been recipients of innovative thoughts, pedagogies, and improvements deprived of taking a vigorous part in determining the improvement of the job (Chokshi & Fernandez, 2005). When teachers' individual expressions are not involved in modelling their professional development, they often become disconnected and at times resenting of what is understood as a compulsory professional burden (Hawley & Valli, 1999). On the other hand, some researches have revealed that when teachers observe that they have better control over teacher preparation, student alliance, school as well as classroom strategy, teaching content as well as method it consequences is enlarged teaching efficiency (Tschannen, 1998). "LS permits teachers to take responsibility of their own professional growth, it places teachers in the driver's seat as well as authorises

them to straight their own programs and be their own opponents" (Chokshi & Fernandez, 2005). When teachers lead their own professional development, they take further ownership over the procedure as well as feel further interested (Beatty, 1999; Byrum et al., 2002; Hawley & Valli, 1999).

A team of Lesson Study delivers the provision and makes a nonviolent place for teachers to try out their new teacher-leader parts (Gerono, 2005). By their participation in this procedure, teachers grow professional characters as well as become familiar as leaders in their field (Beatty, 1999; Gerono, 2005). One teacher described, "Lesson study values us as professionals and permits us to use our co-operative talents and involvements to rise student achievement through growing our knowledge as professionals" (Hurd& Licciardo-Musso, 2005). Most of the teacher's professional time being consumed in the classroom, teachers are enthusiastic to contribute in the development of professional training that is centred in the classroom observing at means to increase day-to-day preparation (Alvarado, 1998; Goodnough, 2002; Hawley & Valli, 1999). Every classroom community is single, teachers involved LS essence their investigation of learner learning in their individual classrooms with their individual learners (Lewis, 2002). In 1989 teachers were properly documented as genuine investigates by the American Educational Research Association's creation of the Teacher as Researcher Special Interest Group (Zee, Lay & Roberts, 2003).

2.6.5 Reflective Practice

Lesson Study endorses reflection on numerous principles of education (Lewis, Perry, & Murata, 2004): e.g lesson, teaching, and learner learning (Hiebert & Stigler, 2000). It is intentionally slows the practice of teaching to permit for separation, analysis as well as reflection (Gerono, 2005). Lesson Study gives chance to teachers wisely to study their teaching approaches in relation to learner knowledge and create modifications to improve

their teaching (Hurd & Licciardo, 2005). As, one teacher stated after contributing in a research lesson: A lesson is like a quickly graceful river; when you're teaching you must make decisions rapidly. When you prepare a research lesson, your classmates note down your arguments as well as the learners' arguments. Your real profile as a teacher is revealed to you for the first time. The cleverly planned procedure of gathering data on learner learning by the help of observation and reflection, highlights itself because how openly the results can be functional back to the classroom (Perry & Lewis, 2003).

In Lesson Study, teachers critically observe and analyze the teaching as well as learning taking place in a classroom, to improve approaches to rise learners' learning (Hurd & Licciardo, 2005). After joining in Lesson Study, teachers often report that they are further thoughtful in their teaching and feel further self-assured in their capability to be operative in the classroom (Beatty, 1999; Perry & Lewis, 2003). Just as it is functional for schools to be student centred, professional development for teachers should be teacher centred (Hawley & Valli, 1999).

2.7. Teacher Learning and Lesson Study

Lesson study is a method of teacher professional development that is based on teacher team work as well as teacher community. The expression 'lesson study' is an exact conversion from the Japanese term 'Jugyokenky' where 'jugyo' means lesson and 'kenkyu' states to study or research. The conversion can be deceptive in a sense that lesson study is more than a research of lessons, but somewhat is an examination of teachers into their individually performs by planning, conducting, observing, as well as reflecting on research lessons (Corcoran, 2011). A cycle of lesson study consists of the following steps portrayed in Figure 01.

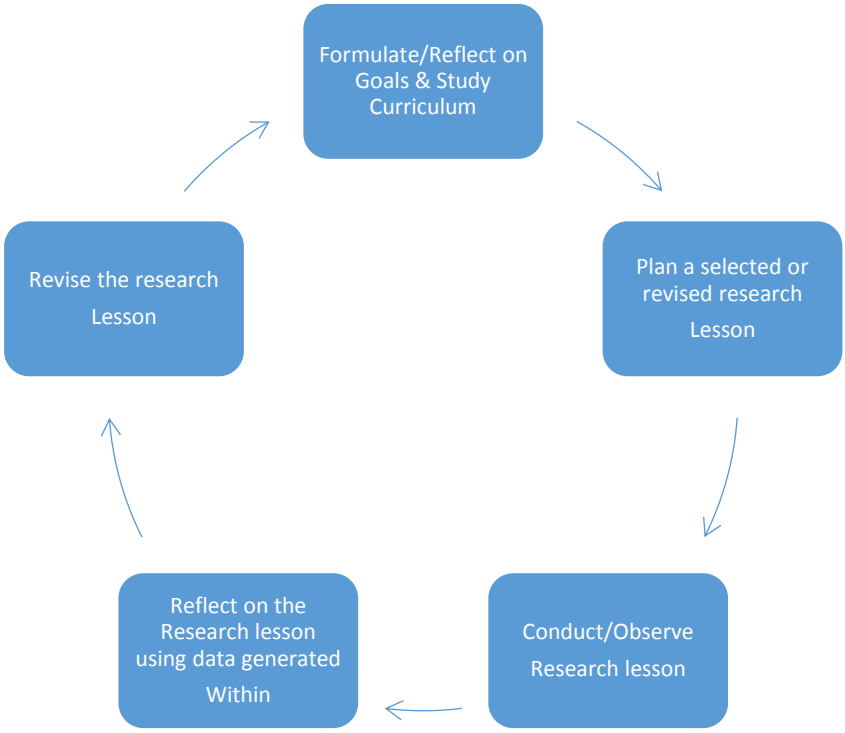

Figure 1 Lesson study cycle adapted from Lewis et al. (2009)

In first phase, teachers choose on a complete objective for their teaching, which will guide their practices in lesson study. Teachers then openly adopts the curriculum, choose on a topic to teach within that cycle, and shape a lesson plan around specific learning aims (Lewis, Perry, & Hurd, 2009). In step 2 cooperatively design content as well as materials for the lesson, one teacher actions the research lesson, whereas other associates of the lesson study join and perceive that lesson. This observation of the research lesson is as significant point of the cycle, which changes to other methods of teacher observation since each and every teachers have engaged with the preparation as well as observation of the lesson. Teachers then mutually reflect on the lesson and might be choose to change and re-teach it or continue to another cycle of lesson study (Fernandez & Chokshi, 2004). This study happened during a time of improvement of the post-primary mathematics curriculum, it was significant to integrate professional development practices, which would keep teachers in engaging with the improvement of inspiring variations to out-dated classroom practices. According to Remillard (2000) and Hanley & Torrance (2011), by engaging cooperatively with curriculum

materials and long-sighted a curriculum endorsed, teachers are stimulated to combine variations to their practices as a part of curriculum improvement. In 4thphase of lesson study openly reflect these curriculum improvement practices of appealing with and endorsing curriculum resources. Additionally, lesson study incorporates observation and reflection, which inspires teachers to sign learner mathematical philosophy during research lessons and structures teachers' thinking on their own pedagogical practices (Corcoran, 2011; Jacobs, Lamb, & Philipp, 2010). Earlier study directed both in Ireland as well as globally proposes that contribution in lesson study grips probable to improvement in teachers' content and pedagogical content knowledge (Corcoran, 2011; Leavy, Hourigan, & McMahon, 2010).

According to Murata et al. (2012), primary teachers settled in their indulgent of learner learning by discussions around design a study lesson. Bring into line with Murata et al.'s (2012) study, Cjakler et al. (2013), in their research containing four UK secondary school mathematics teachers, create that teachers began to grow less teacher-centred methods and motivated more on students' thinking by participating in lesson study. According to Lewis et al.'s (2009), teacher contribution in lesson study impacted on their teaching and learning practices. Dudley (2013) revealed that teachers were further persuaded to shape in innovative methods as well as take 'risks' in their teaching because of involvement in lesson study. These researches propose that through involvement in lesson study, teachers are delivered with chance to build on their indulgent of teaching and learning methods, to begin to include innovative practices in their own teaching, to develop in their method to constructing students' mathematical indulgent. Moreover, as a method of professional development, involvement in lesson study can support teachers to improve a sense of community, therefore this beginning of improvements can feel fewer intimidating further practicable as a result of emerging of co-operative pedagogy (Lewis, 2009).

2.8. Lesson Study in Teacher Training

The Lesson Study has been improved and established in Irish colleges of education as teacher educators identify it's possible to develop in pre-service teacher practices. Corcoran (2007) accepts that lesson study deals pre-service teachers to improve an "evocative understanding of the primary mathematics curriculum through studying children during mathematics lessons, by improving the use of the obtainable backup documents as well as organising classrooms to maximise the improvement of mathematics practise abilities".

Numerous investigations of lesson study have been assumed in colleges of education in Ireland and the results of these researches directed that lesson study has the prospective to importantly effect initial teacher education. According to Corcoran (2007) lesson study review cycle of pre-service teachers can shape their mathematical subject understanding. Likewise, according to the study of Leavy (2010) lesson study delivered her pre-service students with an opportunity for extending their understanding of statistics. Corcoran & Pepperell (2009) stated that lesson study accepted pre-service teachers to increase both their mathematical as well as pedagogical abilities. Pre-service teachers presented important knowledge development mainly in relation to their basis knowledge as characterized by (Rowland, 2005).

Leavy, Hourigan & McMahon (2010) revealed that pre-service teachers' arrogances towards algebra were better through their contribution in lesson study. According to the study of Leavy & Sloane (2008), experiences in perceiving the influence of teaching plan lessons on student learning helped as the facilitator for the growth of identifications than could not have been assisted within college-based clinical backgrounds.

2.9 . Essential Features of Lesson Study

Often, an educational innovation loses efficiency when implementers highlight certain clear features without entirely understanding other vital features such as, fulfilling hands-on

math activities without knowing the kind of mathematical discourse as well as thinking that the hands-on undertakings are intended to stimulate (Cohen & Ball, 1990). From observation of lesson study in unlike Japanese schools, I trust that the following four components are worldwide, or closely therefore, and central to Japanese lesson study.

2.9.1 A Shared Long-term Goal

Lesson study starts when teachers decide upon a shared goal for development, commonly called a research focus or important aim. Japanese teachers generally select a comprehensive aim that is convincing to teachers from numerous grade levels as well as various points of view, as the following lesson study objectives from Japanese elementary schools illuminate:

1. To improve instruction that confirms learners' rudimentary academic skills, promotes their individuality, as well as meets their specific needs;
2. For learners to take desire in friendships as well as learning;
3. For our instruction to be such that learners learn keenly.

Even when teachers emphasis on their objectives on a distinct subject area, they often have comprehensive, long-term objectives for example, for "learners to learn science with need" or "love nature" or "become problem solvers".

United States teachers are often surprised by the comprehensive, long-term objectives of Japanese lesson study. These objectives suddenly associate with the counsel often given United States teachers to emphasis on short-term, real, assessable results. In the examples of lesson study that are evolving in the United States, it is occasionally the case that:

1. The lesson study aim emphases merely on academic results;
2. The lesson study aim is selected by the lesson study leaders, rather than by the joining teachers;
3. The lesson study aim is to attain a specific test result e.g., to develop precise writing scores on a state assessment (Spillane. 2000).

2.9.2. Important Lesson Content

Lesson Study emphases on comprehensive, long-term objectives like those just planned, it also emphases on learning of a specific content area, moreover an "academic" content area for example mathematics or language arts or, less commonly, a "non-academic "area for instance art, music, class meetings, as well as school-wide accomplishments. When selecting the subject for lesson study, Japanese teachers may, e.g.:

1) Target a weakness in learner learning;
2) Select a subject teachers find hard to teach;
3) Select a subject that has altered newly e.g., a subject in which innovative content, technology, or teaching methods have been encouraged;
4) Essence on Japanese as well as mathematics in alternative years, since these topics account for much instructional time as well as can be essential to development in other areas.

2.9.3. Careful Study of Students

Teachers collect confirmation on learners' learning, appointment, and treatment of one another e.g., how they performed in small teams, whether their concepts about electricity improved over the passage of the lesson, whether they presented attention and incentive. Although Japanese teachers often meet proof on their own activities as well. Whereas Japanese lesson study emphases on learner learning as well as their growth, in the United States there is a long custom of classroom observation stressed on the teacher's attitude. e.g., teacher attitude checklists measure teacher efficiency through items like "teacher uses detailed praise." According to Stigler & Hiebert (1999)the danger of permitting particular teacher attitude, for example use of supportive groups, technology and manipulative, become ends in themselves, Reform documents that emphasis teachers' attention on features of "good teaching" in the lack of assistant backgrounds might really divert attention away from the

more significant objectives of learner learning. They might unintentionally reason teachers to additional the means for the ends, to describe accomplishment in words of precise characteristics as well as accomplishments instead of long-term developments in learning (Stigler & Hiebert, 1999).

2.9.4. Live Observation of Lessons

Live research lessons are the heart of lesson study, proper designing as well as preparation leads up to a research lesson as well as Japanese teachers occasionally travel hundreds of miles to join research lessons. What is the reason because of which in significance allocated to live surveillance of lessons rather than say, to observation of recorded lessons as well as review of lesson plans? Learner learning as well as growth cannot be measured by observing at a lesson plan, or even by seeing at most videotapes of lessons. It was a good lesson but the students didn't get it" is like saying the operation was positive but the persevering deceased. When teachers meet to watch a research lesson, they gather types of data that cannot be assembled from learners' tests, written work, and occasionally even from videotapes, e.g., proof on learners 'appointment, perseverance, emotional responses, quality of conversation inside small-groups, addition of group mates, degree of attention in the job, and so forth. In other words, throughout the research lesson teachers perceive much more than the "lesson" itself. They observe the learners 'complete demeanour toward learning as well as toward one another. It is unbearable to classify a "good lesson" without real remark, for a single lesson plan may outcome in very diverse lessons, reliant on learners, teacher, and numerous subtleties of the collaborations between them (Lewis, 2002).

To recapitulate, lesson study as it is practiced in looks to have four main features:

1) A shared long-term goal
2) Significant subject matter
3) Study of learners

4) Shared observation of live lessons

2.10. Challenges of Adopting Lesson Study

Although Lesson Study includes several rudiments that are wanted for professional development, there are insufficient challenges related with interpreting, so Japanese established Lesson Study into the US professional development system (Campbell, 2003; Chokshi & Fernandez, 2005; Fernandez, 2002; Hiebert & Stigler, 2000; Perry & Lewis, 2003). One often quoted problem to practice the lesson study is result the time for teachers to see collected to design as well as see to each other's classrooms (Fernandez, 2002; Granger, 2003; Lewis et al., 2006, December). In the United States numerous teachers feel a rising stress to cover the principles rather than extremely investigate views of the students (Perry & Lewis, 2003).

In the performance of lesson study there is need of shift in the culture of schools and the method teachers think about teaching, toward the creation of lesson plans that centre around learner learning (Hiebert & Stigler, 2000) and teacher leadership (Chokshi & Fernandez, 2005). Teachers must also be eager to open their classroom as well as teaching practices to their associates, which is a cultural shift for numerous American teachers who are more familiarised to working on their teaching self-sufficiently (Fernandez, 2002).

In a study by Clea Fernandez on how Lesson Study is interpreting from a mutual teaching practice in Japan to a model used by US teachers, she celebrated that the principal try to American teachers was to move their personal philosophy outside just what they are teaching to sight their teaching practice as a prospect for their own learning, (2002). Notwithstanding of the experiments, Lesson Study suggestions a gathering of mechanisms that interrelate collected to form an involvement that has been described as helpful by many Japanese and United States educators.

2.11. Summary

After reviewing the literature, it is indicative that Lesson Study should foster a collaborative teaching culture and might increase the efficacy of pre-service teachers. The literature highlights the need to find an appropriate solution to resolve the theory-practice problem. It emphasises the factors contributing to the theory practice gap which need to be considered when attempting to find a solution to the problem. It also provides insights into lesson study and its potential to support pre-service teachers in bridging the theory-practice gap I believe that the incorporation of lesson study into pre-service teacher education allows beginning teachers to engage meaningfully in their teaching.

Lesson Study is a technical concept of education that is new today. Lesson Study is a construction professional educator through the study of collective and continuous learning based on the principles of mutual collaboration and learning to develop a learning community. The program is adapted from the study of learning Japanese through three levels of planning, implementation and reflection. In the process of Lesson Study, teachers need to spend plenty of time to plan lessons so that they can meet the learning of students in the highest degree. Teachers will discuss and share evidence of student learning, then the best plans and effective teaching in order to guide students to learn about a topic.

It is an continuing cycle of professional development of teachers, in which teacher educators work combine in a group to design a chapter of study based on knowledge aims, teach the lesson whereas gathering data on student knowledge, converses well as study the lesson (debriefing), and re-teach the lesson with the changes that were made based on the results from the previous research lesson (Fernandez, 2002; Lewis, 2002; Yoshida, 1999). Teacher educators frequently select to emphasis on an idea that is mainly challenging for learners (Lewis, 2002). Aims are set for both academic content knowledge as well as lifelong learning (Campbell, 2003; Granger, 2003).

Chapter 03

Methodology

3.1 Design of the Study

Concurrent triangulation design of mixed method was used in this research. This design based on; both qualitative and quantitative data collection techniques were adopted. The concurrent triangulation (see fig, 2) of qualitative and quantitative data were used for the purpose of cross validation of the data. According to Creswell (2009), "the quantitative and qualitative data collection was concurrently done in one phase of the research study".

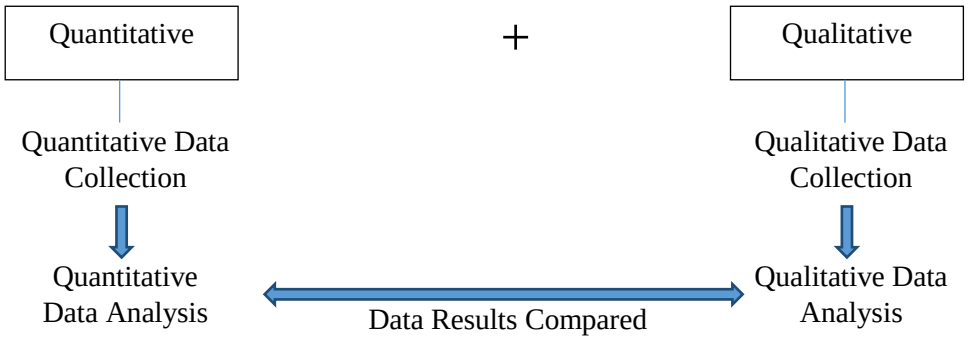

Figure 2. Concurrent Triangulation Design of Mixed Method

3.2 Population

The population comprised of student teachers, teacher educators, administrators and students. Population of the study consisted of 379 male and female student teachers enrolled at (1) International Islamic university, Islamabad, (2) Govt. Elementary College for Women, Islamabad, (3)Federal College of Education, Islamabad, and (4) National University of Modern Languages, Islamabad. Furthermore, all the teacher's trainers, heads of departments, principles, directors and teaching practicum supervisors of the above mentioned teachers training institutions were the population of this project.

Table 1. *Population Details*

S. No.	Name of Institutions	Progm	Teacher Educators	Student Teacher	Administrators
1	International Islamic University, Islamabad	B. Ed (Hons)	17	56	02
2	Govt. Elementary College for Women, Islamabad	B. Ed (Hons)	15	108	02
3	National University of Modern Languages, Islamabad	B. Ed (Hons)	22	75	02
4	Federal College Of Education, Islamabad	B. Ed (Hons)	22	140	02
	Total		76	379	08

3.3 Sample of the Study

Sample of study was drawn through purposive sampling technique. Using purposive sampling technique sample was selected from four institutes in Islamabad. Teacher Educators 48, Student Teachers135, and Administrators 08 were selected as sample of the study. The proportionate of the sample was selected through the sample table proposed by Gay, (2000).

Table 2. *Sample Details*

S.No	Name of Institutions	Progm	Teacher Educators	Student Teacher	Administrators
1	International Islamic University, Islamabad	B. Ed (Hons)	12	56	02
2	Govt. Elementary College for Women, Islamabad	B. Ed (Hons)	10	30	02
3	National University of Modern Languages, Islamabad	B. Ed (Hons)	14	26	02
4	Federal College Of Education, Islamabad	B. Ed (Hons)	10	23	02
	Total		48	135	08

3.4 Data Collection Instruments

Data was collected through questionnaires, interviews, focus group discussions, and direct observations.

i. Questionnaire

Questionnaire was designed for student teachers doing teaching practice. Close ended questions were part of the questionnaire.

ii. Observation Sheet

Observation Sheet was developed and utilized for identifying the pedagogical approaches of the teacher educators as well as prospective teachers.

iii. Interviews

Interviews were conducted from administrators and based upon open ended questions.

iv. Focus Group Discussions

Focus Group Discussions was arranged with student teachers at the practicing institutes.

3.5 Data Collection

Data were collected through instruments mentioned above. Research team comprising principal investigator, co-investigator and research associate took part in the pilot testing process. Survey was conducted in the selected intuitions and data were collected accordingly. Prior permission was taken from the head of institutions, where study was conducted. The data provided by institutions was duly acknowledged by following research ethics properly. All the material and data were kept strictly confidential and remained under proper official control for sufficient period after the study.

3.6 Data Analysis

It was mixed method research. Two types of data were collected, quantitative and qualitative. Quantitative data were analyzed through SPSS. Percentage and frequencies used as a statistical tools. Observation sheet was analyzed with help of SPSS. The results of questionnaire and observation sheet data were presented in the form of figures, and table. Each and every table and figure explain with detail. Observation sheet consist of closed ended question having five point likert scale. In the analysis of observation sheet with the help of percentages and frequencies find out the perceptions of prospective teachers of teacher educators during the lesson study process. While qualitative data were analyzed through thematic analysis. Focus groups discussions, and interview consisted open ended questions. The responses of the respondents of focus group discussion and interview were summarized using the thematic coding approach.

Chapter 04

Analysis and Interpretation

4.1. Quantitative Data Analysis

4.1.1. Analysis of Prospective Teachers' Views Regarding Lesson Study

Survey questionnaire was used, which was consisted of 24 statements, and every statement was responded on three point Likert type scale, rating from "Agree", "Uncertain", and "Disagree".

Table 3. *While Teaching the Teacher Applies approaches like: Reflection, Thinking critically and Discussion*

S.No	Statements	A f (%)	UC f (%)	DA f (%)
1.	Reflection	105 (77.8)	18 (13.3)	12 (8.9)
2.	Thinking Critically	107 (79.3)	20 (14.8)	08 (5.9)
3.	Discussion	103 (76.3)	25 (18.5)	07 (5.2)

Table 3 revealed that 77.8% student teacher were agreed, 13.3% were uncertain, while 8.9% disagreed, with statement 'while teaching your teacher applies Reflection'. 79.3% student teachers agreed, 14.8% uncertain, and 5.9% disagreed with statement 'while teaching your teacher applies Thinking Critically'. 76.3% student teachers agreed, 18.5% uncertain, and 5.2% disagreed with statement that 'while teaching teacher applies Discussion'. The result of the above table shows that most of the prospective teachers were agreed and the give positive responses towards the statement that while teaching the teacher applies approaches i.e Reflection, Critical Thinking and Discussion.

Table 4. *Lesson Study is considered: Professional Development, Developing and Sharing Practices, Improve Student Progress*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Professional development	105 (77.8)	16 (11.9)	04 (10.4)
2.	Developing and sharing practices	111 (82.2)	10 (7.4)	14 (10.4)
3.	Improve student progress	123 (91.1)	10 (7.4)	02 (1.5)

Table 4 revealed that 77.8% student teacher agreed, 11.9% uncertain, while 10.4% disagreed, with statement that 'Lesson study is considered as professional development'. 82.2% student teachers agreed, 7.4% uncertain, and 10.4% disagreed with statement that 'Lesson study is considered as developing and sharing practices'. 91.1% student teachers agreed, 7.4% uncertain, and 1.5% were disagreed with statement that 'lesson study is considered to improve student progresses. Majority of the prospective teachers were agreed and have positive responses towards the statement that lesson study is considered as Professional Development tool, helpful in Developing and Sharing Practices and Improves Student Progress.

Table 5. *Lesson Study is a Social Process: To Learn, to Collaborate, to Improve Teaching Practices*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	To learn	123 (91.7)	05 (3.7)	07 (5.2)
2.	To collaborate	109 (80.7)	16 (11.9)	10 (7.4)
3.	Improve teaching	115 (85.2)	19 (14.1)	01 (0.7)

Table 5 revealed that 91.7% student teachers agreed, 11.9% uncertain, while 7.4% disagreed, with statement that the 'Lesson Study is a social process to learn'. 80.7% student

teachers agreed, 11.9% uncertain, and 10.4% disagreed with statement that 'Lesson Study is a social process to collaborate'. 85.2% student teachers agreed, 14.1% uncertain and 0.7% were disagreed with statement that 'Lesson Study is a social process to improve teaching practices'. Majority of the prospective teachers had positive responses that lesson study is a social process to learn, to collaborate and to improve teaching practices.

Table 6. *In Classroom Lesson Study is an Effective Tool for the Lesson Planning, Lesson Presentation, and Lesson Evaluation*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Lesson planning	119 (88.1)	12 (8.9)	04 (3.0)
2.	Lesson presentation	107 (79.3)	13 (9.6)	15 (11.1)
3.	Lesson evaluation	98 (72.6)	15 (11.1)	22 (16.3)

According to table 6, 88.1% student teachers agreed, 8.9% uncertain, while 3.0% disagreed with statement that 'in classroom lesson study is an effective tool for Lesson planning'. 79.3% student teachers agreed, 9.6% uncertain, and 11.1% disagreed with statement that 'in classroom lesson study is an effective tool for Lesson presentation'. 72.6% student teachers agreed, 11.1% uncertain, and 16.3% disagreed with statement that 'in classroom lesson study is an effective tool for Lesson evaluation. Most of the prospective teachers had positive responses towards the statement that in classroom lesson study is an effective tool for lesson planning, lesson presentation and lesson evaluation.

Table 7. *Teachers Participating in Lesson Study to Put Themselves in the Cycle of Planning, Observing and Revising*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Planning	109 (80.7)	20 (14.8)	06 (4.4)
2.	Observing	108 (80.0)	20 (14.8)	07 (5.2)
3.	Revising	104 (77.0)	22 (16.3)	09 (6.7)

Table 7 reflects that 80.7% student teacher agreed, 14.8% uncertain, while 4.4% disagreed with statement that 'Teachers participating in lesson study to put themselves in the cycle of Planning'. 80.0% of student teachers agreed, 14.8% uncertain, and 5.2% disagreed with statement that 'Teachers participating in lesson study have to put themselves in the cycle of observing'. 77.0% student teachers agreed, 16.3% uncertain and 6.7% disagreed with statement that 'Teachers participating in lesson study have to put themselves in the cycle of revising'. Majority of the prospective teachers have positive responses that teachers participating in lesson study have to put themselves in the cycle of planning, observing and revising.

Table 8. *Life-Long Goals Often Include: Social Skills, Learning Skills, Content Knowledge*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Social Skills	114 (80.4)	04 (3.0)	17 (12.6)
2.	Learning skills	122 (90.4)	08 (5.9)	05 (3.7)
3.	Content Knowledge	104 (77.0)	22 (8.9)	09 (14.1)

Table 8 shows that 80.4% student teachers agreed, 3.0% uncertain and 12.6% disagreed, with statement, 'Life-long goals often include social skills'. 90.4% of student teachers agreed, 5.9% uncertain and 3.7% disagreed with statement that 'Life-long goals often include learning skills'. 77.0% student teachers agreed, 8.9% were uncertain, and

14.1% disagreed with statement that 'Life-long goals often include Content Knowledge'. Majority of the prospective teachers have positive responses towards the statement that life-long goals often include social skills, learning skills and content knowledge.

Table 9. *Lesson Study as a Process for Examining: Practices, Professional Development and Cognitive Development*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Practices	113 (83.7)	12 (8.9)	10 (7.4)
2.	Professional Development	114 (84.4)	11 (8.1)	10 (7.4)
3.	Development	104 (77.0)	09 (14.1)	22 (8.9)

According to table 9, 83.7% student teachers agreed, 8.9% uncertain and 7.4% were disagreed with statement that 'Lesson study is a process for examining Practices'. 84.4% of student teachers agreed, 8.1% uncertain and 7.4% disagreed with statement that 'Lesson study is a process for examining the professional development'. 77% student teachers agreed, 14.10% uncertain and 8.90% disagreed with statement that Lesson study is a process for examining cognitive development'. Most of the prospective teachers were agreed to the statement that lesson study is a process for examining practices, professional development and cognitive development.

Table 10. *Lesson Study Promotes Reflection on the Lesson, Teaching and Student Learning*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Lesson	108 (80.0)	17 (12.6)	10 (7.4)
2.	Teaching	94 (69.6)	21 (15.6)	20 (14.8)
3.	Student Learning	114 (84.4)	09 (6.7)	12 (8.9)

Table 10 shows that 80.0% student teachers agreed, 12.6% uncertain, while 7.4% disagreed with statement that 'Lesson study promotes reflection on the Lesson,' 69.6% of student teachers agreed, 15.6% uncertain and 14.8% disagreed with statement that 'Lesson study promotes reflection on the Teaching'. 84.4% student teachers agreed, 6.7% uncertain and 8.9% disagreed with statement that 'Lesson study promotes reflection on Students' learning'. Majority of the prospective teachers have positive responses to the statement that lesson study promotes reflection on the lesson, teaching, and student learning.

Table 11. *Lesson Study Positively Impact on Teachers: Pedagogical Strategies, Content Knowledge, Skills*

S No Statement	A f (%)	UC f (%)	DA f (%)
1. Pedagogical Strategies	113 (83.7)	15 (11.1)	07 (5.2)
2. Content Knowledge	115 (85.2)	13 (9.6)	07 (5.2)
3. Skills	119 (81.1)	14 (10.4)	02 (1.5)

According to table 11, 83.7% student teacher agreed, 11.1% uncertain, while 5.2% disagreed with statement that 'Lesson study positively impacts on teachers' Pedagogical Strategies,' 85.20% of student teachers agreed, 9.6% uncertain, and 5.2% disagreed with statement that 'Lesson study positively impacts on teachers' Content Knowledge'. 81.10% student teachers agreed, 10.40% uncertain and 1.5% disagreed with statement that 'Lesson study positively impacts the teachers' Skills'. Majority of the prospective teachers have positive responses to the statement that lesson study has positive impact on teachers' pedagogical strategies, content knowledge and skills.

Table 12. *Lesson Study Positively Impact on Students: Motivation, Engagement, and to Develop Skills*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Motivation	106 (84.4)	14 (4.4)	15 (11.1)
2.	Engagement	108 (80.0)	12 (8.9)	15 (11.1)
3.	To Develop Skills	118 (87.4)	12 (8.3)	05 (9.4)

According to table 12, 84.4% student teachers agreed, 4.4% were uncertain, while 11.1% disagreed with statement that 'Lesson study positively impacts on students' motivation'. 80.0% of student teachers agreed, 8.9% uncertain, and 11.1% disagreed with statement that 'Lesson study positively impacts on students' engagement'. 87.4% student teachers agreed, 8.3% uncertain, and 9.4% disagreed with statement that 'Lesson study positively impacts on students' skills development'. Majority of the prospective teachers have positive responses to the statement that lesson study positively impacts on students' motivation, engagement and skills development.

Table 13. *Improving Students' Academic Achievements Through: Content Knowledge, Subject Matter and Reflection*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Content Knowledge	107 (79.3)	16 (11.8)	12 (8.9)
2.	Subject Matter	114 (84.4)	09 (6.7)	12 (8.9)
3.	Reflection	109 (81.5)	15 (11.1)	10 (7.4)

Table 13 presents that 79.3% student teachers agreed, 11.8% uncertain, while 8.9% disagreed, with statement that 'Improving students' academic achievements through Content Knowledge. 84.4% of student teachers agreed, 6.7% were uncertain, and 8.9% disagreed with statement that 'Improving students' academic achievements through Subject Matter'. 81.5%

student teachers agreed, 11.1% uncertain, and 7.4% disagreed with statement that 'Improving students' academic achievements through Reflection'. Most of the prospective teachers were agreed to the statement that lesson study improves students' academic achievements through: content knowledge, subject matter and reflection.

Table 14 *Engagement of Student for Academic Achievement through: Work As a Team, Work Collaboratively, Sharing Practices*

S No Statement	A f (%)	UC f (%)	DA f (%)
1. Work as a team	103 (76.3)	24 (17.8)	08 (5.9)
2. Work collaboratively	113 83.7)	11 (8.1)	11 (8.1)
3. Sharing Practices	08 (83.7)	14 (5.9)	 (10.4)

According to table 14, 76.3% student teachers agreed, 17.8% uncertain, while 5.9% disagreed, with statement that 'Engagement of students for academic achievement through work as a team'. 83.7% of student teachers agreed, 8.1% uncertain, and 8.1% disagreed with statement that 'Engagement of student for academic achievement through collaborative work'. 83.7% student teachers agreed, 5.9% uncertain, and 10.4% disagreed with statement that 'Engagement of students for academic achievement through Sharing Practices'. Most of the prospective teachers agreed to the statement that engagement of students for academic achievement through work as a team, work collaboratively and sharing practices.

Table 15. *Motivation towards the Academic Achievements of Students Through: Build Student Understanding, Encourage Students, and Respect Student's Views*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Build student understanding	122 (90.4)	07 (5.2)	06 (4.4)
2.	Encourage students	121 (89.6)	10 (7.4)	04 (3.0)
3.	Respect student's views	108 (80.0)	06 (4.4)	21 (15.6)

Table 15 reveals that 90.4% student teachers agreed, 5.2% were uncertain, while 4.4% disagreed with statement that 'Motivation towards the academic achievements of students build student understanding'. 89.6% of student teachers agreed, 7.4% were uncertain, and 3.0% disagreed with statement that 'Motivation towards the academic achievements of students encourage students'. 80.0% student teachers agreed, 4.4% uncertain and 15.6% disagreed with statement that 'Motivation towards the academic achievements of students build student understanding, encourage students, respect student's views'. Greater majority of the prospective teachers have positive responses to the statement that motivation towards the academic achievements of students builds student understanding, encourage students and respect student's views.

Table 16. *Lesson Study Can Be Individualized To Meet the Needs Of: Specific Classroom, Students, and Teachers*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Specific Classroom	98 (72.6)	21 (15.6)	16 (11.9)
2.	Students	03 (76.3)	27 (20.0)	05 (3.7)
3.	Teachers	95 (70.4)	22 (20.7)	18 (8.9)

According to table 16, 72.6% of the student teachers agreed, 15.6% uncertain, while 11.9% disagreed, with statement that 'Lesson study can be individualized to meet the needs of Specific Classroom'. 76.3% of student teachers agreed, 20.0% uncertain and 3.7% disagreed with statement that 'Lesson study can be individualized to meet the needs of students. 70.4% student teachers agreed, 20.7% uncertain and 8.9% disagreed with statement that 'Lesson study can be individualized to meet the needs of teachers. Most of the prospective teachers were agreed to the statement that lesson study can be individualized to meet the needs of specific classroom, students and teachers.

Table 17. *By the help of Pedagogical Practices Teachers Can: Share Knowledge with Colleagues, Share Experiences with Colleagues and Share Practices with Colleagues*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Share knowledge with colleagues	118 (87.4)	16 (11.9)	01 (0.7)
2.	Share experiences with colleagues	107 (79.3)	21 (15.6)	07 (5.2)
3.	Share practices with colleagues	114 (84.4)	16 (11.9)	05 (3.7)

Table 17 reflects that 87.4% student teachers agreed, 11.9% uncertain, while 0.7% disagreed with statement that 'by the help of pedagogical practices teachers can share knowledge with colleagues. 79.3% of student teachers agreed, 15.6% uncertain and 5.2% were disagreed with statement that 'by the help of pedagogical practices teachers can share experiences with colleagues'. 84.4% student teachers agreed, 11.9% uncertain and 3.7% disagreed with statement that 'by the help of pedagogical practices teachers can share practices with colleagues'. Most of the prospective teachers were agreed to the statement that by the help of pedagogical practices teachers can share knowledge with colleagues, share experiences with colleagues and share practices with colleagues.

Table 18. *Lesson Study is Authentic Classroom Lesson Which Focuses on: Specific Goals, Pre-Determined Goals, and Teacher-Generated Goals*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Specific goals	94 (69.6)	21 (15.6)	20 (14.8)
2.	Pre-determined goals	95 (70.4)	28 (20.7)	12 (8.9)
3.	Teacher-generated goals	91 (67.4)	40 (29.6)	04 (3.0)

Table 18 shows that 69.6% student teachers agreed, 15.6% uncertain, while 14.8% disagreed, with statement that 'Lesson study is authentic classroom lesson which focuses on specific goals'. 70.4% of student teachers agreed, 20.7% uncertain and 8.9% disagreed with statement that 'Lesson study is an authentic classroom lesson which focuses on Pre-determined goals'. 67.4% student teachers agreed, 29.6% were uncertain and 3.0% disagreed with statement that 'Lesson study is an authentic classroom lesson which focuses on the Teacher-generated goals'. Most of the prospective teachers have positive responses to the statement that lesson study is an authentic classroom lesson which focuses on specific goals, pre-determined goals and teacher-generated goals.

Table 19. *Lesson Study was designed to assist Teachers to Produce: Quality Education, Quality Lesson Plan, and Better Understanding of Student Learning*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Quality education	114 (84.4)	11 (8.1)	10 (7.4)
2.	Quality lesson plan	123 (91.1)	11 (8.1)	01 (0.7)
3.	Better understanding	117 (86.7)	15 (11.1)	03 (2.2)

Table 19 presents that 84.4% student teacher agreed, 8.1% uncertain, while 7.4% disagreed with statement that 'Lesson study was designed to assist teachers to produce

quality education'. 91.1% of student teachers agreed, 8.1% uncertain, and 0.7% disagreed with statement that 'Lesson study was designed to assist teachers to produce quality lesson plan'. 86.7% student teachers agreed, 11.1% uncertain, and 2.2% disagreed with statement that 'Lesson study was designed to assist teachers to produce better understanding of students learning'. Most of the prospective teachers were agreed to the statement that lesson study was design to assist teachers to produce quality education, quality lesson plan and better understanding of student learning.

Table 20. *Lesson Study Provide an Opportunity for Academic Achievement of the Students through: Observation, Reflection, and Practicing*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Observation	116 (85.9)	10 (7.4)	09 (6.7)
2.	Reflection	107 (79.3)	19 (14.1)	09 (6.7)
3.	Practicing	117 (78.5)	22 (16.3)	07 (5.2)

Table 20 reflects that 85.9% student teachers agreed, 7.4% uncertain, while 6.7% disagreed with statement that 'Lesson study provides an opportunity for academic achievement of the students through observation'. 79.3% of student teachers agreed, 14.1% uncertain and 6.7% disagreed with statement 'Lesson study provides an opportunity for academic achievement of the students through observation, reflection, and practicing'. 78.5% student teachers were agreed, 16.3% uncertain, and 5.2% disagreed with statement that 'Lesson study provides an opportunity for academic achievement of the students through practicing'. Most of the prospective teachers have positive response to the statement that lesson study provides an opportunity for academic achievement of the students through observation, reflection and practicing.

Table 21. *Lesson Study Develops Instruction that Ensures: Basic Academic Abilities, Foster their Individuality, and Meet Individual Needs*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Basic academic abilities	113 (83.7)	11 (8.9)	10 (7.4)
2.	Foster their individuality	99 (73.3)	29 (21.5)	07 (5.2)
3.	Meet individual needs	102 (75.6)	24 (17.8)	09 (6.7)

According to table 21, 83.7% student teachers agreed, 8.9% uncertain, while 7.4% disagreed with statement that 'Lesson study develops instruction that ensures basic academic abilities'. 73.3% of student teachers agreed, 21.5% uncertain and 5.2% disagreed with statement that 'Lesson study develops instruction that fosters their individuality'. 75.6% student teachers agreed, 17.8% uncertain, and 6.7% disagreed with statement that 'Lesson study develops instruction that meets individual needs'. Most of the prospective teachers were agreed to the statement that lesson study develops instructions that ensures basic academic abilities, fosters their individuality, and meets individual needs.

Table 22. *Increase Students' Interest in Lesson through: Teaching, Pedagogy and Learning*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Teaching	104 (77.0)	16 (11.9)	15 (11.1)
2.	Pedagogy	106 (78.5)	18 (13.3)	11 (8.1)
3.	Learning	114 (84.4)	09 (6.7)	15 (8.9)

Table 22 presents that 77.0% student teacher agreed, 11.9% uncertain while 11.1% disagreed, with statement that 'Increase students' interest in lesson through teaching'. 78.5% of student teachers agreed, 13.3% uncertain, and 8.1% disagreed with statement that 'Increase students' interest in lesson through pedagogy'. 84.4% student teachers agreed, 6.7%

uncertain and 8.9% disagreed with statement that 'Increase students' interest in lesson through Learning'. Most of the prospective teachers have positive responses to the statement that increase students' interest in lesson through teaching, pedagogy and learning.

Table 23. *Lesson Study is a Process Building of: Knowledge, Skills, and Learning*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Knowledge	111 (82.2)	16 (11.9)	08 (5.9)
2.	Skills	115 (85.2)	10 (7.4)	10 (7.4)
3.	Learning	122 (90.4)	04 (3.0)	09 (6.7)

Table 23 reveals that 11.9% student teachers uncertain, while 5.9% disagreed, with statement 'Lesson study is a process building of Knowledge'. 85.2% of student teachers agreed, 7.4% uncertain, and 7.4% disagreed with statement 'Lesson study is a process building of: Skills'. 90.4% student teachers agreed, 3.0% uncertain, and 6.7% disagreed with statement 'Lesson study is a process building of learning'. Most of the prospective teachers have positive responses to the statement that lesson study is a process building of: knowledge, skills, and learning.

Table 24. *Teacher Professional Development Driven by: Curriculum Change, New Classroom Technology, and Advance in Pedagogy*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Curriculum change	115 (85.2)	09 (6.7)	11 (8.1)
2.	New classroom technology	120 (88.1)	06 (4.4)	09 (6.7)
3.	Advance in Pedagogy	119 (88.1)	10 (7.4)	06 (4.4)

Table 24 presents that 85.2% student teachers agreed, 6.7% were uncertain, while 8.1% disagreed, with statement that 'Teacher professional development driven by curriculum

change'. 88.1% of student teachers agreed, 4.4% uncertain and 6.7% disagreed with statement that 'Teacher professional development driven by new classroom technology'. 88.1% student teachers agreed, 7.4% uncertain, and 4.4% were disagreed with statement that 'Teacher professional development driven by advance in pedagogy'. Most of the prospective teachers agreed to the statement that teacher professional development driven by curriculum change, new classroom technology, and advance in pedagogy.

Table 25. *Lesson Study Enables Teachers to Build Their: Understanding, Skills, and Trust*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Understanding	117 (87.4)	14 (10.4)	04 (3.0)
2.	Skills	121 (89.6)	11 (8.1)	03 (2.2)
3.	Trust	109 (80.7)	17 (12.6)	09 (6.7)

Table 25 reveals that 87.4% student teachers agreed, 10.4% uncertain, while 3.0% disagreed, with statement 'Lesson study enables teachers to build their understanding'. 89.6% of student teachers agreed, 8.1% were uncertain, and 2.2% disagreed with statement that 'Lesson study enables teachers to build their skills'. 80.7% student teachers agreed, 12.6% uncertain and 6.7% were disagreed with statement that 'Lesson study enables teachers to build their trust'. Most of the prospective teachers agreed to the statement that lesson study enables teachers to build their: understanding, skills and trust.

Table 26. *Lesson Study Strengthens Teacher's Knowledge of: Subject Matter, Instruction and Capacity to Observe Students*

S No	Statement	A f (%)	UC f (%)	DA f (%)
1.	Subject matter	112 (83.0)	17 (12.6)	06 (4.4)
2.	Instruction	99 (73.3)	29 (21.5)	07 (5.2)
3.	Capacity to observe students	111 (82.2)	19 (14.1)	05 (3.7)

According to table 26, 83.0% student teachers agreed, 12.6% uncertain, while 4.4% disagreed with statement that 'Lesson study strengthens teacher's knowledge of subject matter'. 73.3% of student teachers agreed, 21.5% uncertain and 5.2% disagreed with statement that 'Lesson study strengthens teacher's knowledge of instruction'. 82.2% student teachers agreed, 14.1% uncertain and 3.7% disagreed with statement that 'Lesson study strengthen teacher's knowledge of capacity to observe students'. Most of the prospective teachers have positive responses to the statement that Lesson Study strengthens Teacher's Knowledge of subject matter, instruction and capacity to observe students.

4.2. Observation Sheet Analysis

Observation sheet was used by teacher educators to observe the teacher as well as students in the process of lesson study. Observation sheet consisted of statements related to the understanding level of students as well as the methodology of teacher educators in the process of lesson study. The detail is given below:

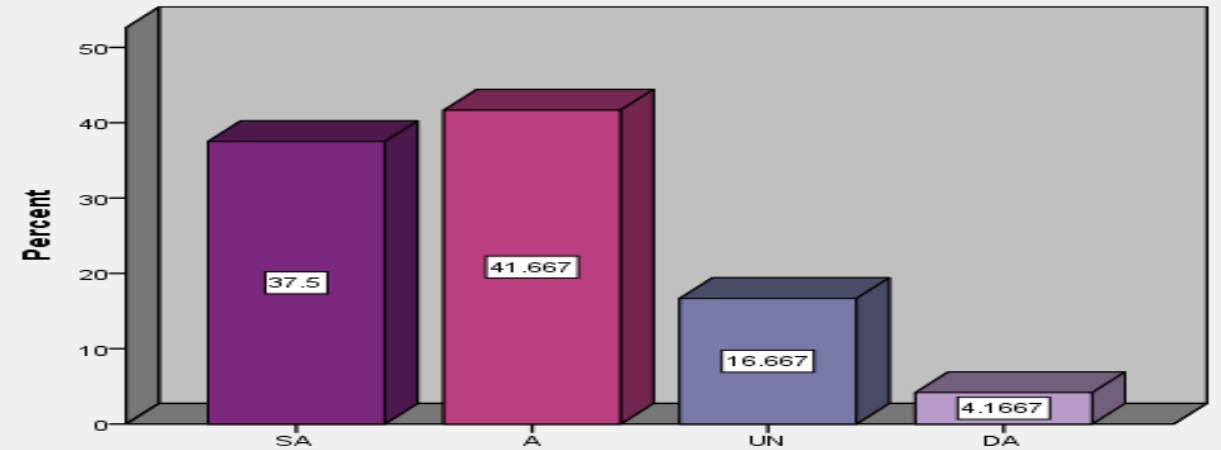

Figure1 Understanding the teacher's instructions.

According to Figure 1, 37.5% teacher educators strongly agreed, 41.66% teacher's educators agreed, 16.66% of teacher undecided, and 4.166% teacher educators disagreed. Therefore it is concluded that majority of the respondents agreed with the statements Understanding the Teacher's Instructions.

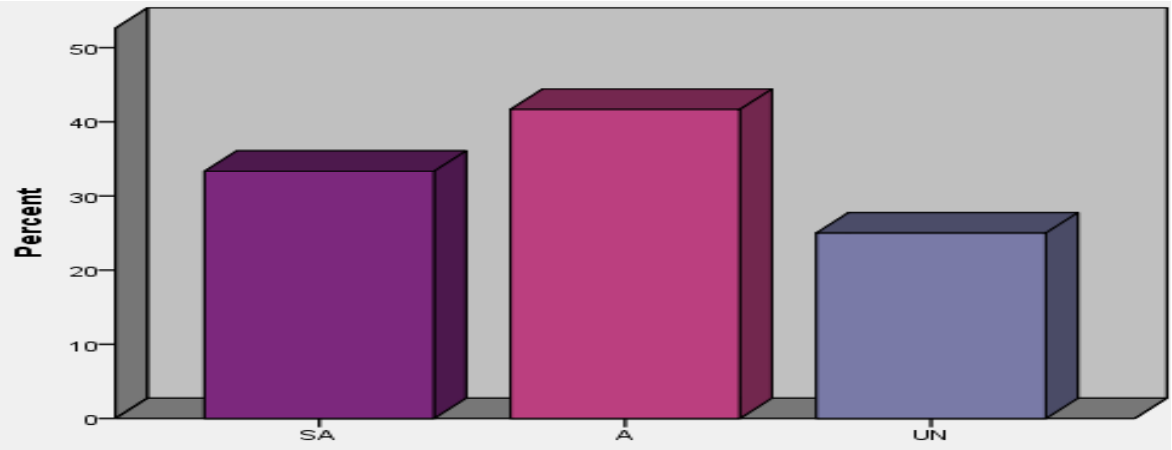

Figure 2 Activeness of students.

According to figure 2, 33.3% teacher educators strongly agreed, 41.7% teachers educators agreed and 25% of teacher undecided. Therefore it is concluded that majority of the respondents gave positive responses to the statements.

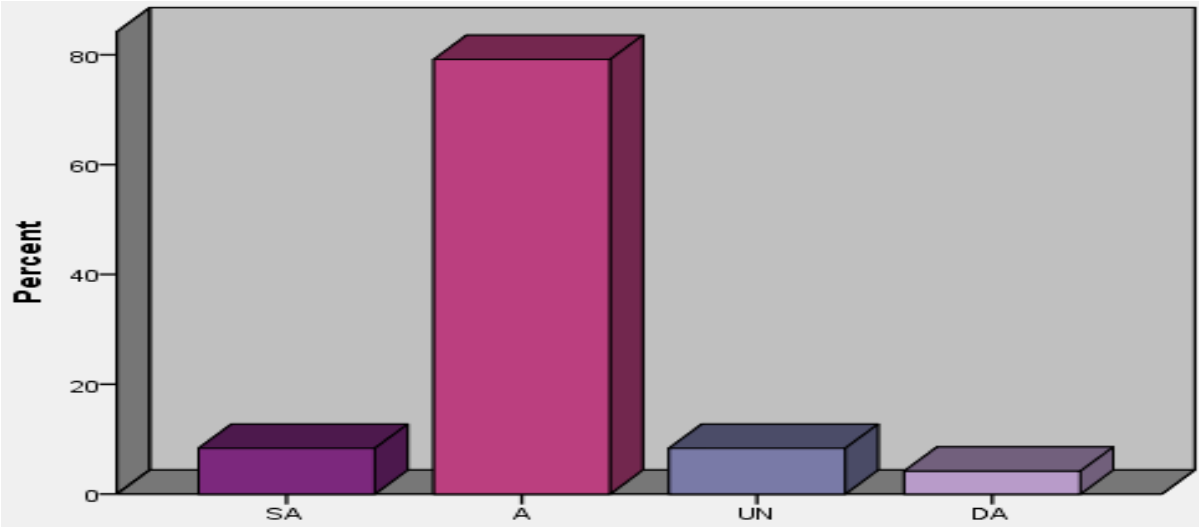

Figure 3 Students are adequately prescribed background knowledge.

According to figure 3, 8.33% teacher educators strongly agreed 79.16% teacher's educators agreed, 8.33% of teacher undecided and 4.16% teacher educators were disagreed. Therefore it is concluded that majority of the respondents gave positive responses to the statement students are adequately prescribed background knowledge.

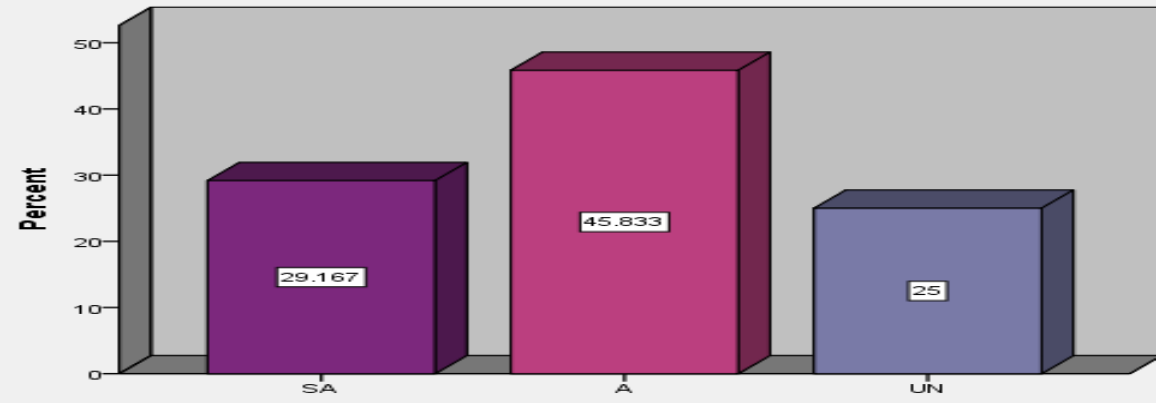

Figure 4. Students respond actively to the teacher's questions.

According to figure 4, 25% teacher educators strongly agreed, 45.83% teacher's educators agreed and 25% of teacher undecided. The majority of the respondents gave positive responses with statements that students respond actively to the teacher's questions.

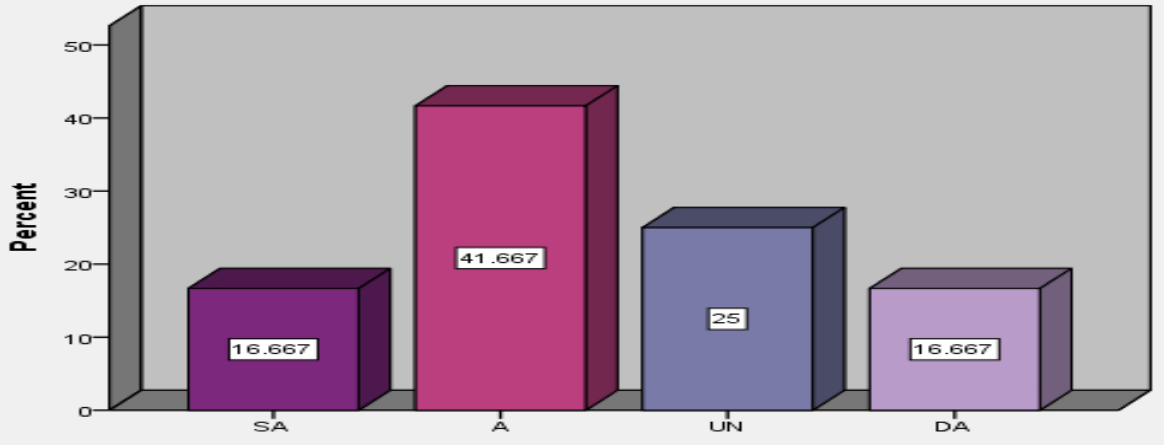

Figure 5. Students ask questions to the teacher during class.

According to figure 5, 16.66% teacher educators strongly agreed, 41.66% teacher's educators agreed, 25% of teachers were undecided and 16.66% teacher educators disagreed. Therefore it is concluded that majority of respondents agreed with statements students asking questions to the teacher during class.

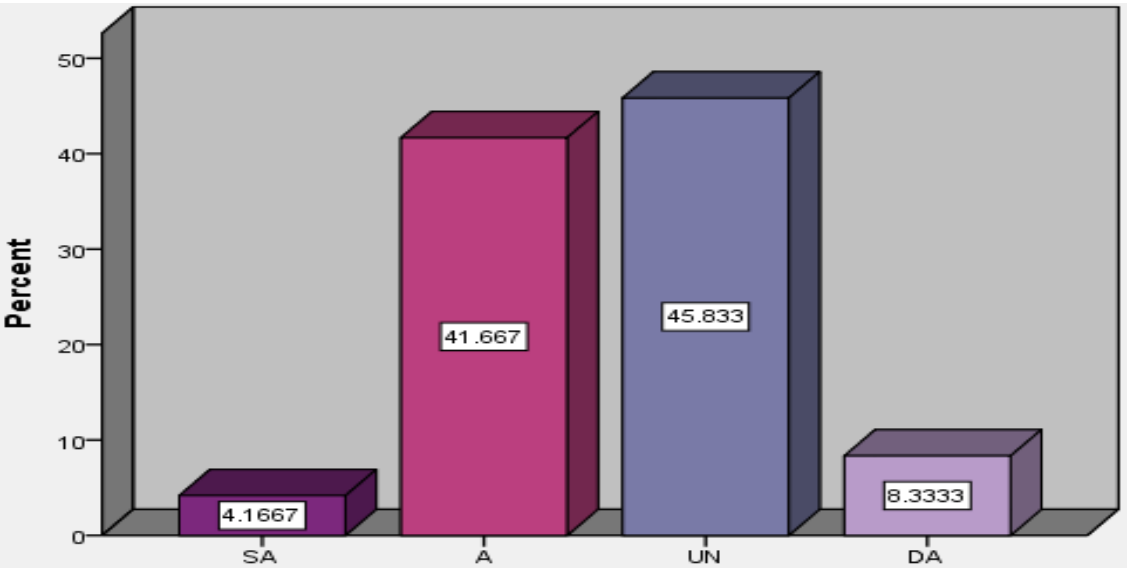

Figure 6. Students appreciate opinion of each other during class.

According to figure 6, 4.166% teacher educators strongly agreed, 41.66% teacher's educators agreed, 45.83% of teacher undecided, and 8.33% teacher educators disagreed. Therefore it is concluded that majority of the respondents gave positive responses with statement that students appreciate opinion of each other during class.

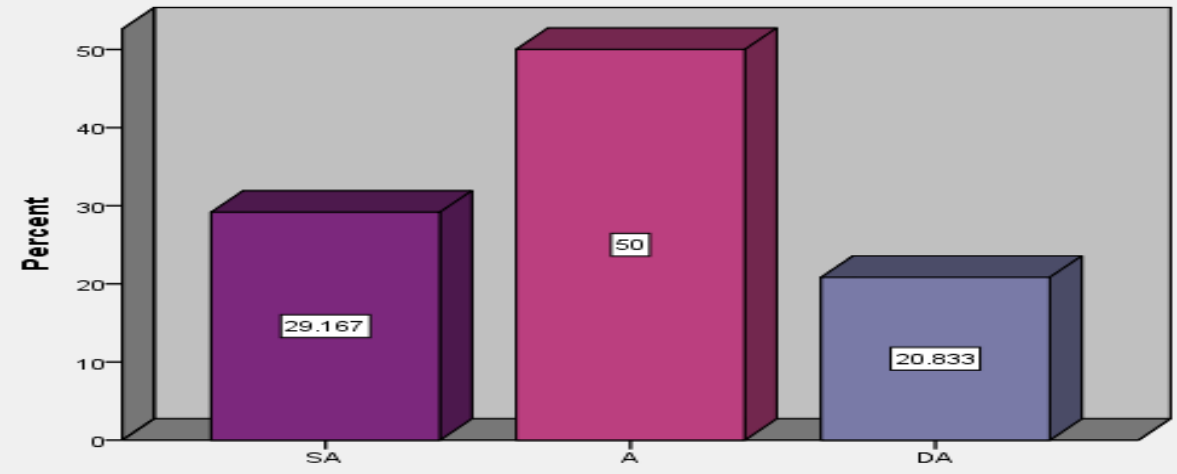

Figure 7. Students feel comfortable and enjoyable in attending the class.

According to figure 7, 29.16% teacher educators strongly agreed, 50% teacher educators agreed, and 20.83% teacher educators disagreed. Therefore it is concluded that majority of the respondents gave positive responses with statements students feel comfortable and enjoyable in attending the class.

4.3. Analysis of Qualitative Data

4.3.1 Analysis of the Focus Group Discussion

The qualitative analysis focuses on different aspects of lesson study which have been examined. The detail of these aspects is as under:

1) Lesson study for changing the pedagogical skills of teachers
2) Effect of lesson study on student achievement
3) Lesson study as a tool for teacher professional development
4) Lesson study changes the content knowledge
5) Aadvantages of the lesson study process
6) Disadvantages of the lesson study process

The main findings emerged from the qualitative data are explained in relation to each of the above dimension of the framework used to guide the study.

4.3.1.1 Lesson Study for Changing the Pedagogical Skills of Teachers

Data reflects the tendency to idealize the notion that lesson study changes the pedagogical skills of teachers. Seven main areas have been identified which depict the lesson study changes the pedagogical skills of teachers. i.e: a) increased knowledge of subject matter, b) increased knowledge of instruction, c) increased ability to observe students d) stronger collegial networks and e) improved quality of available lesson plans.

4.3. 1.2 Increased knowledge of subject matter

Subject matter is an important part of teacher knowledge. And with the help of lesson study the knowledge of teacher is increased according to subject matter. Lesson study help in the selection of learning activities, fruitful explanation of subject, asking innovative questions according to subject, as well as evaluation of learner learning. LS also help teachers in the selection of specific topic of their curriculum. Because subject matter highly affect by the attitudes as well as hopes that their learners bring to the classroom.

4.3.1.3 Increased knowledge of instruction

Lesson Study increased the knowledge of instruction of teachers. By adopting lesson study process by teacher, than he/she can used different types of new as well as innovative techniques as well as methods in classroom, and try their best to make their lesson in a simple way. When teachers used new as well as innovative methods in the preparation of lesson, it increases the knowledge of teachers about instruction in lesson study process.

4.3.1.4 Increased teacher ability to observe students

In lesson study process, it develops the ability of teacher to observe the students. In classroom when teacher delivered the lesson, if the lesson is prepared according to LS, than

teacher observe the level of understanding of their students in classroom. If students have any problems during lesson than teacher can solve their problems.

4.3.1.5 Stronger collegial networks

LS is a process in which teachers cooperatively plan, implement, redirect as well as review and re-implement a lesson. In LS teacher work collaboratively so it endorse stronger collegial networks, as well as cultivate a stronger sense of self-efficacy. So, the contribution of lesson study is stronger the collegial networks, as well as the quality of professionalism among teachers.

4.3.1.6 Improved quality of available lesson plans

In LS study process teacher work collaboratively on a lesson to refine them as well as re-implement the lesson. In LS planning process it improves the quality of available lesson plan. Because when a group of teachers of same subject works on lesson plans and refine them time to time so it improves quality of available lesson plans.

4.3.2 Impact of Lesson Study on student achievements

The prospective teachers hold a strong opinion that Lesson study is not being practiced in Pakistan formally as it is time consuming activity and also evolves financial implications. But where the teachers have informally practiced lesson study in their schools, they have reported bright prospects of the very approach especially upon the students' academic achievement. They are of the view that the lesson study places great impact their students' achievements. The prospective teachers consistently agreed, that LS has impact on student achievement. They point out many factors which have affected student achievement. Some of the recurring themes emerging from prospective teacher's reflection relate to the impact of LS on student achievement.

4.3.2.1 Mastery of Academic Skills and Content

With the help of lesson study students can achieve Mastery of Academic Skills and Content. Through lesson study teacher can try their best to deliver their lesson in the best way, as well as teacher used different techniques and methods. If the lesson is well refined it effects on students' academic skills as well as content. Different types of academic skills of students were developed.

4.3.2.2 High-Quality Work

LS process produces high quality of work. In this process different teachers of same subject work collectively on lesson plan and refine the lesson plan. So, it develops the innovative thinking, connect to real-life matters as well as set-ups and make work which is evocative for students.

4.3.3 Lesson Study as a Tool for Teacher's Professional Development

The views of prospective teacher's towards lesson study. Lesson study is a good tool for teacher professional development, because LS refine the pedagogical practices get improved and strengthened. It develops the quality of confidence, patience, critical and analytical thinking in teachers. Some of the recurring themes emerging from prospective teacher's reflection relate to lesson study process is a good tool for teacher professional development. E.g., teacher's grips on subject matter/content knowledge, teacher's grip on pedagogy/teaching method, teacher knowledge of educational psychology and classroom management, and teacher mastery in communication.

4.3.3.1 Teacher's grip on subject matter / content knowledge

There is an entire emphasis on the need for a competent teacher to have a strong command over knowledge related subject content. The data suggests that all prospective teachers participated in the focus group discussion unanimously agreed that having a strong

command over the subject is the foremost need of a teacher to become effective and successful in the classroom. A teacher should have a full command over the content knowledge, a focused group emphasized. Another focus group shared: “A competent teacher is one who has in-depth knowledge of the subject”. The teachers articulated their emphasis on strong knowledge of subject as the most desirable quality of a competent teacher in different ways. Some referred an up-to-date information about the subject; some talked about the ‘knowledge of subject matter’ or ‘concepts from curriculum’ that teachers discuss with the students in their everyday teaching; while others referred to ‘complete knowledge’ of the subject.

4.3.3.2 Teacher’s grip on pedagogy / teaching method

There is an overwhelming emphasis on the need for a professionally competent teacher to develop mastery in pedagogy. A teacher, to develop mastery in pedagogy, is capable of using different pedagogical techniques in the classroom as appropriate to the situation at hand. There appears to be complete agreement among the participants of the focused group discussion about certain set of pedagogical skills, knowledge, and attitudes that essentially need to be acquired by professional competent teacher. The prospective teacher’s views about essential professional competencies suggest that the expertise of a competent pedagogy needs to combine a wide range of teaching and manipulative skills, deeper understanding of teaching methodologies and approaches, and knowledge of the theories underlying these approaches. Mastery in pedagogy can come through genuine engagement with pedagogical practices and constant reflection on these practices.

4.3.3.3 Knowledge of educational psychology

Knowledge of educational psychology and classroom management appears yet another area which has received great attention from the participants of the focused group discussion. The focused group, for example, emphasized. A competent teacher must be aware

of the educational psychology. It also stressed upon the need for teachers to have an understanding of educational psychology: they should have complete knowledge of educational psychology. Elaborating on the concept of educational psychological, the teachers make a reference to concepts and practices such as catering to individual differences, classroom management, and assessing and catering to individual student's learning needs. The teachers are of the view that every child has a different way of learning, so the teachers have to be patient with them.

4.3.3.4 Mastery in Communication

In the data, there is a great deal of emphasis on the need for competent teachers to have strong communication skills. By having mastery in communication, the teachers mean the various ways, including oral communication, through which a teacher tries to communicate messages, and his or her thoughts, ideas, feelings and beliefs to his or her students inside and outside the classroom, and to his colleagues in an efficient and clear way. The participants believe that the more effectively the teacher communicates with the students, the more likely the students are to better understanding the teacher's message.

4.3.4 Improving the Content Knowledge

The data portrayed the views of prospective teacher's that Lesson study improves the content knowledge. The teachers are of the view that the lesson study has a great impact upon their content knowledge. They report that their content knowledge has enhanced immensely in this regard. They pointed out many factors, which has affected that Lesson study changing the content knowledge.

4.3.4.1 Declarative knowledge

Lesson Study develops the content knowledge of teachers, content knowledge have three type and Declarative knowledge is its type. So it develops the declarative knowledge of teacher in the process of lesson study. Declarative knowledge is the factual information that

one knows. As well as declarative knowledge is conscious; it can often be verbalized. Metalinguistic knowledge, or knowledge about a linguistic form, is declarative knowledge. So, LS process develops declarative knowledge of teacher during in the lesson planning.

4.3.4.2 Procedural knowledge

Lesson Study develops the content knowledge of teacher during the preparation of lesson planning as well as develops the procedural knowledge of teachers, and Procedural knowledge is knowledge of how to do something, of how to perform the steps in a process. Procedural knowledge involves knowing HOW to do something. Procedural knowledge is one of the main types of content knowledge.

4.3.4.3 Conditional knowledge

The main focus of lesson study is on conditional knowledge, and conditional knowledge develops during lesson planning process, as well as lesson develops by the help of lesson study it develops the conditional knowledge of teacher, and conditional knowledge is one of the type of content knowledge, and Conditional knowledge is knowledge about when to use a procedure, skill, or strategy and when not to use it; why a procedure works and under what conditions, as well as why one procedure is better than another.

4.3.5 Advantages of Lesson Study

There are certain advantages of the lesson study process. These advantages are; (1) deeper understanding of curriculum content; (2) rich discussion of teaching strategies with a focus on student needs; (3) professional collegiality and appreciation of the insights shared by colleagues; (4) increased knowledge of instruction; (5) increased capacity for meaningful observation of teaching and learning; (6) increased confidence that a lesson is well-planned; (7) increased ability to observe students etc.

Following were the advantages of lesson study:

1) Deeper understanding of curriculum content
2) Rich discussion of teaching strategies with a focus on student needs
3) Professional collegiality and appreciation of the insights shared by colleagues
4) Increased knowledge of instruction
5) Increased capacity for meaningful observation of teaching and learning
6) Increased confidence that a lesson is well-planned
7) Increased ability to observe students

4.3.6 Disadvantages of Lesson Study

Apparently there is no disadvantage of the lesson study yet there are a few limitations/pitfalls exist. These are; (1) peer observation may put the teacher under pressure; (2) difficulty in sparing time for the scheduling of meetings, lesson planning and lesson observations; (3) lack of time is the biggest barrier to lesson study.

Following were the disadvantages of lesson study:

1) Peer observation may put the teacher under pressure
2) Difficulty in sparing time for the scheduling of meetings, lesson planning and lesson observations
3) Lack of time is the biggest barrier to lesson study

4.4. Qualitative Data Analysis

4.4.1 Responses of Interview Questions

A structured interview was conducted with administrators. And the number of administrators was 10 belonging to different teaching training institutions. The response was received from 08 administrators. All the administratorswere approached by the researcher through visit to their respective institutes. Prior to interview; the administrators were briefed by the researcher about the study. The responses of administrators were about the followings areas:

1. Lesson Study can affect student learning
2. Lesson study process changing the content knowledge
3. Impact of lesson study on student's achievement
4. Impact of lesson study on content knowledge
5. Impact of lesson study on pedagogical knowledge
6. Lesson study as a tool for teacher professional development
7. Advantages of the lesson study process
8. Disadvantages of the lesson study process

4.4.1.1 Lesson Study can affect student learning

The responses of the administrators directed that Lesson Study affect student learning. So, majority of the administrators were agreed that the lesson study casts a spellbound effect upon the students learning. This approach is not refined one and it lessons up to the desired extent, it also streamlines the pedagogical practices of the teachers. Through the lesson study the teachers also learn that how effective and meaningful collaboration takes place in actual classroom setting and since they interact extensively with each other on regular basis they learn the techniques and strategies that help them best in actively engaging and involving the students in the teaching-learning process.

4.4.1.2 Lesson study process changing the content knowledge

The responses of administrators directed regarding Lesson Study Process `that lesson study changing the content knowledge. Therefore most of the administrators responded that after the lesson is being delivered, the teachers have to interact and communicate extensively with each other in the lesson study group in order to exchange their views and reflect upon the previous as well as current feedback.

4.4.1.3 Impact of lesson study on student's achievement

Responses of the administrators directed that Lesson Study impacts on students 'achievement. Therefore most of the administrators highlighted that Lesson study is not being practiced in Pakistan formally as it is time consuming activity and also evolves financial implications. While at the place where the teachers have informally practiced lesson study in their schools, they have reported bright prospects of the very approach especially upon the students' academic achievement.

4.4.1.4 Impact of lesson study on student's Content Knowledge

Responses of the administrators directed that Lesson Study impacts the content knowledge. Therefore most of the administrators responded that the teachers are of the view that the lesson study has a great impact upon their content knowledge. They report that their content knowledge has enhanced immensely in this regard.

4.4.1.5 Impact of lesson study on pedagogical knowledge

Responses from the administrators directed that Lesson Study impacts on pedagogical knowledge. Therefore most of the administrators responded that the teachers report by using lesson study in the actual classroom setting and the subsequent feedback during the follow up meeting of the lesson study group greatly influences their pedagogical knowledge.

4.4.1.6 Lesson study as a tool for teacher professional development

Responses of the administrators revealed that Lesson Study is a good tool for teacher professional development. Therefore most of the administrators shared that the lesson study is one of the best tools for the professional development of the teachers as the lessons get refined; the pedagogical practices get improved and strengthened. It also develops the personality and character of the teachers. The teachers' confidence is built and value of patience, critical and analytical thinking is inculcated.

4.4.1.7Advantages of the lesson study process

Responses of the administrator's pointed the advantages of lesson study process. Therefore most of the administrators responded that there are certain advantages of the lesson study process. Which are appended below:-

(1) Deeper understanding of curriculum content.

(2) Rich discussion of teaching strategies with a focus on student needs.

(3) Professional collegiality and appreciation of the insights shared by colleagues.

(4) Increased knowledge of instruction.

(5) Increased capacity for meaningful observation of teaching and learning.

(6) Increased confidence that a lesson is well-planned.

(7) Increased ability to observe students.

4.4.1.8 Disadvantages of the lesson study process

Responses of the administrators directed that disadvantages of the lesson study process. Therefore most of the administrator's respondent that as such there is no disadvantage of the lesson study yet there are a few limitations / pitfalls delineated below:-

(1) Peer observation may put the teacher under pressure.

(2) Difficulty in sparing time for the scheduling of meetings, lesson planning and lesson observations.

(3) Lack of time is the biggest barrier to lesson study.

Chapter 05

Summary, Findings, Conclusions & Recommendations

5.1 Summary

This study was conducted on "lesson study" for the improving of pedagogical skills of pre-service teachers to investigate the gap between theory and practice in terms of teacher preparation and pedagogical approaches in Pre-Service training programs (four-year B. Ed / ADE). To investigate the depth and complexity of this interactive process, a variety of data sources were accessed to provide meaningful information on Pre-Service training programs. Mixed method approach was employed and concurrent triangulation strategy was used to view the phenomena holistically. Mixed method research design based upon concurrent triangulation strategy was used as a research design. This strategy was selected because the result of this strategy were validated as well as sustained. Moreover, it required simple design and data analysis procedures. In concurrent triangulation strategy the Qualitative as well as Quantitative approaches were used to "conform" cross-validate and corroborate findings within a single study' (Creswell, 2003). All the student teachers enrolled in B. Ed (Hons), teacher educators and administrators were population of the study. Sample of study were drawn through purposive sampling. Data were collected by using questionnaires, interviews, focus groups discussions, and direct observations. A team of expert researchers validated these instruments. Questionnaire was designed for student teachers doing teaching practice. Close and open ended questions were part of the questionnaire. Observation sheet was developed and utilized for identifying the pedagogical approaches of the teacher educators as well as prospective teachers. Open ended questions were consultation with experts to design the interview. Focus group discussion was arranged with student teachers in the practicing institutes. Quantitative data were analyzed through SPSS while qualitative data were

analyzed through thematic analysis. Major findings of the study are; majority of the respondents agreed that lesson study develops lesson, teaching, and student learning. Lesson study positively impacts on teachers pedagogical strategies, content knowledge, skills, and improving students' academic achievements through content knowledge, subject matter, and reflection. Lesson study focused on specific goals, pre-determined goals and teacher generated goals. Lesson study assisted teachers to produce quality education, quality lesson plan and better understanding of student learning. Lesson study provided an opportunity to the students for academic achievements through observation, reflection and practice. Lesson study developed instruction that ensures basic academic abilities, fosters their individuality and meets individual needs. Lesson study provides opportunities for teachers to develop their knowledge, skills and teaching. Lesson study strengthens teacher's knowledge of subject matter, instruction, and capacity to observe student, examining teaching at the classroom level allows deeper understanding of the curriculum and student's learning. It is recommended that, pilot studies be conducted and encouraged in order to introduce the lesson study in the public schools at all levels. Teacher training institutes may include lesson study in the course outlines as a key professional development technique. It may be made compulsory for the teacher educators to perform and practice lesson study during their teaching practices. Teachers without any prior professional qualification may excessively use lesson study in order to ensure the teaching-learning process more effectively, efficiently as well as fruitfully.

5.2 Findings

Following were the findings of the study:-

1. According to the table 3, 77.8% student teacher were agreed, 13.3% were uncertain, while 8.9% disagreed, with statement 'while teaching your teacher applies reflection'. 79.3% student teachers agreed, 14.8% uncertain, and 5.9% disagreed with statement

‘while teaching your teacher applies Thinking Critically’. 76.3% student teachers agreed, 18.5% uncertain, and 5.2% disagreed with statement ‘while teaching teacher applies Discussion’. Most of the prospective teachers were agreed and have positive responses towards the statement that while teaching the teacher applied approaches i.e reflection, thinking, critically and discussion.

2. As per table 4, 77.8% student teachers were agreed, 11.9% were uncertain, while 10.4% were disagreed, with statement ‘Lesson study is considered: Professional development’. 82.2% student teachers were agreed, 7.4% were uncertain, and 10.4% were disagreed with statement ‘Lesson study is considered developing and sharing practices’. 91.1% student teachers were agreed, 7.4% were uncertain, and 1.5% were disagreed with statement ‘Lesson study is considered to improve student progresses. Majority of the prospective teachers were agreed and positive responses towards the statement that lesson study is considered, professional development, developing and sharing practices, improve student progress.
3. Table 5 revealed that 91.7% student teacher were agreed, 11.9% were uncertain, while 7.4% were disagreed, with statement ‘Lesson Study is a social process: To learn’. 80.7% student teachers were agreed, 11.9% were uncertain, and 10.4% were disagreed with statement ‘Lesson Study is a social process: to collaborate’. 85.2% student teachers were agreed, 14.1% were uncertain, and 0.7% were disagreed with statement ‘Lesson Study is a social process to improve teaching practices’. Majority of the prospective teachers were positive responses towards the statement that lesson study is a social process: to learn, to collaborate, to improve teaching practices.
4. According to table 6, 88.1% student teacher were agreed, 8.9% were uncertain, while 3.0% were disagreed, with statement ‘in classroom lesson study is an effective tool for: Lesson planning’. 79.3% of student teachers were agreed, 9.6% were uncertain,

and 11.1% were disagreed with statement ‘in classroom lesson study is an effective tool for: Lesson presentation’. 72.6% student teachers were agreed, 11.1% were uncertain, and 16.3% were disagreed with statement ‘in classroom lesson study is an effective tool for: Lesson evaluation. Most of the prospective teachers have positive responses towards the statement that in classroom lesson study is effective tool for lesson planning, lesson presentation and lesson evaluation.

5. Table 7 reflects that 80.7% student teacher were agreed, 14.8% were uncertain, while 4.4% were disagreed, with statement ‘Teachers participating in lesson study to put themselves in the cycle of planning’. 80.0% of student teachers were agreed, 14.8% were uncertain, and 5.2% were disagreed with statement ‘Teachers participating in lesson study to put themselves in the cycle of: Observing’. 77.0% student teachers were agreed, 16.3% were uncertain, and 6.7% were disagreed with statement ‘Teachers participating in lesson study to put themselves in the cycle of revising’. Majority of the prospective teachers were positive responses towards the statement that teachers participating in lesson study to put themselves in the cycle of planning, observing and revising.
6. According to the table 8, 80.4% student teacher were agreed, 3.0% were uncertain, while 12.6% were disagreed with statement that ‘Life-long goals often include social skills’. 90.4% of student teachers were agreed, 5.9% were uncertain, and 3.7% were disagreed with statement that ‘Life-long goals often include learning skills’. 77.0% student teachers were agreed, 8.9% were uncertain, and 14.1% were disagreed with statement ‘Life-long goals often include content knowledge’. Majority of the prospective teachers have positive responses towards the statement that life-long goals often include social skills, learning skills and content knowledge.

7. As per table 9, 83.7% student teacher were agreed, 8.9% were uncertain, while 7.4% were disagreed, with statement ‘Lesson study as a process for examining: Practices,’ 84.4% of student teachers were agreed, 8.1% were uncertain, and 7.4% were disagreed with statement ‘Lesson study as a process for examining professional development’. 77.0% student teachers were agreed, 14.1% were uncertain, and 8.9% were disagreed with statement ‘Lesson study as a process for examining cognitive development’. Most of the prospective teachers were agreed to the statement that lesson study is a process for examining practices, professional development as well as cognitive development.
8. According to the table 10, 80.0% student teacher were agreed, 12.6% were uncertain, while 7.4% were disagreed with statement ‘Lesson study promotes reflection on lesson,’ 69.6% of student teachers were agreed, 15.6% were uncertain, and 14.8% were disagreed with statement ‘Lesson study promotes reflection on teaching’. 84.4% student teachers were agreed, 6.7% were uncertain, and 8.9% were disagreed with statement that ‘Lesson study promotes reflection on student learning’. Majority of the prospective teachers have positive responses to the statement that lesson study promotes reflection on: lesson, teaching, and student learning.
9. According to table 11, 83.7% student teacher were agreed, 11.1% were uncertain, while 5.2% were disagreed with statement that ‘Lesson study positively impacts on teachers Pedagogical Strategies,’ 85.2% of student teachers were agreed, 9.6% were uncertain, and 5.2% were disagreed with statement ‘Lesson study positively impact on teachers Content Knowledge’. 81.1% student teachers were agreed, 10.4% were uncertain and 1.5% were disagreed with statement ‘Lesson study positively impact on teachers Skills’. Majority of the prospective teachers have positive responses to the

statement that lesson study positively impacts on teacher's pedagogical strategies, content knowledge and skills.

10. According to table 12, 84.4% student teachers were agreed, 4.4% were uncertain, while 11.1% were disagreed with statement that 'Lesson study positively impacts on students' motivation'. 80.0% of student teachers were agreed, 8.9% were uncertain, and 11.1% were disagreed with statement that 'Lesson study positively impacts on students' engagement'. 87.4% student teachers were agreed, 8.3% were uncertain, and 9.4% were disagreed with statement that 'Lesson study positively impacts on students' skills development'. Majority of the prospective teachers have positive responses to the statement that lesson study positively impacts on students' motivation, engagement and skills development.
11. As per table 13, 79.3% student teachers were agreed, 11.8% were uncertain, while 8.9% were disagreed, with statement that 'Improving students' academic achievements through Content Knowledge. 84.4% of student teachers were agreed, 6.7% were uncertain, and 8.9% were disagreed with statement that 'Improving students' academic achievements through Subject Matter'. 81.5% student teachers were agreed, 11.1% were uncertain, and 7.4% were disagreed with statement that 'Improving students' academic achievements through Reflection'. Most of the prospective teachers were agreed to the statement that lesson study improves students' academic achievements through: content knowledge, subject matter and reflection.
12. According to table 14, 76.3% student teachers were agreed, 17.8% were uncertain, while 5.9% were disagreed, with statement that 'Engagement of students for academic achievement through work as a team'. 83.7% of student teachers were agreed, 8.1% were uncertain, and 8.1% were disagreed with statement that 'Engagement of student for academic achievement through collaborative work'. 83.7% student teachers were

agreed, 5.9% were uncertain, and 10.4% were disagreed with statement that 'Engagement of students for academic achievement through Sharing Practices'. Most of the prospective teachers were agreed to the statement that engagement of students for academic achievement through work as a team, work collaboratively and sharing practices.

13. Table 15 reveals that 90.4% student teachers were agreed, 5.2% were uncertain, while 4.4% were disagreed with statement that 'Motivation towards the academic achievements of students build student understanding'. 89.6% of student teachers were agreed, 7.4% were uncertain, and 3.0% were disagreed with statement that 'Motivation towards the academic achievements of students encourage students'. 80.0% student teachers were agreed, 4.4% were uncertain and 15.6% were disagreed with statement that 'Motivation towards the academic achievements of students build student understanding, Encourage students, Respect student's views'. Greater majority of the prospective teachers have positive responses to the statement that motivation towards the academic achievements of students builds student understanding, encourage students and respect student's views.
14. According to table 16, 72.6% of the student teachers were agreed, 15.6% were uncertain, while 11.9% were disagreed, with statement that 'Lesson study can be individualized to meet the needs of Specific Classroom'. 76.3% of student teachers were agreed, 20.0% were uncertain and 3.7% were disagreed with statement that 'Lesson study can be individualized to meet the needs of students. 70.4% student teachers were agreed, 20.7% were uncertain and 8.9% were disagreed with statement that 'Lesson study can be individualized to meet the needs of teachers. Most of the prospective teachers were agreed to the statement that lesson study can be individualized to meet the needs of specific classroom, students and teachers.

15. Table 17 reflects that 87.4% student teachers were agreed, 11.9% were uncertain, while 0.7% were disagreed with statement that ‘by the help of pedagogical practices teachers can share knowledge with colleagues. 79.3% of student teachers were agreed, 15.6% were uncertain and 5.2% were disagreed with statement that ‘by the help of pedagogical practices teachers can share experiences with colleagues’. 84.4% student teachers were agreed, 11.9% were uncertain and 3.7% were disagreed with statement that ‘by the help of pedagogical practices teachers can share practices with colleagues’. Most of the prospective teachers were agreed to the statement that by the help of pedagogical practices teachers can share knowledge with colleagues, share experiences with colleagues and share practices with colleagues.
16. Table 18 reflects that 69.6% student teachers were agreed, 15.6% were uncertain, while 14.8% were disagreed, with statement that ‘Lesson study is authentic classroom lesson which focuses on specific goals’. 70.4% of student teachers were agreed, 20.7% were uncertain and 8.9% were disagreed with statement that ‘Lesson study is an authentic classroom lesson which focuses on Pre-determined goals’. 67.4% student teachers were agreed, 29.6% were uncertain and 3.0% were disagreed with statement that ‘Lesson study is an authentic classroom lesson which focuses on the Teacher-generated goals’. Most of the prospective teachers have positive responses to the statement that lesson study is an authentic classroom lesson which focuses on specific goals, pre-determined goals and teacher-generated goals.
17. Table 19 presents that 84.4% student teacher were agreed, 8.1% were uncertain, while 7.4% were disagreed with statement that ‘Lesson study was designed to assist teachers to produce quality education’. 91.1% of student teachers were agreed, 8.1% were uncertain, and 0.7% were disagreed with statement that ‘Lesson study was designed to assist teachers to produce quality lesson plan’. 86.7% student teachers

were agreed, 11.1% were uncertain, and 2.2% were disagreed with statement that 'Lesson study was designed to assist teachers to produce better understanding of students learning'. Most of the prospective teachers were agreed to the statement that lesson study was design to assist teachers to produce quality education, quality lesson plan and better understanding of student learning.

18. Table 20 reflects that 85.9% student teachers were agreed, 7.4% were uncertain, while 6.7% were disagreed with statement that 'Lesson study provides an opportunity for academic achievement of the students through observation'. 79.3% of student teachers were agreed, 14.1% were uncertain and 6.7% were disagreed with statement 'Lesson study provides an opportunity for academic achievement of the students through observation, reflection, and practicing'. 78.5% student teachers were agreed, 16.3% were uncertain, and 5.2% were disagreed with statement that 'Lesson study provides an opportunity for academic achievement of the students through practicing'. Most of the prospective teachers have positive response to the statement that lesson study provides an opportunity for academic achievement of the students through observation, reflection and practicing.
19. According to table 21, 83.7% student teachers were agreed, 8.9% were uncertain, while 7.4% were disagreed with statement that 'Lesson study develops instruction that ensures basic academic abilities'. 73.3% of student teachers were agreed, 21.5% were uncertain and 5.2% were disagreed with statement that 'Lesson study develops instruction that fosters their individuality'. 75.6% student teachers were agreed, 17.8% were uncertain, and 6.7% were disagreed with statement that 'Lesson study develops instruction that meets individual needs'. Most of the prospective teachers were agreed to the statement that lesson study develops instructions that ensures basic academic abilities, fosters their individuality, and meets individual needs.

20. Table 22 presents that 77.0% student teacher were agreed, 11.9% were uncertain while 11.1% were disagreed, with statement that ‘Increase students’ interest in lesson through teaching’. 78.5% of student teachers were agreed, 13.3% were uncertain, and 8.1% were disagreed with statement that ‘Increase students’ interest in lesson through pedagogy’. 84.4% student teachers were agreed, 6.7% were uncertain and 8.9% were disagreed with statement that ‘Increase students’ interest in lesson through Learning’. Most of the prospective teachers have positive responses to the statement that increase students’ interest in lesson through teaching, pedagogy and learning.
21. Table 23 reveals that 11.9% student teachers were uncertain, while 5.9% were disagreed, with statement ‘Lesson study is a process building of Knowledge’. 85.2% of student teachers were agreed, 7.4% were uncertain, and 7.4% were disagreed with statement ‘Lesson study is a process building of: Skills’. 90.4% student teachers were agreed, 3.0% were uncertain, and 6.7% were disagreed with statement ‘Lesson study is a process building of learning’. Most of the prospective teachers have positive responses to the statement that lesson study is a process building of: knowledge, skills, and learning.
22. Table 24 presents that 85.2% student teachers were agreed, 6.7% were uncertain, while 8.1% were disagreed, with statement that ‘Teacher professional development driven by curriculum change’. 88.1% of student teachers were agreed, 4.4% were uncertain and 6.7% were disagreed with statement that ‘Teacher professional development driven by new classroom technology’. 88.1% student teachers were agreed, 7.4% were uncertain, and 4.4% were disagreed with statement that ‘Teacher professional development driven by advance in pedagogy’. Most of the prospective teachers were agreed to the statement that teacher professional development driven by curriculum change, new classroom technology, and advance in pedagogy.

23. Table 25 reveals that 87.4% student teachers were agreed, 10.4% were uncertain, while 3.0% were disagreed, with statement ‘Lesson study enables teachers to build their understanding’. 89.6% of student teachers were agreed, 8.1% were uncertain, and 2.2% were disagreed with statement that ‘Lesson study enables teachers to build their skills’. 80.7% student teachers were agreed, 12.6% were uncertain and 6.7% were disagreed with statement that ‘Lesson study enables teachers to build their trust’. Most of the prospective teachers were agreed to the statement that lesson study enables teachers to build their: understanding, skills and trust.
24. According to table 26, 83.0% student teachers were agreed, 12.6% were uncertain, while 4.4% were disagreed with statement that ‘Lesson study strengthens teacher’s knowledge of subject matter’. 73.3% of student teachers were agreed, 21.5% were uncertain and 5.2% were disagreed with statement that ‘Lesson study strengthens teacher’s knowledge of instruction’. 82.2% student teachers were agreed, 14.1% were uncertain and 3.7% were disagreed with statement that ‘Lesson study strengthen teacher’s knowledge of capacity to observe students’. Most of the prospective teachers have positive responses to the statement that Lesson Study strengthens Teacher’s Knowledge of subject matter, instruction and capacity to observe students.

5.3 Conclusions

On the basis of findings following conclusions were drawn:-

1. Lesson study positively impacts on teachers’ pedagogical strategies, content knowledge, skills, improving students’ academic achievements through content knowledge, subject matter and reflection.
2. Lesson study is an authentic classroom lesson which focuses on specific goals, Pre-determined goals and teacher-generated goals; lesson study assists teachers to

produce quality education, quality lesson plan and better understanding of students' learning.

3. Lesson study assists teachers to produce quality education, quality lesson plan, and better understanding of student learning. Lesson study provides an opportunity for academic achievement of the students through observation, reflection and practicing.
4. Lesson study develops instruction that ensures basic academic abilities, fosters their individuality and meets individual needs. Lesson study provides opportunities to teachers to develop through knowledge, skills and teaching.
5. Lesson study strengthens teacher's knowledge of subject matter, instruction, and capacity to observe student, examining teaching at the classroom level allows for deep understanding about curriculum and students' learning.
6. Majority of the teacher educators were agreed and gave positive responses with statements that in lesson study process students understanding of teacher's instructions, activeness of students, students are adequately prescribed background knowledge, students respond actively to the teaches questions, students asks questions to the teacher during class, students appreciate opinions of each other during class, and students feel comfortable and enjoyable in attending the class.
7. Therefore, it is concluded that lesson study is not only important for students, but it is also important for teachers. With the help of lesson study teachers become professionally strong.
8. Majority of the respondents have advocated some advantages of the lesson study e.g deeper understanding of curriculum content; rich discussion of teaching strategies with a focus on student needs; professional collegiality and appreciation of the insights shared by colleagues; increased knowledge of instruction; increased capacity

for meaningful observation of teaching and learning; increased confidence that a lesson is well-planned and increased ability to observe students.

9. Few others have enumerated some disadvantages, which are peer observation may put the teacher under pressure; difficulty in sparing time for the scheduling of meetings, lesson planning and lesson observations and lack of time are the main impediments in the lesson study.

5.4 Recommendations

Following major recommendations may be given on the basis of findings and conclusions of this study:-

1. Pilot studies may be conducted and encouraged in order to introduce the lesson study in the public schools at all levels.
2. Government Colleges for Elementary Teachers (GCETs) and other teacher training institutes may include lesson study in the course outlines as a key professional development technique.
3. It may be made compulsory for the teacher educators to perform and practice lesson study during their teaching practices.
4. Teachers without any prior professional qualification may excessively use lesson study in order to ensure the teaching-learning process more effectively, efficiently and fruitfully.
5. Teacher training institutions should make lesson study part and parcel of the promotion linked training.
6. Lesson study may be introduced as well as excessively practiced in the teacher training programmes of the continuous professional development.
7. By implementing lesson study in technical as well as vocational education, maximum outcome may be obtained.

8. District educational administration may create maximum opportunities for the execution of lesson study so as to make the stakeholders well versed with this technique.
9. The district education authorities should allocate sufficient amount of budget for the implementation and execution of the lesson study as a key professional development technique.
10. Headmasters' and principals' support is very important to ensure a successful Lesson Study process. School heads as well as principals should take keen interest, create opportunities and encourage lesson study in their own schools.
11. Funds may be allocated by the concerned educational agencies to promote research regarding lesson study approach.
12. Further researches on different aspects of lesson study should be carried out by the academia and concerned stakeholders.

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Appendix 'A'

Questionnaire for Student Teachers

Name (Optional): _____ University/Institute: _____

Gender: _____ Academic Qualification: _____

Kindly read the following statements carefully and tick the most appropriate option / answer as per your opinion.

A= Agree **UC= Uncertain** **DA= Disagree**

1. While teaching the teacher applies approaches like:

Reflection	A	UC	DA
Thinking Critically	A	UC	DA
Discussion	A	UC	DA

2. Lesson study is considered:

Professional development	A	UC	DA
Developing and sharing practices	A	UC	DA
Improve student progress	A	UC	DA

3. Lesson Study is a social process:

To learn	A	UC	DA
To collaborate	A	UC	DA
To improve teaching practices	A	UC	DA

4. In classroom lesson study is an effective tool for:

Lesson planning	A	UC	DA
Lesson presentation	A	UC	DA
Lesson evaluation	A	UC	DA

5. Teachers participating in lesson study to put themselves in the cycle of:

Planning	A	UC	DA
Observing	A	UC	DA
Revising	A	UC	DA

6. Life-long goals often include:

Social Skills	A	UC	DA
Learning skills	A	UC	DA
Content Knowledge	A	UC	DA

7. Lesson study is a process for examining:

Practices	A	UC	DA
Professional Development	A	UC	DA
Cognitive Development	A	UC	DA

8. Lesson study promotes reflection on:

Lesson	A	UC	DA
Teaching	A	UC	DA
Student learning	A	UC	DA

9. Lesson study positively impact on teachers:

Pedagogical Strategies	A	UC	DA
Content Knowledge	A	UC	DA
Skills	A	UC	DA

10. Lesson study positively impact on student's:

Motivation	A	UC	DA
Engagement	A	UC	DA
To Develop Skills	A	UC	DA

11. Lesson study is helpful in improving students' academic achievements through:

Content Knowledge	A	UC	DA
Subject Matter	A	UC	DA
Reflection	A	UC	DA

12. Lesson study is helpful in engagement of student for academic achievement through:

Work as a team	A	UC	DA
Work collaboratively	A	UC	DA
Sharing Practices	A	UC	DA

13. Lesson study is helpful in motivation towards the academic achievements of students through:

Build student understanding	A	UC	DA
Encourage students	A	UC	DA
Respect student's views	A	UC	DA

14. Lesson study can be individualized to meet the needs of:

Specific Classroom	A	UC	DA
Students	A	UC	DA
Teachers	A	UC	DA

15. By the help of pedagogical practices teachers can:

Share knowledge with colleagues	A	UC	DA
Share experiences with colleagues	A	UC	DA
Share practices with colleagues	A	UC	DA

16. Lesson study is authentic classroom lesson which focused on:

Specific goals	A	UC	DA
Pre-determined goals	A	UC	DA
Teacher-generated goals	A	UC	DA

17. Lesson study was designed to assist teachers to produce:

Quality education	A	UC	DA
Quality lesson plan	A	UC	DA
Better understanding of student learning	A	UC	DA

18. Lesson study provides an opportunity for academic achievement of the students through:

Observation	A	UC	DA
Reflection	A	UC	DA
Practicing	A	UC	DA

19. Lesson study develop instruction that ensures:

Basic academic abilities	A	UC	DA
Foster their individuality	A	UC	DA
Meet individual needs	A	UC	DA

20. Lesson study increase students' interest in lesson through:

Teaching	A	UC	DA
Pedagogy	A	UC	DA
Learning	A	UC	DA

21. Lesson study is a process building of:

Knowledge	A	UC	DA
Skills	A	UC	DA
Learning	A	UC	DA

22. Teacher professional development driven by:

Curriculum change	A	UC	DA
New classroom technology	A	UC	DA
Advance in Pedagogy	A	UC	DA

23. Lesson study enables teachers to build their:

Understanding	A	UC	DA
Skills	A	UC	DA
Trust	A	UC	DA

24. Lesson study strengthen teacher's knowledge of:

Subject matter	A	UC	DA
Instruction	A	UC	DA
Capacity to observe students	A	UC	DA

Appendix 'B'

OBSERVATION WORKSHEET FOR "LESSON STUDY"

Institute :

Class :

Semester :

Time of implementation :

Agree=A, Strongly Agree=SA, Undecided=UN, Disagree=DA, Strongly Disagree=SDA

OBSERVATION OF LEARNING PROCESS						
	Statements	**A**	**SA**	**UN**	**DA**	**SDA**
1.	Do the students understand the teacher's instructions?					
2.	Are the students equally active?					
3.	Do the students have the background knowledge about the material that will be given?					
4.	Are the students adequately supplied with background knowledge?					
5.	Do the students respond actively to the teacher's questions?					
6.	Are the students asking questions to the teacher?					
7.	Do the students appreciate other students' opinion?					
8.	Do the students feel comfortable and enjoyable in attending the class?					

Appendix ‘C’

Focused Group Discussion Questions

Q1: Using the lesson study process, are your pedagogical skills changing?

Q2: How have you experienced the process of lesson study with peers and students?

Q3: What new methods of teaching you have developed from working within lesson the Study framework?

Q4: How do you feel lesson study has affected student achievement?

Q5: The lesson study process is a good tool for teacher professional development?

Q6: What do you think are the advantages of the lesson study process?

Q7: What do you think are the disadvantages of the lesson study process?

Q8: Using the lesson study process, is your content knowledge changing?

Q9: What are your thoughts about how lesson study in your school might improve the learning of difficult lessons, if any?

Q10: I feel more comfortable teaching lessons with observers in the classroom as a result of the Lesson Study Process.

Appendix D

Interviews for Teacher Educators

Name: (Optional): _____ Designation: _____
Gender: _____ Academic Qualification: _____
University/Institute: _____ Experience: _____

1. Do you feel that Lesson Study can affect student learning? How?
   _____
   _____
2. Using the Lesson Study Process, is your content knowledge changing?
   _____
   _____
   _____
3. What are the perspectives of teachers of the impact of Lesson Study on their students 'achievement?

_____
_____

4. What are the teachers 'perspectives on the impact of Lesson Study on content knowledge?

_____
_____

5. What are the perspectives of teachers of the impact of Lesson Study on pedagogical knowledge?

_____
_____

6. The lesson study is a good tool for teacher professional development?

_____
_____

7. What do you think are the advantages of the lesson study process?
   _____
   _____
8. What do you think are the disadvantages of the lesson study process?
   _____
   _____