CHAPTER I

INTRODUCTION

Teachers are the backbone of any country, the pillar upon which all aspirations are converted into realities.

APJ Abdul Kalam

1.1 Introduction

"*Teachers truly shape the future of our children - and, therefore, the future of our nation. It is because of this noblest role that the teacher in India was the most respected member of society. Only the very best and most learned became teachers. Society gave teachers, or gurus, what they needed to pass on their knowledge, skills, and ethics optimally to students.*" New Education Policy (2020) [1]

Teachers are the most vital resource in every educational institution. The quality of education is determined by the quality of the teachers and the teaching they provide. "Even the best curriculum and the perfect syllabus remain dead unless quickened into life by right methods of teaching and the right kind of teachers"- Secondary Education Commission 1952-53.[2]

" The status of the teacher reflects the socio-cultural ethos of society; it is said that no people can rise above the level of its teachers." The National Policy on Education (1986) [3]. It has been widely acknowledged that teachers are the backbone of any educational system and play a critical role in defining the country's destiny. Teachers are the torchbearers for social harmony, national integration, as well as for the evolution of a rich learning environment. They create and generate new knowledge as well as disseminate existing knowledge.

The Delors Report (1997) [4] also reflected similar thoughts, It upheld the primacy of the formal education system and the significant role of the teacher by observing, 'nothing can replace the formal education system, where each individual is introduced to the many forms of knowledge' and that 'there is no substitute for a teacher pupil relationship' and it is a teacher who is responsible 'to impart to the pupil the

knowledge that humankind has acquired about itself and about nature and everything of importance that it has created and invented'.

The significance of teachers' roles as change agents, promoting understanding and tolerance, has become clearer in recent years. This imposes enormous responsibilities on teachers, who play a role in shaping the character and minds of the next generation. Teachers are regarded as the true nation builders, capable of keeping the flame of civilisation alight by passing down intellectual traditions and technical skills from generation to generation. The teacher's role in education used to be confined to a defined curriculum, specific instructions on how to teach and standard teaching methods for all students. With time this role evolved from beyond just executing lesson plan to a multifaceted role. Their job is to counsel students, help them learn how to use their knowledge and integrate it into their lives so that they will become valuable members of society. Teachers are encouraged to adapt learning methods to each individual student's learning, to challenge and inspire them to learn. A teacher's job is clearly more than just planning and carrying out lesson plans. The role of a teacher has evolved beyond simply being an instructor to be a facilitator of knowledge.

According to Harmer, J. (2007), the term "facilitator" is used to describe a specific type of teacher, one who is democratic (where the teacher shares some of the leadership with the students) rather than autocratic (where the teacher controls everything that happens in the classroom), and one who fosters learner autonomy (where students not only learn on their own but also teach others) through the use of group and pair work and by acting as more of a resource than a transmitter of knowledge.[5]

The National Curriculum Framework 2005 expects a teacher to be a facilitator and evaluator of children's learning in a manner that helps children to construct knowledge and meaning. Apart from instructional roles as collaborator and facilitator, a teacher functions today as a learner, counsellor, manager, assessor and innovator.[6]

As per National Curriculum Framework for Teacher Education (NCFTE), 2009 the role of teachers is considered to view learners as active participants in their learning and not as mere recipients of knowledge. Teachers are also envisioned to organize

learner-centric, activity based and participatory learning experiences, such as play, projects, discussions, dialogues, observation, institutional visits, integrating academic learning with productive work. [7] National Education Policy 2020 acknowledges "teachers and faculty as the heart of the learning process" [8]

1.2 Teacher Education in India

Educational institutions have a vital role in offering learning experiences that lead students out of the darkness of ignorance and into the light of knowledge. Teachers are important employees who will aid in the implementation of this shift. The most crucial part of any educational programme is the teachers. At every stage of the learning process, teachers are in charge of execution. It is impossible to underestimate the value of competent teachers to the national education system.

As per National Council for Teacher Education (NCTE) Act, 1993 "Teacher Education is a programme of education, research and training for equipping teachers to teach at pre-primary, primary, secondary and senior secondary stages in schools, and includes non- formal education, part- time education, adult education and corresponding education." [9]

According to C.V. Good (1973), "Teacher education means all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively." [10] As a result, it can be argued that teacher education is a programme concerned with the development of teacher proficiency and competency in prospective teachers in order for them to be able to meet the requirements of the teaching profession.

1.2.1 Objectives of Teacher Education

The objectives of the teacher education are:[113]

➢ To acquaint teachers with various teaching methods.

➢ Improving skills in identifying, selecting, and organising learning experiences that can be used in formal and informal settings.

➢ Have sufficient theoretical and practical knowledge of organising learning experiences for general and specific subject teaching.

➢ Recognize the role of the teacher and the school in changing society.

➢ Provide opportunities for self-learning, reflection, assimilation, and articulation of new concepts, as well as the development of self-directed learning capabilities and the ability to think, be self-critical and collaborate in groups.

➢ Provide opportunities for self-awareness, self-evaluation, adaptation, flexibility, creativity, and invention, as well as improving the ability to comprehend oneself and others (including one's beliefs, assumptions, and emotions).

➢ Engage in exploratory projects and action research.

➢ To assist future teachers in understanding children's social, cultural, linguistic, and political contexts.

➢ To provide continuous learning opportunities for future teachers.

➢ To assist them in understanding individual and learning differences in children.

➢ To foster an understanding that knowledge is a reflective process that leads to the learner's continuous development.

➢ To foster the development of social responsibilities.

➢ To examine the curricular framework, policy implications, and texts.

➢ For developing sound knowledge base and proficiency in teaching. ·

➢ Provide opportunities to develop professional skills in pedagogy, observation, documentation, analysis, drama, craft, story-telling and reflective inquiry.

1.2.2 Nature of Teacher Education:

▪ Teacher education is an ongoing process and its pre-service and service components complement each other.

- Teacher education is based on the theory that "Teachers are made, not born" in contrary to the assumption, "Teachers are born, not made". Since teaching is considered an art and a science, the teacher has to acquire not only knowledge, but also skills that are called "tricks of the trade."

- It is thorough and extensive. It intends to engage in a range of community programmes and extension activities, particularly adult and informal education programmes, community literacy, and development activities, in addition to teacher services and service programmes.

- It is ever-changing and dynamic. Teacher education must keep up with current advances and trends in order to produce teachers who are competent to tackle the demands of a dynamic society.

- The curriculum, design, structure, organisation, and transaction modalities, as well as the extent to which it is suitable, are the centre of the entire teacher education process.

- The teacher education curriculum, like other professional education programmes, contains a knowledge foundation that is attentive to the demands of field applications and includes meaningful, conceptual blending of theoretical understanding from various related fields.

- Teacher education has become differentiated into stage-specific programmes. This suggests that the knowledge base is adequately specialized and diversified across stages, which should be utilized for developing effective processes of preparing entrant teachers for the functions which a teacher is expected to perform at each stage.

- It is a system in which the inputs, processes, and outputs are all interdependent. [112]

1.2.3 Types of Teacher Training

1. Pre-Service Training

Pre-Service training is the education that occurs before entering into the teaching profession or before taking up of employment in educational institutions. It can also be said as first step to in-service education. Pre-Service teacher education provides a key opportunity to gain knowledge, skills and attitudes which are required to serve in the education system.

2. In-Service Training

In-Service education begins after entering into the teaching profession. The moment a teacher has completed his training in a college of education, it does not mean that she/ he is trained for all time to come. She/ He needs to continuously update their curriculum knowledge & pedagogical skills for professional development. For this several formal and informal programmes of in-service education is organised from time to time by various agencies.

Since independence, India's teacher education system has developed by leaps and bounds, with branches all over the country. The quality of teacher education system does not seem to have matched the pace of growth and thus this has been a point of concern by almost all the major education commissions and policies. Invariably each of the commission expressed their concern regarding the quality of teacher education and the theory-gap divide in the teacher education practices (Batra, 2011).[11]

1.2.4 Teacher Education in Post Independent India

Secondary Education Commission/ Mudaliar Commission (1952-1953): A Commission was setup under the chairmanship of Dr. A. Lakshmanaswami Mudaliar in October 1952 and submitted its report in June 1953. It expressed its concern over the Teachers and their status also on teacher training. Some of the major recommendations of the commissions are as follows:[12]

- There should be only two types of institutions for teacher training.

  I.   For those who have taken the school Leaving Certificate or Higher Secondary School Leaving Certificate, for whom the period of training should be of two years; and

  II. For graduates for whom the training may, for the present, be of one academic year, but extended as a long-term programme to two academic years.

- Graduate teacher training institutions should be recognized by and affiliated to the universities which should grant degrees, while the secondary grade training institutions should be under the control of a separate board appointed for the purpose.

- The teacher trainee should receive training in one or more co-curricular activities.

- Importance should be attached to teaching practice in schools.

- During the period of training all the pupil-teachers should be given suitable stipend by the state.

- The training colleges should, as a normal part of their work, assist to the in-service teacher training by providing the following: (i) Refresher Courses, (ii) Short Intensive Courses in special subjects, (iii) Work-Shop, (iv) Seminars and (v) Professional Conferences.

- Training institutions should be in close with the Department of Education and the schools.

- For research work in all aspects of pedagogy, every training college should have under its control an experimental or demonstration school.

- Recruitment to training colleges should be carefully made so as to admit only those who hold the highest promise of becoming successful teachers.

- The commission strongly advocates residential type of training colleges for all students. All these colleges should provide adequate residential facilities to cultivate community life and foster self-reliance.

- In order to meet the shortage of women teachers, special part-time training courses should be provided.

- Teachers possessing same qualifications and performing same work should be treated alike as far as salary is concerned.

Indian Education Commission/ Kothari Commission (1964 -1966): It was setup in 1964 and was headed by Dr. D.S Kothari to advise the Government on national pattern of education and on general principles and policies for the development of education in all aspects. Report was submitted in 1966 and commission called for drastic reconstruction of Indian education. For teacher education the commission recommended that the professional preparedness of teachers being crucial for the qualitative improvement of education, the commission has urged that this should be

treated as key – area in educational development and adequate financial provisions should be made for it. It further recommended:[13]

- Teacher Education programme should be improved.

- New professional courses should be developed to orientate headmasters, teachers and educators and educational administrators to their special field of work.

- The post graduate courses in education should be flexible and be planned to promote an academic and scientific study of education.

National Policy on Education (NPE, 1986): The policy asserted that "the government and community should endeavour to create conditions which will help and inspire teachers on constructive and creative lines". Following recommendations were made for the teacher and teacher education :[14]

- Teacher should have the freedom to innovate, to devise appropriate methods of communication and activities relevant to the needs and capabilities of and the concerns of the community.

- Methods of recruitment of teachers will be reorganised to ensure objectivity, merit and conformity with spatial and functional requirements.

- A system of teacher evaluation – open, participative and data - based will be created and reasonable opportunities of promotion to higher grades provided. Norms of accountability will be laid down with incentives for good performance and disincentives for non-performance. Teachers will continue to play a crucial role in the formulation and implementation of educational programmes.

- Teachers' associations must play a significant role in upholding professional integrity, enhancing the dignity of teacher and in curbing professional misconduct. National level associations of teachers, could prepare a code of professional ethics for teachers and see to its observance.

- Teacher education is a continuous process, and its pre-service and in-service components are inseparable. As the first step , the system of teacher education will be overhauled.

- The new programmes of teacher education will emphasise continuing education and the need for teachers to meet the thrusts envisaged in this policy.

- District Institute of Education and Training (DIET) will be established with the capability to organize pre-service and in -service courses for elementary school teachers and for the personnel working in non-formal and adult education. As DIETs get established, sub-standard institutions will be phased out.

- Selected Secondary Teacher Training Colleges will be upgraded to complement the work of State Council of Educational Research and Training (SCERT). The National Council for Teacher Education will be provided the necessary resources and capability to accredit institutions of teacher education and provide guidance regarding curricula and methods.

- Networking arrangements will be developed between institutions of teacher education and university departments of education.

Yashpal Committee (1992-1993): Ministry of Human Resource Development, government of India appointed a committee in 1992 which gave its recommendation in 1993 in report entitled "Learning Without Burden". Regarding teacher and teacher education committee recommended:[15]

- Inadequate programme of teacher preparation leads to unsatisfactory quality of learning in schools. The B.Ed. programme should offer the possibility of specialization in secondary or elementary or nursery education.

- The content of the programme should be restructured to ensure its relevance to the changing need of school's education and to make it more practised centred. The emphasis on these programmes should be on enabling the trainees to acquire the ability being a professional course, has to be rigorous, thorough and intensive programme. Therefore, B.Ed. degree courses by correspondence be derecognised.

- The continuing education of teachers should be institutionalised. The organisations of in-service education programmes and other activities aimed at

professional growth of teachers by systematically designed and conducted imaginatively.

National Curriculum Framework 2005:[16] Institutions of higher education have an important role to play in teacher education and in enhancing the professional status not only of secondary school teachers but also elementary school teachers. For the, 'reflective teacher' who possesses the professional competence and orientation that the curriculum framework rests on, it will be necessary to review and restructure teacher education programmes.

Teacher education programmes need to be reformulated and strengthened so that the teacher can be an : - encouraging, supportive and humane facilitator in teaching–learning situations to enable learners (students) to discover their talents, to realise their physical and intellectual potentialities to the fullest, to develop character and desirable social and human values to function as responsible citizens; and - active member of a group of persons who make conscious efforts for curricular renewal so that it is relevant to changing social needs and the personal needs of learners.

 Reformulated teacher education programmes that place thrust on the active involvement of learners in the process of knowledge construction, shared context of learning, teacher as a facilitator of knowledge construction, multidisciplinary nature of knowledge of teacher education, integration theory and practice dimensions, and engagement with issues and concerns of contemporary Indian society from a critical perspective

National Curriculum Framework for Teacher Education (2009-10): The NCFTE, 2009 focused on the following concerns of teacher education before making the Curriculum Framework—[17]

> a. Professionalization of teacher education.
>
> b. Preparing teacher educators.
>
> c. Research and innovation in teacher education.
>
> d. Open and distance learning (ODL) in Teacher Education.
>
> e. Education of teachers in health and physical education.
>
> f. Education of teachers for vocational stream.

Important Dimensions of the Framework

- Reflective practices are considered to be the chief aim of teacher education.

- Pupil-teachers should be provided opportunities for self-learning, reflection, integration and expression of new ideas.

- Developing competencies for self-directed learning and ability to think, be critical and to work collectively.

- Providing adequate opportunities to student-teachers for observing and engaging with children, communicate with and get linked to children.

- The Framework has pointed out the centre of attention, objectives and broad areas of study in terms of academic and practical learning.

- To well execute the curricular operations and assessment related strategies for the various preliminary teacher education programmes.

- The sketch also outlines the elementary issues that should direct formulation of all programmes of these courses. The Framework has emphasized on the approach and methodology of in-service teacher training programmes.

- It has also pin pointed the strategy for implementation of the Framework.

- Teacher education programmes at all stages should provide opportunities to the future teachers for understanding the self, develop sensibilities, the ability for self-analysis and the capacity to reflect.

Justice Verma Committee (2012): The Justice JS Verma Committee (JVC) Report asserted that "apart from augmenting the required capacity to prepare teachers, pre-service programmes require a radical shift in curriculum and institutional design." To create a tangible, sustainable, and scalable impact, we need a system that takes care of the teachers' short- and long-term growth needs. We need a teacher education system that caters to both the pre-service and in-service training needs of teachers. A system that prepares the teachers for present and future needs and simultaneously increases the prestige of the teaching profession. A system that makes teaching more fulfilling and inspires the current and future generations to get into the teaching profession. A system where a teacher can visualise and plan a career progression. A system where teachers can measure and manage their skill set and command their growth as an

outcome of their education and competencies. The committee made the following recommendations for Pre-service Teacher Education:[18]

- In view of acute shortage of institutional capacity of teacher preparation in relation to the demand in the Eastern and North-Eastern region, the Government should:

    - increase its investment for establishing teacher education institutions (TEIs),

    - increase the institutional capacity of teacher preparation

- Government may explore the possibility of instituting a transparent procedure of pre-entry testing of candidates to the preservice teacher education programme.

- Teacher education should be a part of the higher education system

- The duration of teacher education programme needs to be enhanced, in keeping with the recommendations of the Education Commission (1966).

- It is desirable that new teacher education institutions are located in multi and interdisciplinary environment.

- Current teacher education programmes may be redesigned keeping in view the recommendations in the National Curriculum Framework for Teacher Education (NCFTE-2009) and other relevant materials.

- Every pre-service teacher education institution may have a dedicated school attach to it as a laboratory where student-teachers get opportunities to experiment with new ideas and hone their capacities and skills to become reflective practitioners.

- There is a need to establish a national level academic body for continual reflection an analysis of teacher education programmes.

- As a matter of policy, the first professional Degree / Diploma in Teacher Education should be offered only in face-to-face mode. Distance learning programmes to be used for continuing professional development of teachers.

- The institutional capacity should be increased for preparation of teacher educators. There is a need to make the Masters in Education (M.Ed) programme of two year duration with provision for specialisation.

- The NCTE would need to develop broad-based norms qualification of teacher educators.

- The idea of creating opportunities for teaching practitioners to teach in teacher education institutions, as visiting faculty may be explored. Similarly, teacher educators could be considered as visiting faculty in school.

- Faculty development programme for teacher educators should be institutionalized.

- There is need for enhanced investment in promotion of research in education in general, and teacher education in particular in the universities and creation of an Inter- University Centre in Teacher Education.

National Education Policy (NEP, 2020): National Education Policy 2020 envisions an India-Centric education system that contributes directly to transforming our nation sustainably into an equitable and vibrant knowledge society by providing high-quality education to all. The policy has made the following recommendations for Pre-service Teacher Education:[19]

- The National Education Policy recognises and identifies teachers and faculty as the heart of the learning process.

- NEP 2020 recognises that teachers will require training in high-quality content as well as pedagogy.

- The minimum degree qualification for our teachers will be a 4-year integrated B.Ed. degree that teaches a range of knowledge content and pedagogy.

- This degree will also include strong practicum training in the form of student-teaching at local schools.

- Teachers will be given more autonomy in choosing aspects of pedagogy, so that they may teach in the manner they find most effective for the students in their classrooms.

- Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions.

1.3 Internship

Internship is a type of training that allows interns to improve their work performance in the future. It is critical to have practical experience. Interns' knowledge and abilities develop as a result of the training they received during their internship, and their performance improves to an exceptional level.

Graduate or postgraduate students who participate in internships will undoubtedly enhance their personalities. It gives intern hands-on learning experience. It aims to make a reasonably lasting impact in an intern's capacity to function on the job. Interns' knowledge and abilities for doing certain tasks will undoubtedly improve as a result of their internship. The goal of an internship programme is to effect a desired change in a trainee's behaviour.

Internships are practical training. Trainees get greater understanding about teaching and learning or improve the necessary skills, attitudes, and values related with the efficient performance of their work through the internship programme. Internships aid in the modification of knowledge and skills, i.e., what students know and how they will work. Thus, an internship programme is an act of imparting, developing, or upgrading a student's information and abilities that they gain in the form of theory.

1.3.1 School Internship

Any teacher education programme aims to train students with the necessary teaching skills. The practicum technique used in current teacher education courses places a student teacher in a classroom setting under the supervision of a professional teacher. The internship program's goal is to inculcate teaching skills in student teachers. The internship programme is an effective technique to teach student-teachers about the actual job sector. It allows students to integrate theory and practise, appropriately organise and deliver courses, critically examine their own and their colleagues' teaching methods, and improve them based on feedback from supervisors. They get an understanding of the role and duties of professional instructors as a result of this training. Internship programmes also provide them with the opportunity to learn about many areas of the school programme and to develop their skills and talents in the teaching profession. In order to develop student-teacher personalities as actual

professionals in the field of education, an effective and enhanced internship programme is essential. The internship is an educational experience that combines daily classroom experiences, time assigned to work on assignments and test preparation, and time spent coaching extracurricular activities. Student-teacher interns adhere to a school's calendar and collaborate with members of the teaching staff.

According to NCTE, two year B.Ed. curriculum states that "Having gained some experience with the child, the community and schools in Year 1, the second year would offer intensive engagement with the school in the form of School Internship. During the Internship, student-teacher shall work as a regular teacher and participate in all the school activities, including planning, teaching and assessment, interacting with school teachers, community members and children. Before teaching in a classroom, the student-teachers will observe the school and its classrooms for a week, to understand the school in totality, its philosophy and aims, organisation and management; the life of a teacher; needs of the physical, mental, emotional development of children; aspects of curriculum and its transaction; quality, transaction, and assessment of teaching–learning. School Internship shall be designed to lead to the development of a broad repertoire of perspectives, professional capacities, teacher dispositions, sensibilities and skills. Student teachers shall be equipped to cater to diverse needs of learners in schools. Student-teachers are to be actively engaged in teaching at two levels, namely, upper primary and secondary. They should be provided opportunities to teach in government and private schools with systematic supervisory support and feedback from faculty. Internship in schools is to be done for a minimum duration of 15 weeks. This should include an initial phase of one week for observing a regular classroom with a regular teacher and would also include peer observations, teacher observations and observations of interns lessons by faculty. It is important that the student-teachers consolidate and reflect on their teaching experience during and after the school internship. Therefore, along with writing reflective journals during the internship programme, there shall be space for extended discussions and presentations on different aspects of the teaching experience after the internship. For each student- teacher, internship should be conducted preferably in one school for the entire 15 weeks. However, if the institute wants to provide an opportunity to understand the context of teaching in a government and private school or the dynamics of teaching at elementary and senior secondary

levels, this period can be divided into two blocks. Internship may be arranged in two blocks in such a way that teaching in one school at a particular level (for example elementary or senior secondary) during one block, is followed by the teaching in another school or the same school at another level during the second block. Under any circumstances, the student-teacher should not be sent to more than two schools during her/his internship period. Internship should not be reduced to the, delivery of a certain number of lesson plans, but should aim for meaningful and holistic engagement with learners and the school. Moreover, teaching should not be practiced through the reductionist approach of microteaching of isolated skills and simulated lessons.[20]

NCFTE 2009 highlighted the major drawbacks of the current model of practice teaching : [21]

- Current practices in teacher education take the school curriculum and textbooks as 'given' and train teachers to adjust to the needs of the existing school system through fastidious planning of lessons in standardized formats, fulfilling the ritual of delivering the required number of lessons.

- Repeated 'practice' in the teaching of a specified number of isolated lessons is considered a sufficient condition for professional development.

- There is no opportunity for teachers to examine their own biases and beliefs and reflect on their own experiences as part of classroom discourse and enquiry.

- Theory courses have no clear articulation with practical work and

   ground realities.

- The evaluation protocol is too theoretical, excessively quantitative and lack comprehensiveness.

The School Internship programme, as suggested by NCFTE 2009 needs to have the following critical components:[22]

- Visits to Innovative Centres of Pedagogy and Learning, wherever feasible;

- Classroom-based Research Project;

- Internship in schools for a continuous period of 4 days a week and a minimum duration of 6-10 weeks for a two-year programme and 15-20 weeks for a four-year programme, including an initial phase of one week for observing a regular classroom with a regular teacher;

- Developing Unit Plans and maintaining Reflective Journals; and

- Creating and maintaining resources for teaching-learning in the Internship schools.

While functioning as a regular teacher for a sustained period of a minimum of 12-20 weeks, the intern would get an opportunity to learn to set realistic goals in terms of learning, curricular content and pedagogic practice. A sustained contact through internship would help teachers to choose, design, organize and conduct meaningful classroom activities, critically reflect upon their own practices through observations, record keeping and analysis and develop strategies for evaluating students' learning for feedback into curriculum and pedagogic practice.

The feature distinguishing the proposed process-based teacher education from conventional teacher education is that of bringing the learners' own experiences centre-stage. Engagement with theoretical concepts and frameworks takes place within the learner's experiential and larger social realities. The school internship programme provides the platform for the interns to give expression to their learning while planning and reflecting on their own practice.

Professionalization has emerged as a critical problem in the sphere of education. Teachers should be adaptive, lifelong learners, facilitators, skill oriented and have a thorough understanding of their students. Teachers need a wide range of competencies in order to face the complex challenges of today's world. Teachers need to think and reflect on their professional requirement to upgrade themselves with changing environment. 21st century requires more skilled and reflective teachers. Keeping this in mind the present study focuses on the following variables:

- Reflective Teaching Practices
- Creative Thinking skills
- Problem -Solving Skills
- Decision Making Skills

1.4 Reflection and Reflective Teaching

"Reflection is a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to a new understanding and appreciation" Boud, and Walker, (1985) [23]

Taking action to improve on what one has learnt is referred to as reflective practice. It is the process of integrating actual thought and action in order to effect change. It entails focusing on and critically examining one's activities in order to improve professionally.

"In reflective practice, practitioners engage in a continuous cycle of self-observation and self-evaluation in order to understand their own actions and the reactions they prompt in themselves and in learners (Brookfield 1995). [24]

"Engaging in reflective practice requires individuals to assume the perspective of an external observer in order to identify the assumptions and feelings underlying their practice and then to speculate about how these assumptions and feelings affect practice." (Imel 1992).[25]

A reflective practitioner is someone who:

- ✓ learns from experiences by critically examining acts, analyzing the consequences of those actions, and planning what s/he would do in identical situations in the future; and

- ✓ practices a specific profession characterized by deep thoughtful thinking.

John Dewey can be considered as the first educational theorist to suggest that teachers can improve their practices through reflection. Dewey (1933, p. 118) defined reflective thought as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends." [26] In every case of reflective activity, a person finds himself confronted with a given, present situation from which he has to arrive at, or conclude to, something that is not present. This process of arriving at an idea of what is absent on the basis of what is at hand is inference. Dewey viewed reflection as a holistic approach to teaching and a way for teachers to solve problems that occur in

the classroom. He advocated three key components of the reflective process: open-mindedness, responsibility and wholeheartedness.

Boud, Keogh and Walker (1985) address reflection as an activity in which people 'recapture their experience, think about it, mull it over and evaluate it'. [27] They presented the following three aspects of reflection adding feelings to the thinking process.

- Returning to experience: recalling or detailing salient events.

- Attending to/connecting with feelings: using helpful feelings and removing or containing obstructive ones.

- Evaluating experience: re-examining experience in the light of one's intent and existing knowledge and integrating this new knowledge into one's conceptual framework.

Donald Schon (1983) [28] introduced the term Knowledge-in-action which refers to the kind of knowledge that is revealed in the way we carry out tasks and approach problems. This knowing is in the action. It is seen in the performance but we have not made it verbally explicit. This tacit knowledge is derived from research, and also from our own reflections and experience. This professional knowledge increases with each reflective teaching experience, and allows teachers to continually take action based on this knowledge. He suggested that the capacity to reflect on action so as to engage in a process of continuous learning was one of the defining characteristics of professional practice. He defined the reflective process as consisting of three key aspects: reflection in-action, reflection-on-action and reflection-for-action.

- Reflection-in-Action refers to the reflection that happens while the action occurs. It is the ability to think about what we are doing while we are doing it. He regards this as a key skill. This ability to think and apply previous experiences to current situations helps in increasing the teacher awareness of the learning needs. It suggests you have the ability to reflect while you are teaching.

- Reflection-on-Action encompasses reflecting upon the experience before it begins and after it is finished. It suggests that you analyze the successes and failures of your actions.

- Reflection-for-Action happens when knowledge gained from reflection influences future action. It suggests you are proactive about your teaching.

Zeichner and Liston (1996) [29] model of reflective teaching emphasize five key features of a teacher as reflective practitioner. These are:

1. examines, frames, and attempts to solve the dilemmas of classroom practice,

2. is aware of the questions, assumptions and values s/he bring to teaching,

3. is attentive to the institutional and cultural context in which s/he teaches,

4. takes part in curriculum development.

5. takes responsibility for his/her own professional development.

They examined and highlighted the main features of reflective teaching traditions. Five traditions of reflective practice that have guided reform efforts in teaching and teacher education were identified. These are the academic, social efficiency, developmentalist, social reconstructionist, and generic traditions. They stated that: "Each of these traditions (with the exception of the generic approach) identifies a particular emphasis in the content of teachers' thinking.

- The academic tradition focuses on reflecting on course content and how it is taught; the representation and translation of that subject matter to promote student understanding.

- The social efficiency tradition refers to using methodology rooted in scientific research as the basis for instruction and the standard by which teachers reflect upon their work.

- The developmentalist tradition emphasizes reflecting on one's approach based on students' backgrounds, interests, thinking and developmental and academic level.

- The social reconstructionist tradition stresses reflection about the social and political context of schooling and the assessment of classroom actions to enhance equality, justice, and more humane conditions in schools and society. Teachers need to be aware of the cultural, political and institutional influences present in their work and in the lives of their students.

- The generic tradition represents what the general reflecting teachers do in their work without attention to the quality or substance of that thinking. Good teaching needs to attend to all of the elements that are highlighted by various traditions: the representation of subject matter, student thinking and understanding, research-based teaching strategies, and the social contexts of teaching. They also emphasized that:

- If teachers did not question the goals, values, and assumptions that guided their work and did not examine the context in which they taught, then they were not engaged in good reflective teaching,

- Reflective teaching entailed critical questions about the ends, means and contexts of teaching,

- Good reflective teaching also needed to be democratic in the sense that teachers must be committed to teaching all of the students to the same high academic standards, and

- It must be democratic and self-critical

1.4.1 Characteristics of a Reflective Teacher

Reflection helps in the competency building. Reflective teaching is effective tool for self-improvement. Reflective practice enhances the self-awareness skill of a teacher making teacher more confident and assured about teaching learning process. Teacher develops problem -solving ability by reflecting, by finding new solution to problems faced during the teaching learning process making one more flexible. It also enhances the creative thinking and decision-making skills of teachers. Reflective teaching is not only beneficial for teacher it is also beneficial for the learner as reflective teacher empowers learner, believes in the capacity of experiential learning and motivates and encourage innovation. Reflective teachers develop reflective learners.
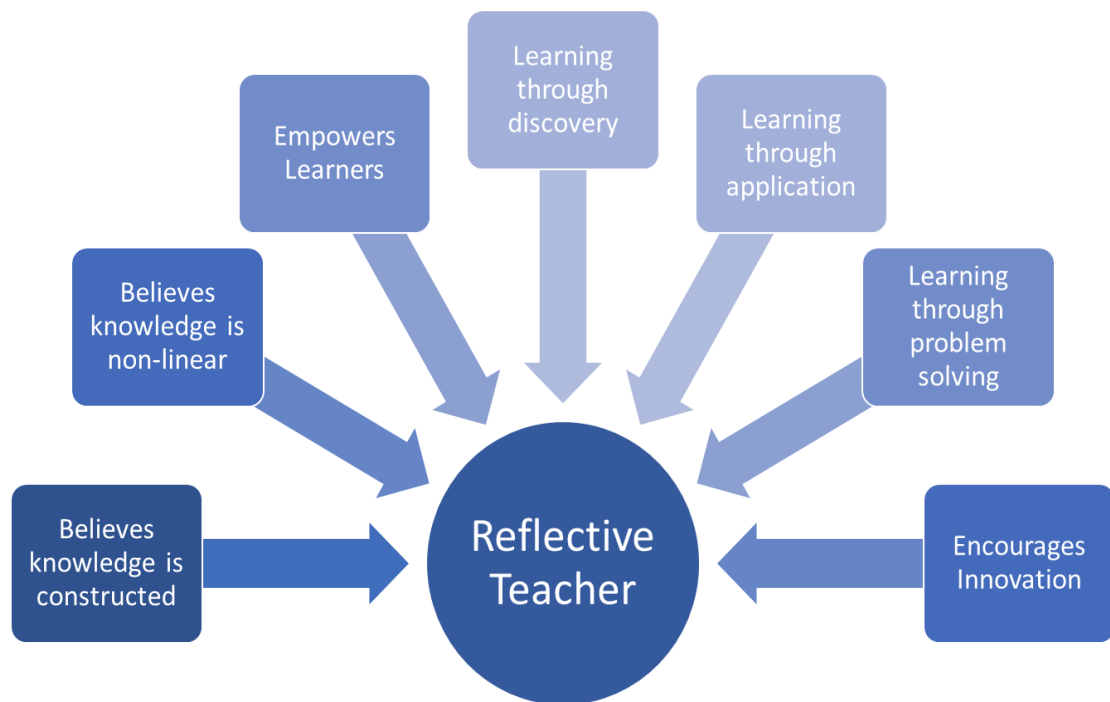
Figure 1.1 Characteristics of Reflective Teacher

1.4.2 Teacher as Reflective Practitioner

Reflective practice is a problem-solving strategy by which individuals or groups can work to improve practice by reviewing routines and the procedures and other aspects of the instructional environment. To engage in reflective practice requires an environment of support. It requires an organizational climate that encourages open communication, critical dialogue, risk taking, and collaboration (Osterman & Kottkamp, 2004).[30]

Be it for professional growth, personal assessment, understanding the learner, coping with the requirements of Education -4.0, making pace with changing times and work culture, there may be many motivating reasons for one to be a reflective teacher but the question lies How can one start the reflective practices? To start this process one need to gather information about one's own teaching. Following can be used as tools for reflective practice:

Figure 1.2 Tools for Reflective Practices

❖ **Reflective Journals –** By making a note of what happened during the teaching learning process teacher can maintain a journal or teachers' dairy to self- reflect. It is an account of work done and can be helpful when need to analyze. Teacher can make notes of students' reaction, challenges, barrier and strengths that are faced in classroom.

❖ **Peer – Observations** - Teacher can request other teachers to observe their teaching practice and to provide feedback. It helps one to reflect before and after observation. Constructive feedback back helps in reflection.

❖ **Video Recording –** By recording one's own lesson teacher can get a chance to watch the real happening of the class, also can note the reactions of the students which otherwise could be missed while teaching. It provides an unbiased view.

❖ **Reflective Discussions** – Teacher can initiate such discussions with colleagues, students, experts and counsellors. It helps to discuss and think about what they observed or to discuss about their reactions and experiences.

The combination of teaching skills, pedagogical theory, and professional skills is known as teacher education. A combination of these three results in teachers who have the necessary knowledge, attitude, and abilities.

1.5 Skills

A skill is a learned ability or capability that allows individuals to do a task efficiently. It requires regular practise and more frequent use. Skills are acquired with a lot of patience and a positive mindset. A skilled worker saves time, energy, and resources while delivering high-quality outcomes. There are several types of skills such as Language skills, Vocational skills, Cultural skills, Livelihood skills, Life skills.

1.6 Life Skills

The term 'Life Skills' refers to the abilities connected with managing and living a higher quality of life; they assist individuals in achieving their goals and living to their full potential.

World Health Organisation (WHO) defined life skills as "the abilities for adaptative and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life". The term 'Adaptative means that a person is flexible in approach and is able to adjust in different circumstances. The term 'Positive Behaviour' implies that a person is forward looking and even in difficult situations, can find a ray of hope and opportunities to find solutions. [31]

UNICEF defines Life Skills as, "a behaviour change or behaviour development approach designed to address a balance of three areas: knowledge, attitude and skills." [32]

Therefore, life skills are a large group of psycho-social and interpersonal skills, which can help people, to make informed decisions, communicate effectively and develop

coping and self-management skills that may help an individual to lead a healthy and productive life.

Life skills are distinct from livelihood skills. Essentially, there are two kinds of skills:

1. Those related to thinking termed as "Thinking Skills"

2. Skills related to dealing with others termed as "Social Skills".

While thinking skills relate to reflection at a personal level, social skills include interpersonal skills and do not necessarily depend on logical thinking.

1.6.1 The Ten Core Life Skills as laid down by WHO are:

- Decision Making

- Problem Solving

- Creative Thinking

- Critical Thinking

- Effective Communication

- Interpersonal relationship Skills

- Self-Awareness

- Empathy

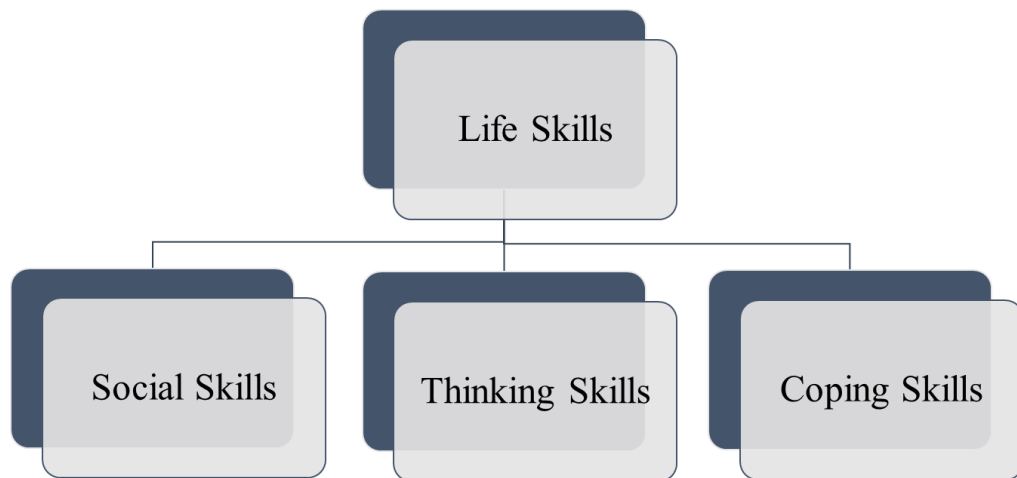- Coping with Emotions

- Coping with Stress

1.6.2 Life-Skills are divided into Three Core groups namely:

Figure 1.3 Core Groups of Life Skills

➢ **Social skills include:**

❖ Empathy - It is the capacity to relate with another person's feelings or experiences by envisioning what it would be like to be in that person's place.

❖ Self-Awareness - Self-awareness includes being aware of many aspects of oneself, such as qualities, behaviours, and emotions.

❖ Effective Communication - Individual's ability to convey ideas, thoughts, feelings, and beliefs both verbally and non-verbally in order for them to be effectively transmitted to others.

❖ Interpersonal Relationship - A person's ability to develop rapport with the individuals with whom they interact.

➢ **Thinking Skills includes:**

❖ Critical Thinking - Critical thinking is the capacity to make informed decisions by objectively examining several sources of information.

❖ Creative Thinking –Creative thinking is a talent that allows you to generate unique and uncommon thoughts. It is an innovative method of perceiving or doing things that develops new ideas, shifts perspectives, creates something new, and builds on previous ideas.

❖ Problem Solving – Enables a person to cope productively with issues in their personal and professional life. Problem-Solving skills helps to determine the source of a problem and find an effective solution.

❖ Decision Making - Decision-making skills show your proficiency in choosing between two or more alternatives.

➢ **Coping Skills includes:**

❖ Coping with stress – means to recognize the source of stress and find the way to con troll it for effective transaction in society.

❖ Coping with emotions – Being aware of how emotions influence behaviour and being able to respond to emotions appropriately.

1.6.3 Importance of Life Skills According to CBSE [33]

➢ Life skills enable individuals to translate knowledge, attitude and values into actual abilities such as what to do and how to do it, given the scope and opportunity to do so.

➢ Life skills are the beginning of wisdom which focuses on behaviour change and developmental approach designed to address a balance of three areas-knowledge, attitude and skills.

➢ Effective acquisition and application of life skills can influence the way one feels about the others, ourselves and equally influence the way we are perceived by others. It contributes to perception of self-confidence and self-esteem.

- ➢ Life skills education involves a dynamic teaching process. The methods used to facilitate this active involvement includes working in small groups and pair, brainstorming, roleplays, games and debates.

- ➢ Children learn their life skills from parents, teachers and significant others who act as their role model. They gradually learn to use a particular skill effectively in diverse situation to cope with challenges of life.

- ➢ Life skills for psychosocial competence needs to be distinguished from other important skills that young people will acquire as they grow up such as reading, numbers, technical and livelihood skills.

1.7 Creative Thinking Skills

Creativity is an important component of problem solving and other higher cognitive abilities. (Slavkin,2004).[34] Creativity is the ability to make or do something new that is also useful or valued by others (Gardner, 1993). The "something" can be an object, a skill or an action.[35]

According to Torrance "Creativity is a process of becoming sensitive to problems, gaps in knowing missing elements, identifying the difficulty, searching for solutions, making guesses, formulating hypothesis, testing and retesting these hypotheses and finally communicating the results. [36]

The capacity to experiment with new ideas is referred to as creative thinking. This might be a fresh approach to the problem, correcting employee discrepancies, or creating a new data product. Every entrepreneur wants to hire someone who can think creatively and offer new insights to the workplace. Creative philosophy is concerned with developing new ways of doing things, overcoming difficulties, and confronting obstacles.

Providing students with effective thinking skills is one of the main goals of education. The field of education has changed significantly efforts to empower students to think have always been at the centre of education. Creativity is someone's desire to find an original product or solution. Desire and imagination are the keywords of creativity.

The school surroundings are an excellent part of teaching creative thinking, as long as this process is developed by the culture of thought and carried out with the support of a defined teacher. In schools where creative thinking skills are meant to be taught, teaching techniques and practises are expected to be unique and inventive. Students should be involved in a creative environment and continue to be taught as part of the process, rather than those who study creativity as an afterthought. This improves the learning environment by allowing students to go beyond standard ways and use innovative strategies.

Creative thinking allows learning to be flexible and adapt to new requirements and expectations, which is especially important during times of fast change. In reality, innovative educational talents may assist instructors in changing throughout time. Creative education is always beneficial since it may provide learning activities that improve learning. If the world and its pupils are always the same, the teaching lesson may be repeated. However, because not all courses are the same and expectations changes, it is generally advisable to teach with this in mind. Teachers and students both benefit from creative thinking.

A creative strategy is an adaptable process or group of procedures in which actions are constantly structured to attain a certain aim or target. Flexible planning, adaptability to the environment, establishing a sober and pleasant atmosphere, participation and interactive roles between students and teachers, efficiency or personal decision making, and high levels of satisfaction and self-esteem are examples of these tactics. Knowledge distinguishes learning. These tactics include, but are not limited to, concept creation, communication, development, communication skills, self-expression and discussion, teamwork, and role-playing abilities. They are distinguished by techniques emphasising attitudes, ideals, emotional sensitivity, and perseverance.

Creative thinking is an important talent for today's youngsters to acquire. It can help youngsters adapt to a constantly changing environment, and it demands professionals with adaptive "21st century" qualities that go beyond basic literacy and computer skills. After all, in today's society, youngsters can use new technology to solve novel challenges and work in fields and professions that do not yet exist.

Creative Thinking education enables young people to transform the potential to accomplish activities that cannot be readily replicated by machines into the ability to confront increasingly difficult local and global situations with novel answers. Encouragement of creative thinking in schools has benefits that extend beyond the workplace. Schools have an important role in supporting young people in recognising, developing, and defining their abilities, particularly their creativity. Schools play an important role in helping youngsters learn that they are part of their communities and that they have creative resources that may help them grow. When students utilise creative thinking to support fresh, distinctive interpretations of experiences, behaviours, and events, they learn more effectively.

 The students' creativity and curiosity contribute in the learning process. Creative thinking may be a source of information within the context of pre-defined learning objectives. To encourage and inspire students at school, we must focus on creative energy and develop new learning patterns that acknowledge all students' creative potential. Such advancements, in particular, benefit students who have little or no interest in studying and are led to express themselves and reach their full potential. Creative thinking, like other talents, may be honed through practise and careful application. Some teachers believe that fostering pupils' creative thinking requires them to invest money and reach their full potential. Students, in reality, have the capacity to think imaginatively when they plan their lessons.

Gaining content knowledge, using a method that allows search and discovery can help to enhance creative thinking. Teachers must be able to recognise creative thinking, as well as the conditions that promote it, and how to support students in their creative thinking. Teachers may "incubate" fresh ideas throughout the teaching process by understanding how creative thinking develops.

The history of research on stages of creativity began with Graham Wallas (1926) who suggested that creative thinking follows four successive steps: [37]

- **Stage of Preparation**: The subject begins to gather information about the problem to be solved and attempts some solutions. This stage is characterised by a state of trial-and-error in learning. Therefore, the subject is advised to learn as much as possible about the problem area. In preparation the thinker

begins recalling personal experiences and investigating in all different directions to gather information about the problem to be solved. The object of defining the focus question of interest is to list all concepts associated with the focus question. Since the goal from this procedure is to generate the largest possible list, the thinker should not worry about redundancy, relative importance, or relationships at this point.

- **Stage of Incubation**: In this stage the solution exists but is not clear. Therefore, the thinker must not intentionally work on the problem. Instead, he/she should be allowed to sink into the unconscious and the thinker is advised to relax and reflect on his/her focus question which might lead him/her to modification of the focus question.

- **Stage of Illumination**: In the third stage the subject suddenly experiences insight into the problem when a new solution, idea, or relationship emerges. In other words, the subject attempts to reformulate his/her ideas or to formulate new ones. The subject is more active and more conscious work is needed in this stage. In the stage of illumination, the thinker experiences insight into the problem when a new solution or relationship emerges. Thus, one attempts to reformulate his/her ideas or to formulate new ones.

- **Stage of Verification**: Finally, the subject tries and checks the solution. In this stage some modification may also occur to ideas reached in the previous stages. In the stage of verification, the thinker tests, tries and checks the solution he/she created. Since this stage is the final one, the thinker may well make some modification to his/her ideas which he/she reached in the previous stages. In this stage thinker should rework the structure of his/her map to represent his/her collective understanding of the interrelationships and connections among groupings, which may include adding, subtracting, or changing super-ordinate concepts, thus, he/she may need to review his/her concept map as he/she gains new knowledge or new insights.

In some situations, the above stages may appear in a different order, or combined into two or three stages. They also do not occur regularly. For example, sometimes the subject's knowledge of the problem area allows him/her to pass over the first stage (preparation) and move on to the next stage (incubation) or even to the third stage.
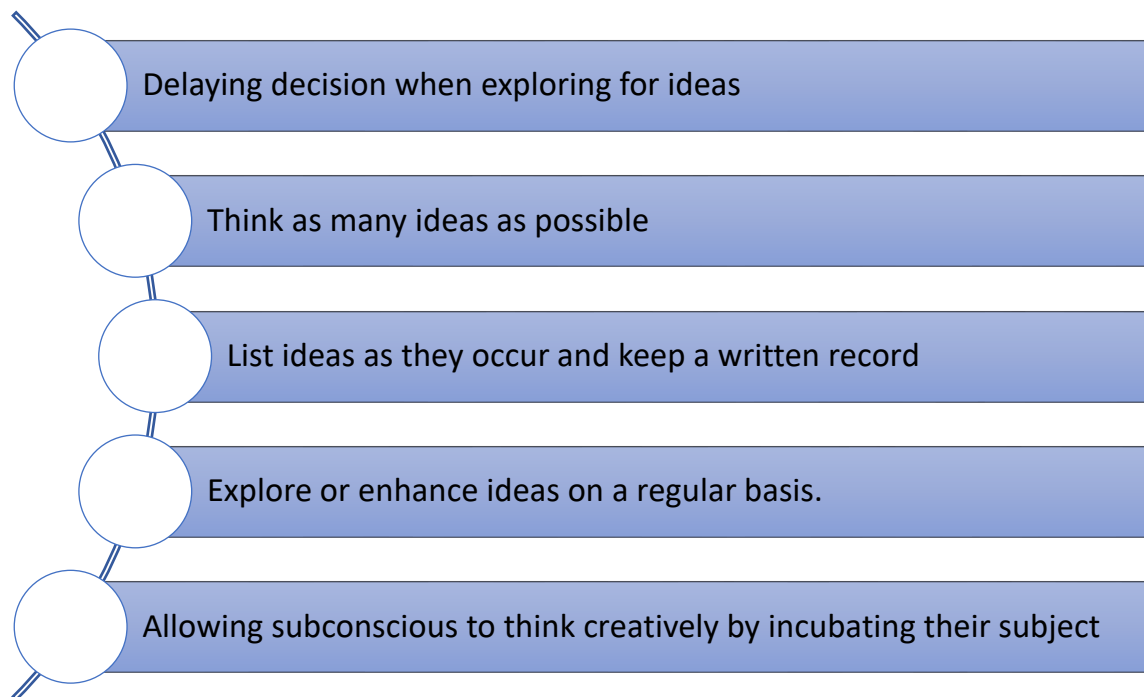
1.7.1 Steps of Creative Thinking

Delaying decision when exploring for ideas

Think as many ideas as possible

List ideas as they occur and keep a written record

Explore or enhance ideas on a regular basis.

Allowing subconscious to think creatively by incubating their subject

Figure 1.4 Steps of Creative Thinking

1. **Delaying decision when exploring for ideas**

   It is the most crucial phase in creative thinking since deferring decisions while investigating ideas allows for diverse thinking, which improves the possibility of invention and novelty. Must wait until a large number of ideas have been created before deciding which ones are worth pursuing, no matter how unrelated to the problem they may appear at first.

2. **Think as many ideas as possible**

   The more ideas you have, the more likely you are to come up with anything new. One must come up with as many different ideas as possible.

3. **List ideas and keep a written record**

   Creative ideas are ephemeral. They can vanish from one's thoughts as soon as one become side-tracked by the daily routines and diversions. But, perhaps more crucially, creative ideas don't always appear to be innovative until they're mixed with other, often dissimilar, ideas. We won't lose

creative ideas if simply write them down. One may also mix, match, reshuffle, and recombine them to come up with new and innovative ideas.

4. Explore or enhance ideas on a regular basis

Constantly exploring or enhancing on ideas aids in the discovery of new combinations, variations, and surprises. Even when the old techniques work, creative individuals explore for new ways to think about a subject. Different viewpoints and methods of doing things should be readily entertained.

5. Allow Subconscious

The subconscious mind is always at work, but it cannot be pushed to create at all times. Good ideas need time to develop. So, concentrate on the problem, come up with some solutions, and then go do something entirely else. New ideas usually appear when we least expect them.

1.7.2 Techniques to Enhance Creative Thinking

BRAINSTORMING   LATERAL   MIND   SUSPEND
                       THINKING   MAPPING   JUDGMENT

THINK FREELY   QUANTITY OF
                 IDEAS

Figure 1.5 Techniques to Enhance Creative Thinking

❖ **Brainstorming**

It's a technique of coming up with new ideas. Its primary objectives are to:

> 1. free us from our habitual thought patterns.
>
> 2. to generate a pool of ideas from which we may select.

This technique may be quite effective in solving minor or large-scale problems that demand creativity. The main purpose is to build a group of people with whom you can freely exchange thoughts. The main notion behind brainstorming is that having a large number of creative possible ideas makes it simpler to choose the best one. Brainstorming provides a number of benefits that can aid in the development of your creative thinking abilities. For starters, because it is highly casual, it does not require a rigid framework to function. Professional guidance, on the other hand, might make it easier. Also, because you may utilise a virtual environment or enter thoughts into a shared document, the persons engaged do not need to be there at the same moment. All participants must be aware of the problem that demands a creative solution and be familiar with how brainstorming works in order for it to operate properly. Finally, make sure to record all of your thoughts using good documentation.

❖ **Lateral Thinking**

To solve an issue, it simply implies being able to think creatively or "outside the box." Logical thinking is typically used to solve problems in a direct, obvious manner. Lateral thinking, on the other hand, looks at things from the side to uncover answers that aren't immediately obvious. Sometimes the solution to an issue is hidden behind it, rather than in front of it. That is the main notion behind lateral thinking, which is a great approach to develop your creative soft skills and devise new strategies.

Lateral thinking entails exploring into regions and lines of thought that are less evident. It can work well if you and your companions try to look at the problem from different angles or invert the problem to see it from a different perspective.

❖ Mind Mapping

A mind map is a diagram in which you may input and link thoughts. It can provide potential answers to an issue, as well as its immediate repercussions and the best course of action to address them. Alternatively, your mind map might help you see the larger picture of what you're attempting to accomplish. Individual mind mapping is also possible. You may already have all of the thoughts you require, but you must put them down on paper. Making a mental map might help you manage your thoughts and come to logical conclusions.

❖ Suspend Judgment

This is the most important guideline to remember. No critical remarks are permitted when ideas are presented. All of the suggestions are put down, and the evaluation will be done afterwards. This stage is difficult to see because we have been educated to be so analytic, practical, and convergent in our thinking. Creating and critiquing do not go together.

❖ Think Freely

Allowing oneself to think outside the lines of conventional, typical cognition can lead to great new answers. Some "crazy" ideas turn out to be useful. Wild ideas, inconceivable and unbelievable thoughts are acceptable and should be encouraged as a source of creativity.

❖ Quantity of Ideas

Focus on producing a huge number of ideas so that they may be filtered through later. There are two reasons why a great amount is desired. First, the obvious, old, impractical notion appears to come to mind first, implying that the first 20 or 25 ideas are unlikely to be fresh and inventive. Second, the more options you have, the more you have to pick from, adopt, or combine. Before leaving the session, some barnstormers set a goal for themselves, such as 50 or 100 ideas.

1.8 Problem Solving Skills

Individuals with problem-solving abilities can figure out why something is occurring and how to fix it. It's one of the most important abilities that employers look for in job candidates. When conventional or traditional approaches fail, students will benefit from using their creativity and innovative solutions to solve problems. This not only encourages pupils to study, participate in learning, and drive deeper learning, but the actual application of this better thinking capacity is nearly incomprehensible. For example, in today's fast-changing workplace, it's impossible to imagine a more vital talent than the capacity to come up with creative solutions to unique and unanticipated issues.

Beyond the workplace, the many challenges that emerge in our everyday lives may also be addressed with a creative approach to problem solving in our hectic daily lives. Problem-solving abilities that are developed effectively give great tools for tackling issues in school, career, and personal life. Teaching students to tackle creative issues in the classroom might be difficult at times owing of uncertainty. It is, nevertheless, possible to foster a culture of problem-solving that is helpful.

Teachers must possess a diverse set of skills in order to respond to all of the problems that the job presents. That is why, according to some experts, problem solving is the most important aspect of the job.

According to many researchers, teachers solve problems not only during the interactive, classroom teaching phase but also when they evaluate the previous lesson and plan for the next. In this respect, the whole pedagogical process, starting with planning and concluding with (self)evaluation, is seen as analysing, acting, reflecting, making decisions and solving problems. To be able to respond to all of the challenges the profession holds, teachers are required to have a wide range of competencies. However, that is why several experts claim that problem solving (including decision making) is the key feature in the profession.

Many experts contend that teachers address difficulties not just during the interactive classroom teaching phase, but also when evaluating prior lessons and planning for the next. In this regard, the entire instructional process is viewed as analysing, acting, reflecting, making decisions, and solving problems, beginning with planning and

ending with (self)evaluation. "Teaching is increasingly seen as a professional activity requiring a careful analysis of each situation, choice of objectives, development and monitoring of suitable learning opportunities, evaluation of their impact on students' achievement, responsiveness to students' learning needs and a personal or collective reflection on the whole process" (OECD 2005: 99).[38]

To sum up the results of researches about teachers 'competence and problem-solving skills the success of the pedagogical problem-solving process therefore depends on such personal and professional factors as:

- **The combination of different knowledge**

  - problem solving process therefore depends on such personal and professional theoretical knowledge (about general psychological and pedagogical facts, teaching-learning process, curriculum, students' needs etc.);

  - professional practical knowledge (about teaching practice – e.g., general classroom situations, students' behaviour, communication with parents, colleagues etc.)

  - knowledge of (the) self (e.g., own personality, own problem-solving strategies, professional aims, professional strengths and weaknesses etc.)

  - knowledge of the problem-solving process (different steps and techniques of the process)

  - knowledge of the current situation (facts, circumstances, own role, involved persons etc.)

- **The combination of different skills**

  - general thinking skills (divergent and convergent thinking, system thinking, metacognition, reflective thinking etc.)

  - professional skills (teacher and teaching skills – e.g., lesson planning, classroom management, communication, evaluation etc.)

- problem - solving skills (problem identification, goal setting, information gathering, situation analysing, developing alternatives, decision making, implementing)

- **Motivational factors**

  - emotions (current emotion relating the actual problem)

  - beliefs (about the role of the school, teaching-learning process etc.)

  - attitudes (toward the problem, toward the job itself, toward own role as a teacher, toward the involved persons e.g., students, the parents, the colleges and the management etc.)

According to Gajdos (2016), one of the fundamental skills teachers need to learn is efficient problem-solving. Problem solving skills are strongly linked to general cognitive and metacognitive processes such as problem interpretation and representation, reasoning, information gathering, assessment, solutions development, decision-making, preparation, reflection and evaluation.[39]

Identifying the problem is the first step in problem solving. A teacher, for example, may need to determine how to increase student performance on a writing competence examination. To do so, the teacher will go over the writing examinations and search for areas for development. Students may be able to produce basic words, but they struggle to write paragraphs and arrange those paragraphs into an essay. To address the issue, the instructor would work with pupils on how and when to construct complex sentences, paragraphs, and essay structuring

1.8.1 Primary Steps in Problem Solving

Figure 1.6 Primary Steps in Problem Solving

1. **Analyse the causes to the unwanted situation**.

   To solve a problem, you must first determine the source of the issue. This requires gathering and analysing data, identifying probable contributing factors, and determining what has to be addressed in order to reach a resolution. Data gathering, Data analysis, Fact-finding and Historical analysis are some of the skills that can be employed for this.

2. **Generate steps to alternative interventions to achieve your end goals.**

   After you've established the underlying cause, consider potential remedies. Teamwork is sometimes required since two (or more) minds are often better than one. A single strategy is rarely the apparent way to solve a complicated problem; developing a variety of alternatives helps you cover your bases and decreases your chance of failure if the first option you apply fails.

3. **Evaluate the best solution.**

Evaluation of optimal solutions may be undertaken by assigned teams, team leads, or transmitted to organisational decision- maker, depending on the nature of the problem. Whoever takes the decision must consider the prospective costs, resources needed, and obstacles to a successful solution implementation.

4. **Implement a plan.**

After deciding on a plan of action, it must be implemented using benchmarks that can quickly and reliably assess whether it is functioning. Notifying employees about changes in standard operating procedures is also part of the plan implementation process.

5. **Assess effectiveness.**

The best problem-solvers have processes in place to evaluate whether and how soon a solution is functioning once it is adopted. This way, they'll know as quickly as possible if the problem has been fixed or whether they'll need to adjust their strategy to the problem in the middle of it.

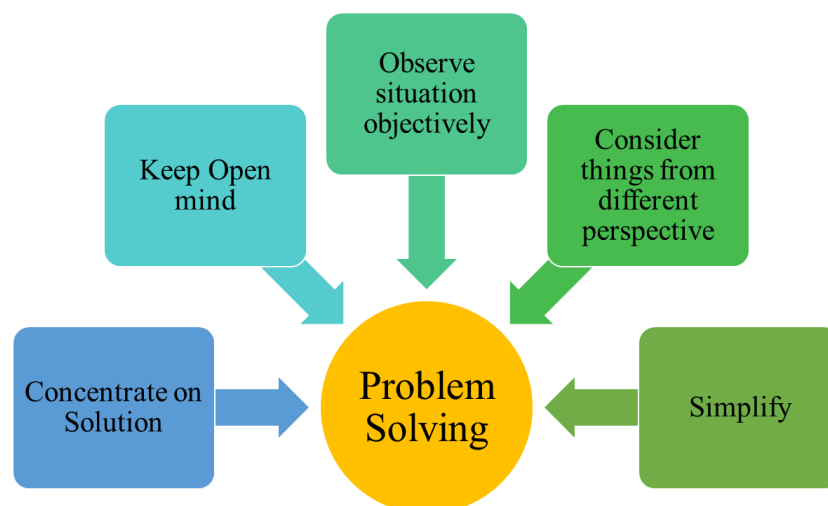**1.8.2 Steps to Enhance Problem-Solving Skills**

Figure 1.7 Steps to Enhance Problem Solving Skills

❖ **Concentrate on the Solution rather than on Problem**

When you concentrate on the problem, it is harder to locate solutions. First, identify the issue; secondly, shift your emphasis to a solution-oriented perspective, focusing on what the 'solutions' may be rather than dwelling on 'what went wrong' and 'who's to blame.'

❖ **Keep an Open Mind.**

When seeking for a solution to a problem, it is important to retain an open mind. Dealing with problems with preconceived beliefs and traditional thinking is challenging. Every problem is unique, and in different situations, tested remedies may not work.

❖ **Observe the Situation Objectively.**

When solving a problem, one must take a neutral attitude and think and act objectively, free of prejudices. One should not be affected by one's own ideas, opinions, and emotions, but rather should be rational when seeking solutions.

❖ **Consider Things from Different Perspectives.**

When looking for a solution to a problem, it is necessary to examine the identified problem from many perspectives so that one might lead to a probable suitable solution. This may be accomplished with the assistance of family, friends, co-workers, and other knowledgeable individuals in the area. Should always consider the merits and drawbacks from many perspectives.

❖ **Simplify**

We have a habit to make things more difficult than they need to be as humans! Try generalising your problem to make it easier to understand. Remove all the extraneous information and go down to the core. Look for a simple, apparent solution. The most productive things are frequently the simplest.

1.9 Decision Making Skills

Decision making involves selection between two or more courses of action or possible alternatives in order to arrive a solution to given problem or situation. Decision making helps individuals to deal constructively with decisions about one's lives. Decision making is the process of selecting a logical option from a number of options. When trying to make a good decision, a person must assess the benefits and drawbacks of each option, as well as all other options. A person must be able to anticipate the outcome of each choice for good decision making, and then evaluate which option is the best for that particular scenario based on all of these factors.

1.9.1 Components of Decision -Making Skills that Helps Individuals to take Proper Decisions:

➢ **Objectivity:** It is the capacity to express decision-making situations/problems exactly as they are, without being persuaded by one's own or others' sentiments, ideas, or beliefs.

➢ **Rationality**: Is the ability to make judgments or reach a conclusion based on rational arguments or logic rather than impulsively or by guess work, or one's personal feelings, opinions, and beliefs.

➢ **Adaptation:** It is an ability to adapt, adjust or even change at certain cost.

➢ **Analytical Ability:** It is an ability to identify elements of the given decision-making situation by analysing it.

➢ **Anticipation of Consequences:** An ability to predict the possible consequences of choosing a possible course of action.

➢ **Self-Knowledge:** Is the ability to make a realistic analysis of what one is capable and what one is not capable of doing before making a decision.

The National Academy of Education Committee 's Report (Darling-Hammond and Bransford, 2005) wrote that: ―On a daily basis, teachers confront complex decisions that rely on many different kinds of knowledge and judgement and that can involve high stakes outcomes for students 'future. To make good decisions, teachers must be aware of the many ways in which student learning can unfold in the context of development, learning differences, language and cultural influences, and individual temperaments, interests and approaches to learning.[40]

In addition to foundational knowledge about the areas of learning and performance listed in the above quotation, teachers need to know how to take the steps necessary to gather additional information that will allow them to make more grounded judgements about what is going on and what strategies may be helpful. More importantly, teachers need to keep what is best for the student at the centre of their decision making.

Decision making involves giving consideration to a matter, identifying the desired end result, determining the options to get to the end result, and then selecting the most suitable option to achieve the desired purpose. Teacher decisions about the issues just mentioned ultimately will influence student learning.

- What to Teach

- How to Teach

- What Teaching Learning Materials/Aids should be employed?

Every day, teachers make innumerable decisions in order to promote student learning. The decisions may be divided into three categories: planning, implementing, and evaluating. When planning lesson or unit plans, designing an educational activity, or assessing papers, certain decisions are made at the desk. Other decisions are taken on the spot while teaching, during dynamic interactions with pupils.
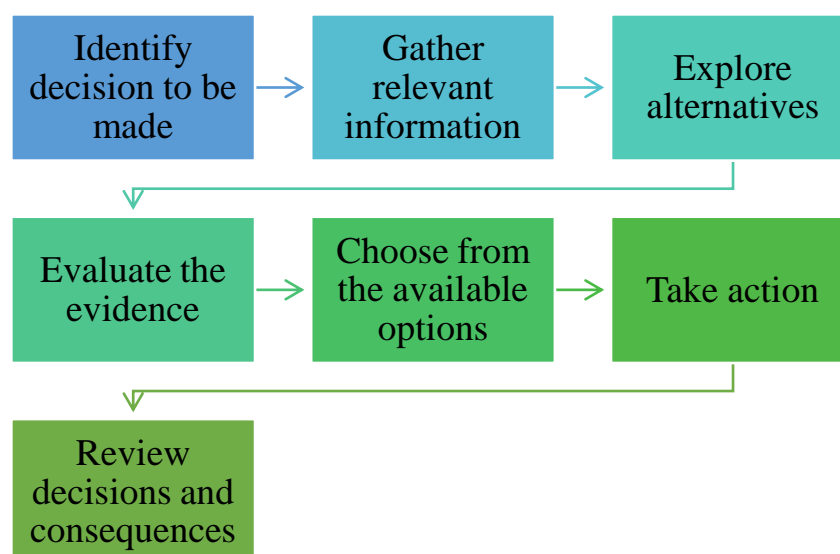
1.9.2 Steps in Decision Making

Figure 1.8 Steps in Decision Making

1. **Identify decision to be made**

   When you realize you need to make a decision, the first and most crucial step is to go through an internal process to try to identify the nature of the decision you need to make.

2. **Gather relevant information**

   The majority of decisions need gathering relevant data. The major challenge in this stage is determining what information is required, as well as the best sources of that information and how to obtain it. Some information must be obtained from within ourselves through a self-assessment process, while other information must be obtained from a range of outside sources. As a result, this phase necessitates both internal and external efforts.

3. **Explore alternatives**

   Make a list of all the advantages and disadvantages of each option. This might assist you in making an informed decision about all of your choices and possibilities. It could even inspire you to think of new things to ponder about. Making a list might help you look at your decision in a more organized way and objectively consider all of the benefits and drawbacks. This can help you enhance your problem-solving, analytical, and critical thinking abilities.

4. **Evaluate the evidence**

   In this phase, we use our knowledge and feelings to envision what it would be like if you followed each option through to the finish. Examine if each option would help or solve the requirement identified in Step 1. As we go through this difficult internal process, we begin to favor specific options that appear to have a better chance of achieving your objectives.

5. **Choose from the available options.**

   After we've examined all of the facts, we're ready to choose the option that appears to be the best fit for us. We may even select a combination of options.

6. Take action

Following the identification of the decision to be taken, the collection of relevant information, and the identification of alternatives, the next step is to take affirmative action, which begins with the implementation of the alternative we chose in step 5.

7. Review decision and consequences

In the last phase, we experience the outcomes of our decision and assess if it has met the indicated need. If it has, you may want to stick with your option for a while. If the choice does not address the specified need, we may need to repeat certain steps of the process to get a new decision.

1.9.3 Barriers for effective Decision Making

I. Insufficient or Limited Information

Making appropriate decisions might be hampered by a lack of trustworthy information. Due to ambiguous and inadequate facts, it is frequently difficult for them to make an acceptable conclusion, which may or may not be the best for any given situation.

II. Analysis Paralysis

Sometimes there is so much contradicting information that understanding the most crucial aspect of it is impossible. This is referred to as "analysis paralysis," and it is sometimes used as a method to postpone decision-making by those concerned wanting more information before making a choice. This is frequently fixed by prioritizing which information is truly critical, as well as by establishing a clear decision-making timeline that includes an information gathering stage.

III.   Vested Interest

The weight of vested interests frequently causes decision-making processes to fail. These vested interests are typically hidden, but they may be a major roadblock. It's difficult to recognize them and so address them because they aren't openly communicated.

IV.   Emotional Attachment

Decisions can include the possibility of change, which many people find difficult. People are typically fixated with the status quo. Making decisions gets tough when there is little or no desire to adapt or be flexible. Furthermore, when personal feelings, emotions, and prejudices enter the picture, decision making becomes more complex.

V.   Lack of Resources

Decisions might be difficult to implement at times owing to a lack of resources such as time and equipment. In these circumstances, one should explore for alternate ways that fit within the constraints of the available resources. However, necessary actions must be done if a shortage of resources threatens an individual's or organization's progress.

1.9.4 Techniques to Improve Decision Making

Set deadlines   Ego and Emotion   Consult a   Examine your data   Experiential
                     should be put aside   professional   learning helps

Figure 1.9 Techniques to Improve Decision Making

❖ **Set Deadlines**

For each decision you make, set a time limit for yourself. This might help you reduce the amount of time you have to alter your mind or ponder about making a decision. You may need to determine the significance of your decision first. If the decision will have a significant impact, you may require more time to consider it, which will help you improve your time management skills.

❖ **Ego and Emotion should be put Aside.**

Making decisions can be challenging because we become overly concerned in how a decision will affect our appearance and feelings. It is important to tackle the situation objectively. Make a list of potential reasons and put your emotions and ego on hold. We may make better decisions if we concentrate on the facts rather than our own flaws.

❖ **Consult a Professional**

Getting a second opinion might help you confirm your choices and boost your confidence in your decision-making ability. You might consult a local specialist or enlist the help of a trustworthy friend. For example, you may inquire about a supervisor's thoughts on a project you're working on.

❖ **Examine your Data**

Seek reliable facts. When it comes to the inputs to your decision-making process, you must be extremely cautious. Worse than not having any data is relying on incorrect data. Before making any decision, it is the individual's job to gather the necessary information.

❖ **Experiential Learning Helps**

Use what you've learned in the past from your past experiences to help you make better decisions in the future. When it comes to making a new decision, previous decisions might be useful. Analyze a prior decision and its consequences, and then utilize that information to make a new, related decision.

1.10 Justification of study

Education 4.0 is fundamentally changing the interaction between the teacher and the learner. With evolution of education 4.0 it is imperative to reflect the changing times we live in and the changed learner we going to deal with. Teacher needs to be more advanced, modular, and flexible in their teaching to fit in the changing environment and work zones.

With advent of Education 4.0 teachers definitely need re -skilling and need to introspect, more importantly reflect the way they teach. Reflective teaching is a process where teacher teaches and keeps a record of her teaching, then self asses the effectiveness of teaching, re -think about the teaching ideas and aids also innovating new ideas to improve the teaching learning process and practicing the new techniques and methods of teaching. It is systematic cyclic process from teach to re-teach.

In this transition era of Education 4.0, Reflective teaching is a key tool for teachers to reflect on their professional requirement, to upgrade themselves also to cope up with the stress and anxiety of changing environment and work zones and requirements. To deal with the challenges of the twenty-first century, teacher education must undergo a complete transformation. Teacher Education's goals and objectives should be re-evaluated. Innovative teaching methods and teaching and learning processes are required.

Teacher education is an important programme for improving the quality of education in schools. It is concerned with providing potential teachers with teaching skills and competency. NCFTE 2009 aims at preparing humanistic and reflective teachers that has potential to develop, more professional teachers and improve the quality of education. Teacher educators should be able to engage in thinking and reflection and be committed to continuous learning and development of their knowledge to keep abreast of latest researches, innovation and improvement in process of education - NCFTE 2009.[41] Resource centers set up by pre-service student teachers during school internship programs should become the hub of professional development of regular teachers. Chapter 4 NCFTE 2009. [42]

With the increased duration of teaching practice at school, (20days per year followed by 6 months school internship program as per recommendation of NCFTE 2009)

teacher trainees get a golden opportunity to enhance and sharpen certain skills related to development of better understanding of school, students and teaching techniques. The three selected skills are necessary for becoming a result oriented professional teacher.

During longer day stay at schools the teacher interns identify their specific talents like presentation, articulation that become integrated part of their reflective teaching practices. Present study is important to find out whether some specific skills acquired during internship help in better classroom management like discipline, drawing and maintenance of student's attention and interest in teaching learning process, and their own professional enrichment.

Teacher autonomy is an important component of entire teaching learning process which is possible only when he has opportunity to develop some skills. A skill is a learned ability or capacity which helps an individual to do a task in an effective manner. A skilled person uses less time, energy and resources to do job and produces quality results. Thus, the present study is an attempt to draw a relationship between three skills related to reflective teaching namely creative thinking, problem-solving, decision-making skills. All the three skills are related to reflective teaching practice adopted by trainees during their internship. Study is an attempt to help teacher trainees to be an efficient reflective practitioner. Study will be beneficial for multiple stakeholders of education namely Teacher Trainees, Teacher Educators, Administrators and Policy makers.

1.11 Statement of Problem

Taking into account the present need and relevance of the study, investigator has attempted to find what reflective teaching practice are being adopted and also to find out relationship if any between creative thinking, problem solving and decision-making skills with reflective teaching practices of teacher trainees. Accordingly, the present study is stated as: ***"A STUDY OF CREATIVE THINKING, PROBLEM-SOLVING AND DECISION-MAKING SKILLS IN REALTION TO REFLECTIVE TEACHING PRACTICES OF TEACHER TRAINEES IN SCHOOL INTERNSHIP PROGRAM"***

1.12   Operational definitions

➢ Creative Thinking

Creative thinking Contributes to both problem solving and decision making by enabling an individual to explore the available alternatives and various consequences. The capacity to experiment with new ideas is referred to as creative thinking. It is a new way of perceiving and doing things, as well as the development of mental abilities connected to divergent thinking, innovation, and flexibility.

➢ Problem Solving

Problem solving is a type of thinking that is focused toward the solution of a specific problem and involves both the formulation and selection of alternative solutions. Problem-solving abilities assist an individual in determining why a problem is occurring and how to remedy that issue with reference to an individual's determination, result orientation, and emotional capabilities.

➢ Decision Making Skills

Making a decision is the intellectual process of picking a logical alternative from the available possibilities. It is the act of deciding between two or more options. It is the ability to make choices. An individual's decision-making ability helps them to make logical decisions while keeping three important factors in mind: objectivity, adaptability, and rationality.

➢ Reflective Teaching Practices

Reflective Teaching is a process where teachers think over their teaching practices, analysing how something was taught and how the practice might be improved or changed for better learning out comes.

➢ Teacher Trainee

Teacher Trainee is a graduate student undergoing training period in the course of teacher education. They are called as a trainee teacher or student teacher till the

completion of the course. The students pursuing B.Ed. degree programme in institutions affiliated to Guru Gobind Singh Indraprastha University.

➢ **School Internship**

School internship programme provide student (intern) a meaningful experience as a practitioner. School-based activities enable the student teachers to connect theory to practice . The student teacher is expected to critically reflect and discuss these practices and engage in activities like maintenance of records, preparation of lesson and unit plans using different artifacts and technology, classroom management activities related to school -community-parent interface, and reflections on self-development and professionalisation of teaching practice.

The NCTE Regulations, 2014 have stipulated further strengthening of the component of 'Field Engagement' by prescribing a longer duration of 20 weeks for it in the elementary and secondary teacher education programmes like D. El. Ed., B. El. Ed, B.Ed., B.A .B.Ed., and B.Sc. B.Ed. and M.Ed. The 'Field Engagement' of 20 weeks has been further split into two parts consisting of 4 weeks and 16 weeks to be organized in the first and second year of the Two-Years programmes, and in the second, third and fourth year of the Four-Year programmes.

1.13   Objectives of the study

➢ To study the reflective teaching practices used by teacher trainees in their school internship program.

➢ To find out the relationship between creative thinking skills and reflective teaching practices used by the teacher trainees in their school internship program.

➢ To find out the relationship between problem solving skills and reflective teaching practices used by the teacher trainees in their school internship program.

➢ To find out the relationship between decision making skills and reflective teaching practices used by the teacher trainees in their school internship program.

➢ To examine the extent of the creative thinking, problem solving and decision-making skills in improving reflective teaching practices of teacher trainees.

1.14   Research Questions

1. What reflective teaching practices are being used by teacher trainees in school internship program?

2. To what extent the creative thinking skills, problem solving skills, decision making skills helps in improving reflective teaching practices of teacher trainees?

1.15   Hypotheses of the study

- H_0 There exists no relationship between creative thinking skills and reflective teaching practices.

- H_a There exists a positive relationship between creative thinking skills and reflective teaching practice.

- H_0 There exists no relationship between problem solving skills and reflective teaching practices.

- H_a There exists a positive relationship between problem solving skills and reflective teaching practices.

- H_0 There exists no relationship between decision -making skills and reflective teaching practices.

- H_a There exists a positive relationship between decision -making skills and reflective teaching practices.

1.16   Delimitations of the study

The present study is delimited to:

- The present study is delimited to GNCT of Delhi.

- Present study will include B.Ed. colleges/institute affiliated to Guru Gobind Singh Indraprastha University located in GNCT of Delhi.

- Since the teacher trainees of the third semester is involved in school internship program, so the study is delimited to 300 teacher trainees of thtird semester undergoing school internship program only of 6 functional B.Ed. colleges.