CHAPTER II
REVIEW OF RELATED LITERATURE

The literature review serves to explain the topic of the research and to build a rationale for the problem that is studied and the need for additional research. Boote and Beile (2005) highlighted the role of a literature review in primary research planning. "As the foundation of any research project, the literature review should accomplish several important objectives. It sets the broad context of the study, clearly demarcates what is and what is not within the scope of the investigation, and justifies those decisions. It also situates an existing literature in a broader scholarly and historical context. It should not only report the claims made in the existing literature but also examine critically the research methods used to better understand whether the claims are warranted. Such an examination of the literature enables the author to distinguish what has been learned and accomplished in the area of study and what still needs to be learned and accomplished. Moreover, this type of review allows the author not only to summarise the existing literature but also to synthesise it in a way that permits a new perspective. Thus, a good literature review is the basis of both theoretical and methodological sophistication, thereby improving the quality and usefulness of subsequent research". [43]

The review ought to depict, illustrate, summarise, evaluate and clarify the literature. It should give a theoretical basis for the research and help to determine the nature of the research. A literature review can be just a simple summary of the sources, but it serves the purpose better if it has an organizational pattern and combines both summary and synthesis. A summary should just not be a recap of the important information of the source, but should contain synthesis i.e., a re-organization of that information. It has the opportunity to give a new interpretation of old material or combine new with old interpretations. This chapter contains a summary of the researches and other literature the researcher had read; however, it goes well beyond merely summarising professional literature. The summary gave a direction to the researcher in ways more than one.

Review helps in organizing and synthesizing of knowledge related to researcher area of investigation and enables in getting up to date information of the work done in the

field, avoiding replication of work, and providing helpful orientation in formulation of problem, procedures, likely methods and tried techniques.

The review of literature is the basis of the most of the research projects as it gives an understanding of the previous work that has been done related to one's study. It enables to know the means of getting to the frostier in the field of the problem and helps in avoiding unnecessary duplication of work. It is difficult to develop a new body of knowledge without knowing what others have done and what still remains to be done in our research area.

Review of literature generally addresses three primary and basic questions that are: 1. Why the research needs to be carried out? 2. How to choose certain methodologies or theories to work with? 3. How the research will add to existing body of knowledge? Several Educationists has tried to show the importance of review of the related literature in their own words. Various views regarding the review of literature are given below:

1. Good (1973) highlights its importance by stating that "A Survey of related literature is necessary for proper planning, execution and right concept of the problems and solutions. It provides guiding hypothesis, suggestive methods of investigation and comparative data for interpretative purpose." [44]

2. Best (2004) defines it as "A summary of the writings of recognized authorities and of previous research provides evidence that the researcher is familiar with what is already known and what is still unknown and untested. Since effective research is based upon past knowledge, this step helps to eliminate the duplication of what has been done and provides useful hypotheses and helpful suggestions for significant investigation." [45]

3. "One of the essential preliminary tasks when undertaking a research study is to go through the existing literature in order to acquaint yourself with the available body of knowledge in your area of interest" (Kumar,2010).[46]

Thus, the review of related literature along with providing conceptual framework to the study, also suggests appropriate methods, techniques, procedures and source of data. The researcher, on the basis of review of related literature, formulates the

hypothesis which presents the rationale for the study. In this chapter the available literature has been reviewed to know the dimensions of research issues and the research gaps.

The methodical identification, location, and analysis of publications providing information relevant to the research subject constitutes the study of related literature. The information gained by examining literature gives the understanding and insight required for the building of a logical framework into which the problem fits, as well as assisting in the interpretation of the results.

Best and Kahn (2009) believe: "A summary of the writing of recognised authorities and of previous research provides evidence that the researcher is familiar with what is already known and what is still unknown and untested." [47]

A review of related literature is required for optimal planning, execution, and the development of appropriate issue and solution solutions. It provides guiding hypotheses, investigational methodologies, and comparison data for interpretation purposes. The current chapter goes through the literature review and research that are relevant to the current topic. A review of research performed in India and abroad has been attempted. The relevant literature review's findings have also been objectively discussed.

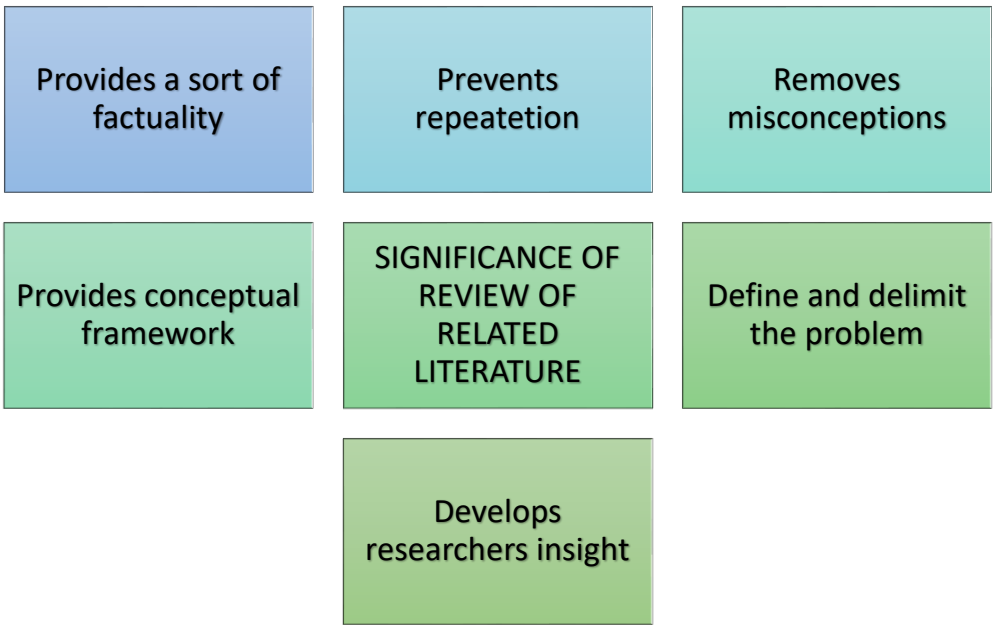

Figure 2.1 Significance of review of related literature

2.1 Survey of Literature Related to Skills (Creative Thinking, Problem -Solving and Decision Making)

2.1.1 Studies conducted in India

Sena (2012). conducted a study on prospective teachers' problem-solving skills and self-confidence. Objectives of this study were to find out the problem-solving skills of prospective teachers and the self-confidence of prospective teachers. A total of 350 students were selected. The statistical techniques used were percentage, t-test, ANOVA and Pearson's product moment correlation. The findings of this study were, the relations between students' self-confidence and problem-solving skills were negative, and the correlation between two variables showed opposite relation.[48]

Regi and Xavier (2014). conducted a study on problem solving skills of B.Ed. trainees. Objectives of this study were to find out the level of problem-solving skills of B.Ed. trainees, any significant relation between male and female B.Ed. trainees in problem solving skills and its dimensions and to find any significant relation among B.Ed. trainees who were studying from the colleges of Tirunelveli, Tuticourine and Kanaya Kumari districts. 1000 B.Ed. trainees were selected for the study. Normative survey method was used. The findings of this study were that male B.Ed. trainees were better than female B.Ed. trainees in their emotional problem solving skills. There was significant difference among B.Ed. trainees who's optional I subject were Maths, Physics, Biology, Computer Science, History, Commerce, Economics, Tamil and English in their problem solving skills and its dimensions emotional and educational. The B.Ed. trainees who's optional I economic were better in their emotional problem solving skills and who's optional I commerce were better in their educational. There was significant difference among B.Ed. trainees from Tirunelveli, Tuticorin and Kanyakumari districts in their problem solving skills and its dimensions emotional and educational, the trainees from Kanyakumari district were better in their problem solving skills. [49]

Jeba (2015). examined the problem solving skills and presentation skills of secondary teacher education students and found that the level of problem-solving

skills and its dimensions of secondary teacher education students in terms of total sample is moderate. The level of the dimension sociological problem-solving skill is high (71.4%) and psychological problem solving skill is low (62.4%) among the moderate levels. The study revealed that there exists significant difference between male and female secondary teacher education students in problem solving skills in total. The mean values, showed that the female secondary teacher education students (92.45) are better than male secondary teacher education students (90.79) in problem solving skills total. It was found that the female secondary teacher education students (44.78) are better than male secondary teacher education students (43.47) in educational problem solving skill, but no significant difference in psychological and sociological problem solving skills were found. No significant difference between rural and urban secondary teacher education students in problem solving skills in total and its dimensions were found.[50]

Sridevi (2016). investigated the main effect of Six Thinking Hats Technique on the problem solving ability of B.Ed. Teacher trainees. Findings revealed that there is no significant difference between the Pre-test and Post test results of the Experimental group Trainees with respect to their problem solving ability also there is no significant difference between the Pre-test and Post test results of the control group Trainees with respect to their problem solving ability. It was found that there is no significant effect of six thinking hats technique on the problem-solving ability of Teacher Trainees.[51]

Srimadevi & Saraladevi (2016). investigated the effect of Decision Making and Self Confidence on Problem Solving Ability. For collection of data Self Confidence Questionnaire and Decision making Questions were used. Descriptive statistics, inferential statistics were used for the statistical analysis of the data in this study. Through this investigation it was found that both the variables had significant effect on problem solving ability. [52]

Chauhan(2016). attempted to develop the life skills programme and evaluate its effect on teacher trainees in enhancing their life skills. The programme was found effective for teacher trainees who underwent the treatment: Life Skills Programme. It was found that there is a significant difference between the male

and the female pre-service teachers‟ life skills”. Life Skills Programme was found more effective for male teachers' trainees than female teacher trainees. Also, it was found there is no significant difference in life skills between the urban and the rural teacher trainees. Life Skills Programme had shown similar and equal effect for urban as well as rural teacher trainees. Life Skills Programme was proved equally effective for arts teacher trainees having arts discipline and teacher trainees having science discipline after the intervention. Reflections from focused group discussions and field notes indicated that a significantly large number of teacher trainees agree that the life skills programme brought positive impact on them. Teacher Trainees agreed that the programme and the activities were found most helpful to them in planning their lessons and handling the class while practice teaching. They shared their views that such activities and sessions should be planned in B.Ed. / M.Ed. curricula as well as in school curricula.[53]

Gopinath & Sivakumar (2018). examined life skills and teaching competencies of prospective students in college of education and to find out the significant influences if any on life skills and teaching competencies of prospective students in college of education in relation with certain demographic variables. Descriptive Survey Method was used. The investigator has chosen 100 B. Ed trainees from College of Education in Madurai District of Tamil Nadu under Purposive Sampling involved in the assessing predictor variables of life skills and teaching competencies of prospective students in college of education. The major findings in life skills, 70.40%, 71.73% and 81.42% of trainees are agreed to have good self-awareness, innovative and problems solving skills; 68.30%, 73.17%, 63.82% and 63.75% of trainees are undecided about their creative thinking, decision making and leadership; 68.13%, 59.53% and 53.45% are disagreed about their critical thinking, empathy and communication. In teaching competencies, 72.45%, 70.26%, 75.32%, 70.35% and 73.53% of trainees agreed to have good contextual, content related, transactional, educational activities and management. [54]

Merchant (2018). explored the nature of creative thinking skill (CTS) particularly in the Indian context. Using data collection tools such as questionnaire, interview, classroom observations and document analysis, the study examined teachers' perception about creative thinking as a skill, the strategies used to foster this skill

and the challenges teachers face that hinder the development of this skill. The findings of this study reveal that STEP teachers in India have diverse perceptions of CTS. Majority of the teachers perceive that this skill can both spontaneous and teacher driven. While the teacher's guide demonstrates aspects that encourage creative thinking there seems to be a lack in what is considered creative.[55]

Rajput (2018). investigated the effectiveness of Synectic's model of teaching in enhancement of problem-solving ability, teaching skills and creativity of pupil teachers. The major findings of the study revealed that in the pre-test phase, experimental and control groups were found to possess low problem-solving ability when tested on Problem solving inventory and there was no significant difference found in relation to their problem-solving ability. In the post test phase, experimental group was found to possess high problem-solving ability whereas control group's problem solving performed average on the same test. Test of significance was applied and resulted significant difference in both the groups in their problem-solving ability. In the pre-test phase, teaching skills of both the groups were measured by using General teaching competency scale and both were found to have low teaching skills. The pupil teachers were academically sharp but have low practical knowledge of teaching. In the post test phase, when the pupil teachers were taught by using Synectic's model of teaching, their teaching skills increased whereas the pupil teachers of the control group were found to fall under the category of average teaching skills. Test of significance was also found significant difference in both the groups with reference to their teaching skills. In the pre-test phase, creativity of experimental and control groups was measured by using new test of creativity. It was found that both the groups were having low creativity in the post-test phase, creativity of the experimental group increased and it was high this time whereas the control group still low on creativity measure. Test of significant also marked this difference and found significant. It was investigated that pupil teachers trained by Synectic's model were more creative than the pupil teachers of control group trained with traditional methods. [56]

Vijayalakshmi (2019). explored the Life Skills development among the B.Ed. Teacher Trainees with an objective to find out whether B.Ed. Teacher Trainees differ significantly in their Life Skills level with respect to Gender, Locality, Type

of Family and Qualification of Parents and to find out the significant relationship between Life Skills of B.Ed. Teacher Trainees. Results showed that the Life skills level among B.Ed. Teacher Trainees is Very high. Life Skills level of B.Ed. Teacher Trainees with respect to Type of Family and Qualification of Parents was found to be significant at 0.05 level. B.Ed. Teacher Trainees show significant strong positive relationship between Life Skills at 0.01 level. Life Skills help the 21st- century youngsters to achieve their goals, by strengthening their abilities to meet the needs and demands of the present society and be Sustain and successful in their work field and life.[57]

2.1.2 Studies conducted in Abroad

Osam & Balbay (2004). investigated in what aspects experienced teachers (cooperating teachers) and less experienced teachers (student teachers) differ when making instant decisions on diverting from their lesson plans as they teach, and what cultural/institutional influences can be related to these differences. The data for this qualitative study came from four cooperating teachers and seven student teachers through several research instruments: video-taping the participant teachers' lessons, the interviews held at post-teaching meetings, the written retrospectives, and the questionnaire. The findings indicate that while 'timing' and 'classroom management' were major motives for student teachers to make changes in their plans, cooperating teachers were more concerned about discipline problems. Both groups of teachers were equally affected by 'motivation', 'physical conditions' and 'language skills' in making instant decisions. [58]

Sougari (2011). examined student teachers' decision-making skills when deciding to depart from their lesson plan during their practicum. To detect the impact of teaching practice on student teachers' decision-making skills, a questionnaire was administered prior to the course, inquiring about their potential course of action in relation to changes implemented in their lesson planning but also probed into the same issues at the end of their teaching practice. The findings indicated that student teachers diverted from their lesson plans when the situations called for such changes, and that the actual teaching impinged upon their decision-making skills. [59]

Hong& Lawrence (2011). presents insights gained from review of 18 action research projects completed by classroom teachers enrolled in a graduate reading methods course. To better understand what teachers learned through the action research process and how their self-study impacted teaching and learning in their classrooms, qualitative research methods were used to analyse the teachers' projects. The data revealed action research impacted literacy instruction, teachers struggled with how to make their literacy instruction explicit, projects focused on specific literacy topics, teachers used a range of resources for their selected intervention and shared information with each other and with colleagues in their respective contexts.[60]

Deniz, S. (2013). investigated the relationship between emotional intelligence and problem solving. The sample set of the research was taken from the Faculty of Education of Mugla University by the random sampling method. The participants were 386 students -prospective teachers- (224 females; 182 males) who took part in the study voluntarily. Pearson product-moment correlation analysis and structural equation modelling were employed to analyse data. Emotional intelligence was found to be significantly correlated with problem solving. [61]

Malik, Setiawan, Suhandi & Permanasari (2017). conducted research on the implementation of HOT (Higher Order Thinking) The research aimed to compare increasing of creative thinking skills of pre-service physics teachers who receive physics lesson with HOT Lab and with verification lab for the topic of electric circuit. The subject of the research were 40 Physics Education pre-service physics teachers of UIN Sunan Gunung Djati Bandung. The results of the research revealed that average of N-gain of creative thinking skills were <0,69> for pre-service physics teachers who received lesson with HOT Lab design and <0,39> for pre-service physics teachers who received lesson with verification lab, respectively. It showed that application of HOT Lab design is more effective to increase creative thinking skills.[62]

Cansoy & Türkoglu (2017). examined the relationships between the pre-service teachers' critical thinking disposition, problem-solving skills and self-efficacy beliefs. The participants of the study were 519 pre-service teachers from Afyon Kocatepe University, Education Faculty. Critical Thinking Disposition, Problem

Solving Inventory, and Teacher Self-efficacy Scale were used to collect the data. Arithmetic mean, Pearson Product-Moment Correlation Coefficient and Multiple Linear Regression Analysis were employed in data analysis. The results of the study revealed that the pre-service teachers' critical thinking disposition was low, problem-solving skills were moderate and teacher self-efficacy perceptions were quite adequate. However, the critical thinking disposition and problem-solving skills revealed significant positive correlations with all dimensions of teacher self-efficacy. An important finding was that critical thinking disposition and problem-solving skills were positive and significant predictors of all sub-dimensions of teacher self-efficacy beliefs.[63]

Cakir (2017). investigated prospective teachers perceived personal problem-solving competencies in relation to gender, major, place lived, and internal-external locus of control. The Personal Problem-Solving Inventory and Rotter's Internal-External Locus of Control Scale were used to collect data from freshman teacher candidates (N = 476). Findings suggested a significant positive correlation between perceived problem-solving skills and locus of control, place lived, gender, and two subcategories of major. Female participants' problem-solving ability was found to be higher than male participants'; however, male participants' scores indicated stronger internal locus of control than females. Results showed place lived, gender, locus of control, and two categories of major are significant predictors of perceived problem-solving ability.[64]

Koyuncu (2018) examined the extent to which pre-service teachers' life skills predict their sense of self-efficacy. The study employed a relational screening model within the quantitative research paradigm and included 195 pre-service teachers in Mimar Sinan Fine Arts University Pedagogical Formation Program. The data was collected through a life skills scale, a teacher self-efficacy scale and a questionnaire. The findings indicated a significant strong positive correlation between pre-service teachers' life skills and their sense of self-efficacy in teaching (r=0.624). Life skills accounted for 38.9 of the variances in teacher sense of self-efficacy. There were not any significant differences in teacher sense of self-efficacy between males and females, graduates and non-graduates, participants

and non-participants in life skills training. The sense of self-efficacy of pre-service teachers with teaching experience was found to be higher than that without it. [65]

Saputro, Rohaeti & Prodjosanto (2018). experimented to explore the difference between Critical Thinking Skills (CTS) and Problem Solving Skills (PSS) among preservice elementary teachers taught by using POGIL and traditional lecture, and analyse the correlational strength between CTS and PSS. Both groups were chosen by using cluster random sampling. This research was conducted at the Universitas Muhammadiyah Ponorogo, Indonesia, involving 48 participants in the academic year 2017/2018. The results show that there is a significant difference in CTS and PSS among experimental and control groups in favour of experimental group students, and there is a high positive and significant correlation between both dependent variables. We recommend that lecturers need to improve students' higher-order thinking skills by using POGIL.[66]

Siuty, Leko, & Knackstedt (2018). analysed the influence of curriculum on 11 middle school teachers' decisions regarding reading instruction for middle school age struggling readers. Findings indicated the availability of such a curriculum facilitated teachers' decision making around individualizing instruction and increased their self-efficacy, leading to the conclusion that a bidirectional relationship exists between curriculum and (a) beliefs, (b) self-efficacy, and (c) individualization.[67]

Siburian, Corebima, & Saptasari (2019). conducted a study to reveal the correlation between critical thinking and creative thinking skills on students' cognitive learning results in inquiry learning strategy and to reveal the contribution of critical thinking skills and creative thinking skills to students' cognitive learning results. The population of this research was students of Biology Education Study Program in the Education and Teacher Training Faculty of Jambi University, Indonesia .Findings showed that there was a significant correlation between critical thinking skills and creative thinking skills on cognitive learning results, the contribution of critical thinking skills and creative thinking skills simultaneously to cognitive learning results was 72.80%, the effective contribution of creative and critical thinking skills to cognitive learning results was 64.91% and 7.89% respectively.[68]

Cain, Brindley, Brown, Jones, & Riga (2019). investigated US elementary teachers' competence for teaching mathematics and its development during teacher preparation. A multi-case study design was used to examine the processes of perception, interpretation, and decision making in participants' comments on video clips of teaching episodes and in reflections about their own teaching. Findings support the central role of these processes in teacher competence and the generative power of reflections revolving around student thinking and tools, such as classroom discourse and visuals. Teachers' communities also played an important role in teachers' decision making. [69]

Karakoyun & Lindberg (2020). investigated the views of preservice teachers from Turkey and Sweden about twenty-first century skills. The participants of the study were 197 preservice teachers from universities in Turkey and Sweden. The findings revealed that preservice teachers in both nations identified twenty-first century skills primarily with technology, digital citizenship, communication, and information literacy in the context of daily life. In terms of education, the vast majority of preservice teachers in Turkey linked twenty-first century abilities with information literacy and technology, whereas those in Sweden associated twenty-first century skills mostly with technology, distance learning, and communication. Furthermore, it was shown that among the skills considered required by preservice teachers in both nations for their careers and future students, digital literacy was ranked first. However, as the second most frequently mentioned skills, Turkish preservice teachers stressed critical thinking and problem-solving skills, whereas Swedish preservice teachers mentioned communication skills and information literacy.[70]

Akpur (2020). examined the structural relationship pattern among critical thinking, reflective thinking and creative thinking and their predictive power on academic achievement. The collected data were analysed by applying SEM through AMOS 16 software program. The findings from the data revealed that critical thinking, reflective thinking and creative thinking correlated with each other in a positive and significant way and these variables all predicted academic achievement positively and significantly.[71]

Suchyadi, Safitri, & Sunardi (2020). conducted research with an objective to improve the understanding and creative thinking skills of elementary teacher education college student as prospective teachers in science courses. The research design used is to make college student groups into small groups. During the learning process, observations about college student cooperation during learning with multimedia media were carried out to assess their understanding and creative thinking skills. The results of the observations of each cycle were evaluated as material for reflection in the next cycle to improve college student understanding and creative thinking skills in accordance with predetermined targets. It was found that there were significant differences. This means that understanding of concepts and Science Process Skills increases after prospective teacher college student experience the science learning process using multimedia learning media. From the results, the average value of understanding the concept increased from 53.61 % to 89.78%. and science process skills increased the average value from 43.57 to 87.32. 92% of college student gave a positive response, namely agreeing and strongly agreeing that the science lecture process using multimedia learning media can improve science process skills and understanding of material in science subjects for elementary teacher education college student. [72]

Fadli (2020). investigated the effect of Local Wisdom-Based ELSII Learning Model (LWB-ELSII) on students' problem-solving skills (PSS) and their communication skills (CS). Cluster random sampling was carried to select 56 preservice Islamic teachers at Islamic State University of Mataram as samples. The PSS Essay Test (PSET) and the Communication Skills Test (CST) were employed. The data were analysed using Mann-Whitney U test and Spearman's rho correlation at significance level of .05. The results showed that there were significant differences in the PSS and CS between the experimental and control groups in favour of experimental group students, and there was a positive and significant correlation between the two dependent variables. It is recommended that lecturers apply LWB-ELSII as an alternative solution in improving students' performance.[73]

Güleç (2020). examined how the social studies teachers perceived problem solving skills by emphasizing the importance of having individuals acquire

problem solving skills through social studies teaching. It was found that the teachers' problem- solving skills did not differ significantly according to the variables of gender, age, marital status, length of service and educational status, satisfaction from school of service, frequency of experiencing problems at their schools and the teachers' problem -solving skills were at sufficient level.[74]

Yilmaz (2021). examined the critical and creative thinking, multidimensional 21st century skills and the change in academic achievements as a result of technology integration of prospective teachers who have science education in pedagogy fields. Research was carried out in Turkey's western Black Sea region in a state university. The research was carried out in 3 stages. In the first stage, technology integration is not provided. In the second stage, basic and medium level technology integration is provided. In the third stage, advanced technology integration is provided. Quantitative and qualitative approaches were used together in the research. The results of the research show that gradual integration of technology into the education process provides a positive change in prospective teachers' critical and creative thinking, multi-dimensional 21st century skills and academic achievements.[75]

Masadeh (2021). explored EFL teachers' knowledge about creative thinking, the activities they practice to enhance creative thinking skills The study aimed to understand EFL teachers' perceptions about the importance of creative thinking activities in promoting EFL learners' creativity and to check if there are significant differences between participants' perceptions due to teaching experience and stage. A total of 56 teachers took part in the present study through responding to a questionnaire developed to achieve the aims. Results revealed EFL teachers' lack of knowledge of creative thinking skills. showed that they "Often" practice creative thinking activities in classroom. Results also indicated that these activities were perceived "Important" for the enhancement of EFL learners' creative thinking skills.[76]

Tabieh, Al-Hileh, Abu Afifa, & Abuzagha (2021). investigated the impact of implementing digital storytelling as a method to be utilized to help pupils acquire active listening skills and creative thinking skills, including fluency, flexibility, and originality, in the Arabic language classes of the primary third grade. The

sample consists of (200) pupils in a mixed-gender type and divides into two equal groups; one is the experimental group, and the other is the control one. Both groups expose to two post-tests, the first test is a post active listening test and the second is a creative thinking test; the validity and reliability of these tests have assured. The results showed significant differences in (p [less than or equal to] 0.05) between means scores of the control and experimental groups students in the post-test of active listening skills in favour of the students who studied through storytelling. The results also showed that the storytelling strategy affected the experimental group students' acquisition of one skill of the three creative thinking skills, which is fluency.[77]

Sheivandi Cholicheh, Nafar, Hasanvand, & Musavi (2021). examined the effectiveness of life skills training (problem-solving and decision-making) on teacher-student relationships, academic buoyancy, and academic optimism in sixth grade elementary students. The method was quasi-experimental with pre/post-test and a control group. The participants were educated in a problem-solving and decision-making training for ten sessions. The results showed that the quality of teacher-student relationship, academic buoyancy and academic optimism were higher in the experimental group than those of the control group. As a result, problem-solving and decision-making trainings can be used as part of students' empowerment programs.[78]

McCarty, Redmond, & Peel (2021). conducted a study to check the influence of cognitive load and effect on teachers' decision in every classroom situation. Eight Australian Secondary teachers were selected for this qualitative study based on the variance in years of experience, gender, age and expertise across content areas. Interviews, classroom observations and reflection sessions revealed participants differed in the language they used when describing their process in making classroom decisions. Assertions from teachers, along with classroom observation data, showed an increased use in proactive teacher actions and reduced cognitive load in decision-making when decisions were made in a state of positive affect. Furthermore, teachers reported reduced negative affect when their initial response to unproductive student behaviour was to refer to their classroom expectations and/or acknowledge correct student behaviours, before addressing unproductive

behaviours. Teacher reflections on using positive actions in classroom practices were consistent with reported reduced cognitive load and feelings of success. All teachers reported increased self-reflection while teaching due to increased awareness of available choices when making decisions. Reduced cognitive load, increased positive affect and improved awareness in available choices in classroom decisions leading to positive classroom environments.[79]

2.2 Survey of Literature Related to Reflective Teaching Practices

2.2.1 Studies conducted in India

Netto (2014). examined the effectiveness of Reflective thinking strategy of teaching on certain cognitive and affective variables among secondary school students. An experimental study was conducted and findings of the study showed that Reflective thinking strategy of teaching is more effective than conventional method of direct instruction for the achievement of cognitive variables among secondary school students. Reflective thinking strategy of teaching is more effective than conventional method of direct instruction for the achievement of affective variables among secondary school students. Reflective thinking strategy of teaching is equally effective on the performance of secondary school students with high, average and low levels of creativity.[80]

Ghosh (2015). in her study highlighted Reflective ability is a developable attribute and a TEP must be in cognizance with the reflective model of teacher education. Research studies done in the field of teacher education have proposed different mediations that can promote reflective ability in prospective teachers. Recent formative changes in the field of education like RTE, CCE, and professional code of ethics make demands on the part of the teachers to become reflective practitioners. The TEP are entrusted with the task of creating effective and reflective prospective teachers and the plausible way to do so is to make ‘reflection’ the guiding force in a TEP.[81]

Chauhan (2015). conducted a study to look at the notion of critical reflection as a possible source of pedagogical knowledge in the pre-service teacher education programme. Investigator attempted to understand how student teachers’ critical

awareness of themselves and their beliefs lead to the development of personal and professional knowledge. The data for the study was obtained from the teaching experiences of student teachers of the Bachelor of Education (B.Ed) programme. The findings of the study suggested that Student teachers became aware of their reflexive abilities after going through the process of interpretation and reflection. The reflection process helped them in recording all incidences linked to teaching, reflecting on them, and incorporating desired changes. Student instructors eventually began to alter their lesson plans in response to changing circumstances in the classroom. The nature of reflective journal entries evolved from a simple descriptive description of what occurred in the classroom to true reflecting experiences. By the end of the School Experience Programme, most of the student teachers acknowledged a change in their perception of students belonging to different ethnic groups. They recognised and appreciated the classroom diversity from different dimensions such as gender, linguistic, religious, socioeconomic and how these can affect the teaching- learning process.[82]

Habib (2017). explored that reflective practice is a tool for teachers to improve their ability, think about their thinking and to judge the quality of their work based on evidence. The study highlighted that the reflective practice is an ongoing, dynamic process of thinking honestly, deeply and critically about all aspects of professional practice. It further stated that reflective practise is a systematic process of self-analysis and self-assessment of one's own practise in order to build new ways that might enhance teaching. Every teacher is different and there are likely to be varying interpretations of what one says and do within any group of learners. There are different worlds within classrooms and skilled teachers will try to see themselves as their students see them. Reflective practice encourages teachers to understand their learners. It is found that reflection is the key to successful learning both for teachers as well as for learners.[83]

Mathew, Mathew& Peechattu (2017). investigated how the teacher educator created opportunities for student teachers to develop their reflective practices during their practice teaching sessions. The study attempted to establish that reflective practice is a tool for student teachers to explore themselves and thereby leading to their professional development. The findings of the research on

reflective practices helped the researchers to identify different strategies that can be practised in the pre-service training programme. The Findings suggests that, Reflective Journal, Collaborative learning, Recording Lessons, Teacher Educator feedback, Peer Observation, student feedback action research are the strategies adopted by the student teachers and they reflected on their practices. The researchers could find a significant change in the behaviour of the student teachers. Researchers emphasised that to deal and survive in their professional field, the student teachers need to grow and bring changes in their behaviour and style. Reflection is a flash back that the teachers need to mediate for their development.[84]

Dixit (2017). conducted a study to know the relationship between reflective teaching and attitude towards action research of secondary teachers. To know the effect of their service condition and types of associated school of secondary teachers were other objectives of the study. The findings of the study showed a positive relationship between reflective teaching and attitude towards action research of secondary teachers. A significant effect on the level of reflective teaching and attitude towards action research was revealed from the study.[85]

2.2.2 Studies conducted in Abroad

Taghilou (2007). explored the relationship between the "reflective teaching practices" and the "learning outcomes" of the Iranian EFL students. For the purpose of this study two homogeneous groups of pre-university students were taught the same materials under similar pedagogical conditions by two teachers fundamentally different in their treatment of reflection on teaching practices. In fact, one was a strong supporter of the reflective pedagogy, and the other a total disbeliever in its use and effect on students' learning potential. The students mean score was significantly lower ($p<0.05$) in the disbeliever teacher category (control group) than the mean score of students in the believer teacher category (experimental group). Also, the student satisfaction and support were more significant in the experimental group. Reflective pedagogy contributed significantly to the learning/learner effectiveness. These results demonstrate for the first time the potential contribution of reflection and reflective teaching to the ease and effectiveness of learning on the part of the Iranian EFL students.[86]

Rizvi & Faisal (2016). examined the relationship of reflective practices and creativity of prospective teachers at university level. The objectives of the study were; to identify the types of reflective practice of teacher educators; to identify the frequency of reflective practice of teacher educators; to determine the creativity level of the prospective teachers; and to find out the relationship of reflective practices of teacher educators with creativity of prospective teachers. The findings of the study reveal that teacher educators carry out various reflective practices during their instruction with a variation in their frequencies. The types/forms that they use include storytelling, unit review, brainstorming, mind mapping, critical enquiry, learning activities, group assignment, mentoring, students' presentations, referring daily life examples, course review, journal keeping, peer observations, engaging critical friends, problem solving, self-accounting, individual writing assignments, self-reports, writing account of life experiences, reinforcement, action research, collaborative action research, using audio-visual aids.The study also shows a strong, positive and significant relationship between the reflective practices of teacher educators and creativity of prospective teachers. The teacher educators, therefore, might concentrate more on new and innovative forms of reflective practices enabling the prospective teachers to discharge their duties in future efficiently and effectively.[87]

Ratminingsih, Artini, & Padmadewi (2017). conducted a study on student teachers' perception on the use of self and peer assessment to give evaluation on planning the lesson and teaching performance in Reflective Teaching Class. There were 100 samples taken randomly from 234 students in a survey using questionnaire and 15 students participating in the focus group discussion (FGD). The finding from the questionnaire shows that they had a very positive perception toward the use of self and peer assessment. Additionally, from the focus group discussion FGD, they conveyed by practicing doing self-assessment, they could learn to see self-performance deeply, strengths and weaknesses. From peer-assessment, they could learn collaboratively from feedback given by peers how to make a better lesson plan and perform a more effective teaching. Hence, self and peer assessment are considered beneficial for preparing the real teaching practicum and future career development.[88]

Sivaci (2017). examined the relationship between Reflective Thinking Tendencies and Social Problem-Solving Abilities of Pre-Service Teachers. The aim was to examine the pre-service teachers' levels of reflective thinking and problem solving and to determine if there is a significant relationship between reflective thinking and problem solving. In the study, it was seen that pre-service teachers had a moderate and above positive relationship between the reflective thinking tendencies and the scores they got from the subscales of the problem-solving skills and the general scores they got from the scales. It was determined that there is a significant positive relationship between reflective thinking and problem solving. In general, it is concluded that the pre-service teachers' abilities of reflective thinking and problem solving are high.[89]

Aldahmash, Alshmrani, & Almufti (2017). investigated teachers' views about the nature of their experiences with reflective practices and reflective teaching. A survey consisted of three dimensions used to collect the data. It was distributed to 458 (237 male and 221 female) science teachers working at high schools in Saudi Arabia. The results indicated that teacher practices of almost all reflective activities included in the three dimensions "the extent of practicing reflection," "areas of practicing reflection," and "ways of practicing reflection" were at "high" level from their point of view. The results also showed that there are no significant differences in the teachers' views about their practices of reflective activities related to their gender, or experiences in the teaching profession.[90]

Gheith & Aljaberi (2018). investigated the levels of teachers' reflective practices as well as their attitudes toward professional self-development in relation to various variables, including gender, number of workshops attended and experience. The study sample consisted of 162 teachers who work as teachers at a number of private schools in Amman. Results found that the level of teachers' reflective practices on the scale as a whole were within an 'acceptable' level; however, their practices in the subcategory of “appreciating criticism" were below acceptable. Findings indicated that teachers' attitudes toward professional development were positive. Findings further revealed a strong correlation of 0.485 between the reflective practices and the attitudes toward self-development in teachers.[91]

Zahid, Madiha, Khanam, Afifa (2019). examined the effect of reflective teaching practices on prospective teachers' performance. An experimental study within action research was conducted by the researchers. All prospective teachers of sixth semester in a women university's teacher education program were the population of the study. From total 40 students, 20 students were taken as experimental group and the rest of 20 students were taken as the control group. During the action research, a cyclic process of producing a module, training teachers for the reflective practices and then observing them during their practicum for replication of reflective practice was done by the researchers. It was found that the training had improved the skills and performance of teachers during training as they revised and modified their teaching strategies through reflective practice.[92]

Ong, Swanto, & Alsaqqaf, (2020). investigated the use of video blogs (vlogs), which are mediated online. The participants of the study comprised 13 pre-service ESL teachers studying in an Institute of Teacher Education. The data for this study was gathered via the analysis of the vlogs and the focus group interview. Results indicate that the respondents expressed mixed reactions to the approach, where some have enjoyed the experience while some feared of being judged and feeling awkward seeing themselves in vlogs. Most respondents have centred their reflections on issues they encountered during lessons, but one has shown the ability to reflect on issues beyond the classroom setting. The outcome of the study implied the need for pre -service teachers to be given additional coaching on the 'how' aspect of reflection. Reflective practice serves as a vital area of teacher education and the impetus for professional development among pre-service teachers.[93]

Karakoc, & Demir (2020). examined the relationship between reflective thinking skills perceptions and problem-solving skills perceptions that should be present in Turkish teaching. The sample of the study consists of 106 Turkish teachers who are working in eight districts of Kars Province According to the findings, the relationships between total and sub-dimensions of Turkish teachers' reflective thinking skills perceptions and their problem-solving skills perceptions were moderate. The relationship between total and sub-dimensions of reflective

thinking skills perceptions of Turkish teachers and total and sub-dimensions of problem-solving skills perceptions was found to be at a moderate level.[94]

Chung (2020). examined teachers' conception of reflection in service-learning by adopting a qualitative approach and employing semi- structured interviews with 24 teachers who developed service-learning subjects and/or have been teaching service-learning subjects in one of the large public universities in Hong Kong. The findings supported that teacher shared the similar concepts of reflections in service-learning literatures, while it showed some emerging insights on how teachers perceived reflection. It also suggested that some teachers have relatively narrow understanding of reflection based on their teaching experiences and professional expertise.[95]

Kurosh, Yousefi, & Kashef (2020). investigated Iranian teachers' reflective teaching practice in relation to self-efficacy perceptions, investigating teachers' discipline for this purpose, a total of 70 teachers from the hard science, soft science and EFL disciplines from both private and public universities in Iran took part in this study. The Teacher Efficacy Scale (TES) and teacher reflection questionnaire were used to investigate teachers' senses of self-efficacy and reflective practice, respectively. Results revealed that except for the ELT teachers, other discipline teachers' self-efficacy perceptions were not related to their reflectivity.[96]

Pow, & Lai (2021). examined whether virtual learning communities can facilitate student teachers' reflection upon their teaching practice. A video database with both text- and voice-comment functionalities was designed to facilitate the process of giving peer feedback and improve the quality of teaching practice. Student teachers' experiences in using the video database were collected through a questionnaire survey and feedback recorded within the database. Findings indicated that student teachers demonstrated a better understanding of concepts and theories relevant to the teaching of the chosen language skill area. While only some student teachers reflected on their reflective teaching practice more effectively with voice-comment features, most of them did peer evaluation of relevant principles and techniques used in their microteaching. Although feedback on the comment functionalities was divided, student teachers trusted that the

microteaching videos with their own reflection and peer feedback were good evidence of their learning outcomes.[97]

Lee & Mori (2021) examined which, and how, reflective practices as instructional strategies affect students' self-directed learning (SDL) competencies in second language university classes. The survey results indicated that reflective practices were significant predictors of SDL competencies. Among the three reflective practices of collaboration, self-reflection, and peer feedback, collaboration was the most significant predictor of SDL competencies.[98]

Arthur & Arthur (2021). conducted a study to assess the attitudes of pre-service teachers towards reflective journal writing. A total of 252 Diploma in Basic Education final year students of Presbyterian College of Education participated in the study. The journal entries written by the teachers every week were used as the primary source of data for the study. Data from the journals was augmented by an interview conducted on the conveniently selected pre-service teachers. The study found that pre-service teachers in Ghana have a negative attitude towards reflective journal writing. Preservice teachers perceive reflective journal writing as an exercise that adds to their workload hence unable to undertake the practise religiously.[99]

Orakcı, (2021). evaluated English teachers' reflective thinking skills and levels with regard to the dimension of learning objectives, content, learning-teaching process, and measurement and evaluation in the context of English course. Results showed that the participant teachers had information about reflective thinking skills and they made some changes in the lesson plan because they thought that a lesson plan for the learning objectives ignoring students' prior knowledge was ineffective. Results indicated that participant teachers reflected on teaching methods and techniques, activities and materials, student motivation, classroom atmosphere, and ensuring participation in the lesson. Providing teachers with in-service training courses such as thinking skills, problem solving and decision-making techniques, risk and crisis management that will contribute to overcoming their shortcoming and mistakes is thought to improve their reflective thinking skills.[100]

Chien, (2021) examined the integration of Six Thinking Hats into the reflective practice of nine student teachers during their practicum in a teacher education programme in the northwest of Taiwan. Based on the analysis of the artifacts, interviews, and observations, this study had the following major findings. First, participants had a positive attitude toward the technique because participants' innovation, critical thinking, and problem solving were fostered. Second, participants' unfamiliarity with the Six Thinking Hats and the limited time they had to utilise the technique affected their ability to use it to its full potential. A framework was suggested to facilitate the integration of Six Thinking Hats into practicum and teacher education programmes.[101]

Riyanti, (2021). investigated how in-service English as a foreign language (EFL) teachers reflect on their teaching activities and how their self-reflection impacts their professionalism. The data for this study were obtained through questionnaires and interviews, as well as the written analysis of participants' teaching videos. After being analysed qualitatively, the findings of this study indicate that most respondents reflect on their teaching activities at a very basic level. In relation to the impact of their reflective teaching on their professionalism, however, overall, respondents thought that their reflection activities helped them know their weaknesses and strengths in teaching, which encouraged them to become better teachers.[102]

2.3 Review Summary of Researches on Skills (Creative Thinking, Problem Solving and Decision-Making Skills)

The investigator has summarized the review of related literature, taking. Some studies are conducted in India and abroad.

Table 2.1 Summary of Researches on Skills (Creative Thinking, Problem Solving and Decision-Making Skills)

S. No.	Author(s) and Year	Main Focus of the Variable (s)	Other Variable (s)	Method	Main Finding(s)
1	Sena (2012)	Problem Solving skills	Self Confidence	Survey	The findings of this study were the relations between students' self-confidence and problem-solving skills were negative, and the correlation between two variables showed opposite relation.
2	Regi and Xavier (2014)	Problem Solving Skills		Survey	Male B.Ed. trainees were better than female B.Ed. trainees in their emotional problem- solving skills.
3	Jeba (2015)	Problem Solving Skills	Presentation Skills	Survey	Problem-solving skills and its dimensions of total sample is moderate. The level of the dimension sociological problem-solving skill is high (71.4%) and psychological problem-solving skill is low (62.4%) among the moderate levels. There exists significant difference between male and female secondary teacher education students in problem solving skills in total. The female secondary teacher education students are better than male secondary teacher education students in problem solving skills total. It was found that the female secondary teacher education students are better than male secondary teacher education students in educational problem solving skill No significant difference between rural and urban secondary teacher education students in problem solving skills in total and its dimensions were found.

4	Chauhan (2016)	Life Skills	Gender, Teacher Education, Rural Urban, Educational Discipline	Survey Method	There is a significant difference between the male and the female pre-service teachers‟ life skills". Life Skills Programme was found more effective for male teachers' trainees than female teacher trainees. No significant difference in life skills between the urban and the rural teacher trainees. Life Skills Programme was proved equally effective for arts teacher trainees having arts discipline and teacher trainees having science discipline after the intervention. Reflections from focused group discussions and field notes indicated that teacher trainees agree that the life skills programme brought positive impact on them.
5	Sridevi P (2016)	Problem Solving Ability	Lateral Thinking	Experimental	There is no significant effect of six thinking hats technique on the problem-solving ability of Teacher Trainees.
6	Srimadevi, & Saraladevi (2016)	Decision Making Self confidence	Problem Solving	Survey	Self Confidence and Decision-making Abilities had significant effect on problem solving ability
7	Gopinath, K., & Sivakumar, P (2018)	Life Skills Awareness, Innovative, Problem-Solving, Creative Thinking, Decision Making, Leadership Empathy	Teaching Competencies		The major findings in life skills, 70.40%, 71.73% and 81.42% of trainees are agreed to have good self-awareness, innovative and problems solving skills; 68.30%, 73.17%, 63.82% and 63.75% of trainees are undecided about their creative thinking, decision making and leadership; 68.13%, 59.53% and 53.45% are disagreed about their critical thinking, empathy and communication. In teaching competencies, 72.45%, 70.26%, 75.32%, 70.35% and 73.53% of trainees agreed to have good contextual, content related, transactional, educational activities and management
8	Merchant (2018)	Creative Thinking Skills	Teacher Education	Survey	STEP teachers in India have diverse perceptions of CTS. Furthermore, majority of the teachers perceive that this skill can both spontaneous and teacher driven.

9	Rajput (2018)	Creative Thinking, Problem - Solving Teaching Skills	Teaching Model	Experimental Study	Experimental group was found to possess high problem-solving ability whereas control group's problem solving performed average on the same test. There is significant difference in both the groups in their problem-solving ability., creativity of the experimental group increased and it was high this time whereas the control group still low on creativity measure. Test of significant also marked this difference and found significant. It was investigated that pupil teachers trained by Synectic's model were more creative than the pupil teachers of control group trained with traditional methods.
10	Vijayalakshmi (2019)	Life Skills	Gender, Locality, Type of Family and Qualification of Parents	Survey Method	Life-skills level among B.Ed. Teacher Trainees is Very high. Life Skills level of B.Ed. Teacher Trainees with respect to Type of Family and Qualification of Parents was found to be significant at 0.05 level. B.Ed. Teacher Trainees show significant strong positive relationship between Life Skills at 0.01 level. Life Skills help the 21st- century youngsters to achieve their goals, by strengthening their abilities to meet the needs and demands of the present society and be Sustain and successful in their work field and life.
11	Osam & Balbay (2004)	Decision Making Skills		Experiment	The findings indicate that while 'timing' and 'classroom management' were major motives for student teachers to make changes in their plans, cooperating teachers were more concerned about discipline problems. Both groups of teachers were equally affected by 'motivation', 'physical conditions' and 'language skills' in making instant decisions.
12	Sougari, (2011)	Decision Making Skills		Survey	The findings indicate that student teachers diverted from their lesson plans when the situations called for such changes, and that the actual teaching impinged upon their decision-making skills.

13	Hong & Lawrence, (2011)	Decision Making Skills	Classroom Inquiry, Reflection	Survey	Action research impacted literacy instruction, teachers struggled with how to make their literacy instruction explicit, projects focused on specific literacy topics, teachers used a range of resources for their selected intervention and shared information with each other and with colleagues in their respective contexts.
14	Deniz, (2013)	Problem Solving, Emotional Intelligence		Survey	Emotional intelligence was found to be significantly correlated with problem solving.
15	Malik, Setiawan, Suhandi, & Permanasari (2017)	Creative thinking Skills	Higher Order Thinking	Experiment	Application of HOT Lab design is more effective to increase creative thinking skills of pre-service physics teachers who receive physics lesson with HOT Lab
16	Cansoy & Türkoglu (2017)	Problem-solving skills Critical thinking disposition	self-efficacy	Survey	The results of the study revealed that the pre-service teachers' critical thinking disposition was low, problem-solving skills were moderate and teacher self-efficacy perceptions were quite adequate. However, the critical thinking disposition and problem-solving skills revealed significant positive correlations with all dimensions of teacher self-efficacy. An important finding was that critical thinking disposition and problem-solving skills were positive and significant predictors of all sub-dimensions of teacher self-efficacy
17	Cakir (2017)	Problem Solving Skills	Locus of Control	Survey	Findings suggest a significant positive correlation between perceived problem-solving skills and locus of control, place lived and gender. Female participants' problem-solving ability was found to be higher than male participants'; however, male participants' scores indicated stronger internal locus of control than females. Results show place lived, gender, locus of control, and two categories of major are significant predictors of perceived problem-solving ability.

18	Koyuncu (2018)	Life Skills	Self-Efficacy	Survey	The findings indicated a significant strong positive correlation between pre-service teachers' life skills and their sense of self-efficacy in teaching. There were not any significant differences in teacher sense of self-efficacy between males and females, graduates and non-graduates. The sense of self-efficacy of pre-service teachers with teaching experience was found to be higher than that without it.
19	Saputro, Rohaeti & Prodjosantoso (2018)	Problem Solving Skills, Critical Thinking Skills	Process-Oriented Guided-Inquiry Learning (POGIL)	Experiment	There is a significant difference in Creative thinking Skills and Problem-solving skills among experimental and control groups in favour of experimental group students, and there is a high positive and significant correlation between both dependent variables. It is recommended that lecturers need to improve students' higher-order thinking skills by using POGIL.
20	Siuty, Leko & Knackstedt (2018)	Decision Making Skills	Self -Efficacy	Survey	Findings indicate the availability of such a curriculum facilitated teachers' decision making around individualizing instruction and increased their self-efficacy, leading to the conclusion that a bidirectional relationship exists between curriculum and (a) beliefs, (b) self-efficacy, and (c) individualization.
21	Siburian, Corebima & Saptasari (2019)	Creative Thinking , Critical Thinking	Cognitive Learning	Survey	Findings showed that there was a significant correlation between critical thinking skills and creative thinking skills on cognitive learning results, the contribution of critical thinking skills and creative thinking skills simultaneously to cognitive learning results was 72.80%, the effective contribution of creative and critical thinking skills to cognitive learning results was 64.91% and 7.89% respectively.
22	Cain, Brindley, Brown, Jones & Riga (2019)	Decision Making Skills		Case study	Findings support the central role of perception, interpretation, and decision making in teacher competence and the generative power of reflections revolving around student thinking and tools, such as classroom discourse and visuals. Teachers' communities also played an

					important role in teachers' decision making.
23	Karakoyun & Lindberg (2020).	21st Century Skills	Problem Solving skills	Comparative Study	The findings indicate that within the context of education, a great majority of the preservice teachers from Turkey associated twenty-first century skills with information literacy and technology, while those from Sweden associated twenty-first century skills mostly with technology, distance learning and communication. The second most frequent skills, the preservice teachers from Turkey emphasized critical thinking and problem-solving skills, while the preservice teachers from Sweden mentioned communication skills and information literacy.
24	Akpur, (2020)	Critical Thinking, Reflective Thinking, Creative Thinking	Academic Achievement	Survey	The findings from the data revealed that critical thinking, reflective thinking and creative thinking correlated with each other in a positive and significant way and these variables all predicted academic achievement positively and significantly.
25	Suchyadi, Safitri & Sunardi, (2020)	Muti media	Comprehension ability Creative Thinking	Survey	From the results, the average value of understanding the concept increased from 53.61 % to 89.78%. and science process skills increased the average value from 43.57 to 87.32. 92% of college student gave a positive response, namely agreeing and strongly agreeing that the science lecture process using multimedia learning media can improve science process skills and understanding of material in science subjects for elementary teacher education college student
26	Fadli (2020)	Problem Solving Skills Communication skills	Wisdom-Based ELSII Learning Model	Experiment	There were significant differences in the Problem Solving Skills and Communication Skills between the experimental and control groups in favour of experimental group students, and there was a positive and significant correlation between the two variables. It is recommended that lecturers apply LWB-ELSII as an alternative solution in improving students' performance.

27	Güleç (2020)	Problem Solving Skills		Survey	It was found that the teachers' problem- solving skills did not differ significantly according to the variables of gender, age, marital status, length of service and educational status, satisfaction from school of service, frequency of experiencing problems at their schools and the teachers' problem -solving skills were at sufficient level.
28	Yilmaz (2021)	Creative Thinking, Critical Thinking	21 Century Skills, Academic Achievement, Technology Integration	Survey	The results of the research show that gradual integration of technology into the education process provides a positive change in prospective teachers' critical and creative thinking, multi-dimensional 21st century skills and academic achievements.
29	Masadeh (2021)	Creative Thinking Skills		Survey	Results revealed EFL teachers' lack of knowledge of creative thinking skills. Results showed that they "Often" practice creative thinking activities in classroom. Results also indicated that these activities were perceived "Important" for the enhancement of EFL learners' creative thinking skills.
30	Tabieh, Al-Hileh, Abu Afifa, & Abuzagha, (2021)	Creative thinking skills, Listening Skills	Digital Story Telling	Experimental	The results showed significant differences between means scores of the control and experimental groups students in the post-test of active listening skills in favour of the students who studied through storytelling. The results also showed that the storytelling strategy affected the experimental group students' acquisition of one skill of the three creative thinking skills, which is fluency.
31	Sheivandi Cholicheh, Nafar, Hasanvand, & Musavi(2021)	Decision Making Skills, Problem Solving Skills	Academic buoyancy, Academic optimism	Experiment	The results showed that the quality of teacher-student relationship, academic buoyancy and academic optimism were higher in the experimental group than those of the control group. As a result, problem-solving and decision-making trainings can be used as part of students' empowerment programs.

32	McCarty, Redmond, & Peel (2021)	Decision Making	Cognitive load		Increased use in proactive teacher actions and reduced cognitive load in decision-making when decisions were made in a state of positive affect.. Teacher reflections on using positive actions in classroom practices were consistent with reported reduced cognitive load and feelings of success. All teachers reported increased self-reflection while teaching due to increased awareness of available choices when making decisions. Reduced cognitive load, increased positive affect and improved awareness in available choices in classroom decisions leading to positive classroom environments.

2.4 Review Summary of Researches on Reflective Teaching Practices.

The investigator has summarized the review of related literature. Some studies are conducted in India and abroad.

Table 2.2 Summary of Researches on Reflective Teaching Practices

S. No.	Author(s) and Year	Main Focus of the Variable(s)	Other Variable(s)	Method	Main Finding(s)
1.	Netto, Sibu G (2014)	Reflective thinking strategy	Cognitive, Affective, Creativity	Experiment	Reflective thinking strategy of teaching is more effective than conventional method of direct instruction for the achievement of cognitive variables among secondary school students. Reflective thinking strategy of teaching is more effective than conventional method of direct instruction for the achievement of affective variables among secondary school students. Reflective thinking strategy of teaching is equally effective on the performance of secondary school students with high, average and low levels of creativity.

2	Ghosh (2015)	Reflective Ability, Reflective Model, Reflective Teaching	Teacher Education Program	Survey	Findings highlighted that, recent formative changes in the field of education like RTE, CCE, and professional code of ethics make demands on the part of the teachers to become reflective practitioners. The TEP are entrusted with the task of creating effective and reflective prospective teachers and the plausible way to do so is to make 'reflection' the guiding force in a TEP.
3	Chauhan, S. (2015)	Critical Reflection	Pedagogical Knowledge	Survey	Student teachers became aware of their reflexive abilities after going through the process of interpretation and reflection. The reflection process helped them in recording all incidences linked to teaching, reflecting on them, and incorporating desired changes. Student instructors eventually began to alter their lesson plans in response to changing circumstances in the classroom. The nature of reflective journal entries evolved from a simple descriptive description of what occurred in the classroom to true reflecting experiences. By the end of the School Experience Programme, most of the student teachers acknowledged a change in their perception of students belonging to different ethnic groups and appreciated the classroom diversity.
4	Habib (2017)	Reflective Practice		Survey	The study highlighted that the reflective practice is an ongoing, dynamic process of thinking honestly, deeply and critically about all aspects of professional practice. It further stated that reflective practise is a systematic process of self-analysis and self-assessment of one's own practise in order to build new ways that might enhance teaching. Reflective practice encourages teachers to understand their learners. It is found that reflection is the key to successful learning both for teachers as well as for learners.

5	Mathew, Mathew, & Peechattu (2017).	Reflective Practice	Pre service training	Survey	The Findings suggests that, Reflective Journal, Collaborative learning, Recording Lessons, Teacher Educator feedback, Peer Observation, student feedback action research are the strategies adopted by the student teachers and they reflected on their practices. The researchers could find a significant change in the behaviour of the student teachers. Researchers emphasised that to deal and survive in their professional field, the student teachers need to grow and bring changes in their behaviour and style.
6	Dixit (2017)	Reflective Teaching	Action Research	Survey	Findings of the study showed a positive relationship between reflective teaching and attitude towards action research of secondary teachers. A significant effect on the level of reflective teaching and attitude towards action research was revealed from the study.
7	Taghilou, (2007)	Reflective teaching practices Reflective Pedagogy	Learning outcomes	Experiment	Reflective pedagogy contributed significantly to the learning/learner effectiveness. Results demonstrate the potential contribution of reflection and reflective teaching to the ease and effectiveness of learning on the part of the Iranian EFL students.
8	Rizvi & Faisal (2016).	Reflective Practice	Creativity	Survey	The findings of the study reveal that teacher educators carry out various reflective practices during their instruction with a variation in their frequencies. The types/forms that they use include storytelling, unit review, brainstorming, mind mapping, critical enquiry, learning activities, group assignment, mentoring, students' presentations, referring daily life examples, course review, journal keeping, peer observations, engaging critical friends, problem solving, self-accounting,

					individual writing assignments, self-reports, writing account of life experiences, reinforcement, action research, collaborative action research, using audio-visual aids. The study also shows a strong, positive and significant relationship between the reflective practices of teacher educators and creativity of prospective teachers.
9	Ratminingsih, Artini, & Padmadewi(2017)	Reflective Teaching	Self and Peer assessment	Survey	Student teachers have positive perception toward the use of self and peer assessment. Self and peer assessment are considered beneficial for preparing the real teaching practicum and future career development.
10	Sivaci, (2017).	Reflective Thinking	Problem Solving	Survey	There is a significant positive relationship between reflective thinking and problem solving. The pre-service teachers' abilities of reflective thinking and problem solving are high.
11	Aldahmash, Alshmrani & Almufti, (2017)	Reflective Practice		Survey	The results have indicated that teacher practices of almost all reflective activities included in the three dimensions "the extent of practicing reflection," "areas of practicing reflection," and "ways of practicing reflection" are at "high" level from their point of view. The results have also shown that there are no significant differences in the teachers' views about their practices of reflective activities related to their gender, or experiences in the teaching profession.
12	Gheith,& Aljaberi (2018)	Reflective Practices	attitudes toward self-development in teachers	Survey	Findings indicated that teachers' attitudes toward professional development were positive. Findings further revealed a strong correlation of 0.485 between the reflective practices and the attitudes toward self-development in teachers.
13	Zahid & Khanam (2019)	Reflective Teaching Practice	Teachers Performance	Experiment	Reflective Practice training had improved the skills and performance of teachers during training as they revised and

					modified their teaching strategies through reflective practice.
14	Ong, Swanto, & Alsaqqaf(2020)	Reflective Practices	Vlogs	Survey	Results indicate mixed reactions to the approach, where some pre service teachers enjoyed the experience while some feared of being judged and feeling awkward seeing themselves in vlogs. Most respondents have centred their reflections on issues they encountered during lessons, but one has shown the ability to reflect on issues beyond the classroom setting. The outcome of the study implied the need for pre - service teachers to be given additional coaching on the 'how' aspect of reflection.
15	Karakoc & Demir(2020)	Reflective Thinking Skills	Problem Solving Skills	Survey	The relationship between total and sub-dimensions of reflective thinking skills perceptions of Turkish teachers and total and sub-dimensions of problem-solving skills perceptions was found to be at a moderate level. These thinking skills should be considered when planning activities in undergraduate and professional education to develop reflective thinking skills perceptions and problem-solving skills perceptions of Turkish teachers.
16	Chung (2020)	Reflection	In- Service Learning	Survey	Teacher shared the similar concepts of reflections in service-learning literatures, while it showed some emerging insights on how teachers perceived reflection. It also suggested that some teachers have relatively narrow understanding of reflection based on their teaching experiences and professional expertise.
17	Kurosh, Yousefi & Kashef (2020)	Reflective Teaching Practice	Self-Efficacy	Survey	Except for the ELT teachers, other discipline teachers' self-efficacy perceptions were not related to their reflectivity

18	Pow, & Lai (2021)	Reflective Teaching Practice	Virtual Learning	Survey	Student teachers demonstrated a better understanding of concepts and theories relevant to the teaching of the chosen language skill area. While only some student teachers reflected on their reflective teaching practice more effectively with voice-comment features, most of them did peer evaluation of relevant principles and techniques used in their microteaching. Although feedback on the comment functionalities was divided, student teachers trusted that the microteaching videos with their own reflection and peer feedback were good evidence of their learning outcomes.
19	Lee & Mori (2021)	Reflective Practices	Self-Directed Learning	Survey	Reflective practices were significant predictors of SDL competencies. Among the three reflective practices of collaboration, self-reflection, and peer feedback, collaboration was the most significant predictor of SDL competencies.
20	Arthur & Arthur(2021	Reflective Journal writing	Pre service teachers Attitude	Survey	The study found that pre-service teachers in Ghana have a negative attitude towards reflective journal writing. Preservice teachers perceive reflective journal writing as an exercise that adds to their workload hence unable to undertake the practise religiously.
21	Orakcı, (2021)	Reflection, Reflective Thinking	Teaching Practice	Survey	Participant teachers reflected on teaching methods and techniques, activities and materials, student motivation, classroom atmosphere, and ensuring participation in the lesson. Providing teachers with in-service training courses such as thinking skills, problem solving and decision-making techniques, risk and crisis management that will contribute to overcoming their shortcoming and mistakes is thought to improve their reflective thinking skills.

22	Chien (2021)	Reflective Practice	Six thinking hats	Survey	Participants had a positive attitude toward the technique because participants' innovation, critical thinking, and problem solving were fostered. Participants' unfamiliarity with the Six Thinking Hats and the limited time they had to utilise the technique affected their ability to use it to its full potential.
23	Riyanti (2021).	Reflective Teaching	Teachers Professional Development	Survey	Most respondents reflect on their teaching activities at a very basic level overall, respondents thought that their reflection activities helped them know their weaknesses and strengths in teaching, which encouraged them to become better teachers.

Conclusion

Findings throws light on need of life skills and skill-based programmes for pre service teacher trainees. Some studies showed positive relationships among various skills, also showed positive effects of skills on self-efficacy, academic achievement, teaching learning process of teachers. Life skills programmes proved effective in teachers' performance. Teacher trainees agreed that skills training have positive impact on their personal and professional life. Some studies highlighted positive relationship among problem solving and creative thinking skills. Also revealed that decision making abilities have significant effect on problem solving abilities and training in skills like decision making and problem solving can be used as part of student empowerment.

Studies related to Reflective teaching Practices highlighted the need of reflective teaching practices to be adopted by teacher trainees. Findings of some studies showed that there is lack of Reflective practices adopted by the teacher trainees. Studies revealed most respondents reflect on their teaching activities at a very basic level overall, respondents thought that their reflection activities helped them know their weaknesses and strengths in teaching, which encouraged them to become better

teachers. It is found that the teachers adopting reflective teaching practice are more confident in planning and executing lessons.

Review shows that there are only few studies conducted in India on reflective teaching practices also there are very less studies conducted which can find out any relationship between skills and reflective teaching practices.