CHAPTER 2
THEORETICAL OVERVIEW

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2.1 INTRODUCTION

Theoretical overview tries to give a conceptual framework about different phenomena under the study. As the present study deals with emotional competence, creative thinking and locus of control among student teachers, this chapter tries to present theoretical aspects related to these variables. They are given under the following heading.

1. Theoretical Framework on Emotional Competence
2. Theoretical Framework on Creative Thinking
3. Theoretical Framework on Locus of Control

2.2 THEORETICAL FRAMEWORK ON EMOTIONAL COMPETENCE

Emotional competence refers to one's ability to express or release one's inner feelings or emotions. It implies an ease around others and determines one's ability to effectively and successfully lead and express. It is described as the essential social skills to recognize, interpret, and respond constructively to emotions in yourself and others. The concept of emotional competence is rooted in understanding emotions as normal, useful aspects of being human. The suppression of emotion is not useful and that teaching people to suppress their emotions is part of trying to control them. Emotionally competent people will express emotion appropriate to the situation and their needs and they will not seek to suppress emotions in others.

It is fairly widely believed that if appropriate emotions are not expressed, some sort of memory of them becomes stored. Later events may trigger off the old emotions resulting in inappropriate emotional responses. This particularly applies to emotions that children are prevented from expressing. Emotional competence can lead to improved health through avoiding stress that would otherwise result from suppressing emotions. It can also lead to improved relationships since inappropriate
emotions are less likely to be expressed and appropriate behaviour is not avoided through fear of triggering some emotion.

The concept of emotional competence is distinct from emotional intelligence which, while recognising the importance of emotions, gives emphasis to controlling or manipulating them. Emotional competence is what results and enhances personal, relational and professional performance, and what ultimately helps to attain an overall increase in quality of life. According to Daniel Goleman, emotional competence is a learned ability grounded in emotional intelligence. Emotional Intelligence influences the potential for learning the practical emotional competencies, and developing the emotional literacy necessary for quality of life, life satisfaction, and overall happiness. Such skills include the development of self, social or relational awareness, management and competence.

Saarni defined emotional competence as the functional capacity wherein a human can reach their goals after an emotion-eliciting encounter. She defined emotion as a building block of self-efficacy. She also described the use of emotions as a set of skills achieved which then lead to the development of emotional competence. According to Saarni an effective way to grasp just what involved in emotional competence is to look inside oneself. Emotional competence entails resilience and self efficacy. These include acting in accord with ones sense of moral character. An emotionally competent person will demonstrate self efficacy in emotion-eliciting transactions, which are invariably social in nature. In other words attainment of the skills of emotional competence is crucial to self-efficacy. The emotional responses are contextually anchored in social meaning, i.e., the cultural message that absorbed the meaning of social transactions, relationships or even one’s self-definitions. Emotional
competence may sound straightforward and simple, but in fact it is subtle, complex and sometimes downright elusive. This is because the ideas behind each of these concepts namely emotion, competence, resilience, self efficacy, character, emotion elicitation and social transaction, represents whole sets of theories and assumptions that are very much anchored in cultural context. The emotion-eliciting encounter derives its meaningfulness from the social context and thus emotional experience is developmentally embedded in social experience, indeed the two are reciprocally influential. The primary contributors of emotional competence include one’s self or ego identity, moral sense or character, and developmental history.

2.2.1 Components of Emotional Competence

The components of emotional competence are those skills needed to be self efficacious particularly when an individual is in emotion-eliciting social transactions. The notion of self efficacy in regard to emotion-eliciting social transactions considers how people can respond emotionally yet simultaneously and strategically apply their knowledge about emotions and their emotional expressiveness to negotiate their way through interpersonal exchanges. To some extent, the notions of emotions and efficacy are redundant. The notion of competence has been defined as the capacity or ability to engage with a variable and social-physical environment, result in growth and mastery for the individual (White, 1959). However using the term emotional competence, one can articulate the emotion – related capacities and abilities an individual needs to deal with that changing environment such that he or she emerges as more differentiated, better adapted, effective and confident.
2.2.2 Skills of Emotional Competence

Saarni (1999) identified the following skills of emotional competence.

1. Awareness of one’s emotional state including the possibility that one is experiencing multiple emotions, and at even more mature levels, awareness that one might also not be consciously aware of one’s feeling due to unconscious dynamics or selective inattention.

2. Ability to discern others emotions, based on situational and expressive cues that have some degree of cultural consensus as to their emotional meaning.

3. Ability to use the vocabulary of emotion and expression terms commonly available in one’s subculture and at more mature levels to acquire cultural scripts that links emotion with social roles.

4. Capacity for empathetic and sympathetic involvement in others’ emotional experiences.

5. Ability to realize that inner emotional state need not correspond to outer expression, both oneself and in others, and at more mature levels the ability to understand that one’s emotional – expressive behavior may have an impact on another and to take it this into account in one’s self – presentation strategies.

6. Capacity for adaptive coping with aversive or distressing emotions by using self-regulatory strategies that ameliorate the intensity or temporal duration of such emotional states.

7. Awareness that the structure or nature of relationships is in large part defined by how emotions are communicated within the relationship, such as by the degree of emotional immediacy or genuineness of expressive display and by the degree of emotional reciprocity or symmetry within the relationship; for
example, mature intimacy is in part defined by mutual or reciprocal sharing of genuine emotions. Whereas a parent-child relationship may have asymmetric sharing of genuine emotions.

8. Capacity for emotional self-efficacy; the individual views her or himself as feeling, overall, the way she or he wants to feel; that is emotional self-efficacy means that one accepts one’s emotional experience, whether unique and eccentric or culturally conventional, and this acceptance is in alignment with the individuals beliefs about what constitute desirable emotional “balance”; in essence, one is living accord with one’s personal theory of emotion when one demonstrates emotional self-efficacy as well as in accord with one’s moral sense.

2.2.3 The Emotional Competence Framework

The framework of emotional competence as suggested by Goleman (1995) can be summarised as follows.
The emotional competence is primarily categorized into two as personal competence and social competence.

**Personal Competence**

Personal competence deals about how people manage themselves and it consists three categories self awareness, self regulation and motivation.

**Self Awareness**

Self awareness concerns knowing one’s internal states, preferences, resources and intuitions. This cluster contains three competencies.

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*Figure 2.1. Emotional competence framework*
Emotional Awareness – It deals with recognising one’s emotions and their effect. People with this competence know which emotion they are feeling and why, realize the link between their feelings and what they think and say, recognize how their feelings affect their performance and have a guiding awareness of their values and goals.

Accurate Self Assessment – It means knowing one’s strengths and limits. People with this competence are aware of their strengths and weaknesses, reflective, learning from experience, open to candid feedback, new perspectives, continuous learning, and self-development and able to show a sense of humor and perspective about themselves.

Self Confidence – It concerns sureness about one’s self-worth and capabilities. People with this competence present themselves with self-assurance or have presence, can voice views that are unpopular and go out on a limb for what is right and are decisive, able to make sound decisions despite uncertainties and pressures.

Self Regulation

Self regulation refers to managing one’s internal states, impulses, and resources. This cluster contains five competencies.

Self Control – It deals with managing disruptive emotions and impulses. People with this competence manage their impulsive feelings and distressing emotions well, stay composed, positive, and unflappable even in trying moments and think clearly and stay focused under pressure.

Trustworthiness – It means maintaining standards of honesty and integrity. People with this competence act ethically and are above reproach, build trust through their
reliability and authenticity, admit their own mistakes and confront unethical actions in others and take tough, principled stands even if they are unpopular.

**Conscientiousness** – It concerns about taking responsibility for personal performance. People with this competence meet commitments and keep promises, hold themselves accountable for meeting their objectives and are organized and careful in their work.

**Adaptability** – It means flexibility in handling change. People with this competence smoothly handle multiple demands, shifting priorities, and rapid change, adapt their responses and tactics to fit fluid circumstances and are flexible in how they see events.

**Innovation** – It deals with being comfortable and open to novel ideas and new information. People with this competence seek out fresh ideas from a wide variety of sources, entertain original solutions to problems, generate new ideas and take fresh perspectives and risks in their thinking.

**Motivation**

Motivation is the emotional tendencies that guide or facilitate reaching goals. This cluster contains four competencies.

**Achievement Drive** – It concerns about striving to improve or meet a standard of excellence. People with this competence are results-oriented, with a high drive to meet their objectives and standards, set challenging goals and take calculated risks, pursue information to reduce uncertainty and find ways to do better and learn how to improve their performance.

**Commitment** – It deals with aligning with the goals of the group or organisation. People with this competence readily make personal or group sacrifices to meet a
larger organisational goal, find a sense of purpose in the larger mission, use the
group’s core values in making decisions and clarifying choices and actively seek out
opportunities to fulfill the group’s mission.

**Initiative** – It means readiness to act on opportunities. People with this competence
are ready to seize opportunities, pursue goals beyond what’s required or expected of
them, cut through red tape and bend the rules when necessary to get the job done
and mobilize others through unusual, enterprising efforts.

**Optimism** – It is the persistence in pursuing goals despite obstacles and setbacks.
People with this competence persist in seeking goals despite obstacles and setbacks,
operate from hope of success rather than fear of failure and see setbacks as due to
manageable circumstance rather than a personal flaw.

**Social Competence**

Social competence is about how people handle relationships and it consist two
categories empathy and social skills.

**Empathy**

Empathy refers to how people handle relationships and awareness of others’
feelings, needs, and concerns. This cluster contains five competencies.

**Understanding Others** – It is about sensing others’ feelings and perspective, and
taking an active interest in their concerns. People with this competence are attentive
to emotional cues and listen well, show sensitivity and understand others’
perspectives and help out based on understanding other people’s needs and feelings.

**Developing Others** – It means sensing what others need in order to develop, and
bolstering their abilities. People with this competence acknowledge and reward
people’s strengths, accomplishments, and development, offer useful feedback and
identify people’s needs for development and mentor, give timely coaching, and offer assignments that challenge and grow a person’s skill.

**Service Orientation** – It deals with anticipating, recognizing, and meeting customers’ needs. People with this competence understand customers’ needs and match them to services or products, seek ways to increase customers’ satisfaction and loyalty, gladly offer appropriate assistance and grasp a customer’s perspective, acting as a trusted advisor.

**Leveraging Diversity** – It is about cultivating opportunities through diverse people. People with this competence respect and relate well to people from varied backgrounds, understand diverse worldviews and are sensitive to group differences, see diversity as opportunity, creating an environment where diverse people can thrive and challenge bias and intolerance.

**Political Awareness** – It means reading a group’s emotional currents and power relationships. People with this competence accurately read key power relationships, detect crucial social networks, understand the forces that shape views and actions of clients, customers, or competitors and accurately read situations and organisational and external realities.

**Social Skills**

Social skills deals with adeptness at inducing desirable responses in others and this cluster contains eight competencies.

**Influence** – It is wielding effective tactics for persuasion. People with this competence are skilled at persuasion, fine-tune presentations to appeal to the listener, use complex strategies like indirect influence to build consensus and support and orchestrate dramatic events to effectively make a point.
Communication – It deals with sending clear and convincing messages. People with this competence are effective in give-and-take, registering emotional cues in attuning their message, deal with difficult issues straightforwardly, listen well, seek mutual understanding, and welcome sharing of information fully and foster open communication and stay receptive to bad news as well as good.

Conflict Management – It is about negotiating and resolving disagreements. People with this competence handle difficult people and tense situations with diplomacy and tact, spot potential conflict, bring disagreements into the open, and help deescalate, encourage debate and open discussion and orchestrate win-win solutions.

Leadership – It concerns about inspiring and guiding groups and people. People with this competence articulate and arouse enthusiasm for a shared vision and mission, step forward to lead as needed, regardless of position, guide the performance of others while holding them accountable and lead by example.

Change Catalyst – It means initiating or managing change. People with this competence recognize the need for change and remove barriers, challenge the status quo to acknowledge the need for change, champion the change and enlist others in its pursuit and model the change expected of others.

Building Bonds – It deals with nurturing instrumental relationships. People with this competence cultivate and maintain extensive informal networks, seek out relationships that are mutually beneficial, build rapport and keep others in the loop and make and maintain personal friendships among work associates.

Collaboration and Cooperation – It is about working with others toward shared goals. People with this competence balance a focus on task with attention to
relationships, collaborate, sharing plans, information, and resources, promote a friendly, cooperative climate and spot and nurture opportunities for collaboration.

**Team Capabilities** – It deals with creating group synergy in pursuing collective goals. People with this competence model team qualities like respect, helpfulness and cooperation, draw all members into active and enthusiastic participation, build team identity, esprit de corps and commitment, protect the group and its reputation and share credit.

**2.2.4 Effects of Emotional Competence**

The effects of emotional competence may be seen in the ability to manage one’s emotion, which is critical in being able to negotiate one’s way through interpersonal exchanges. Another important effect of emotional competence is enhanced self esteem and adaptive resilience in the face of stressful circumstances.

**Emotion Management**

Weber and Laux (1993) use the phrase presentation of emotion to describe how people cope with both their interpersonal interactions and emotional experiences. People express their emotions with communicative intent depending on whom they are with and what they are feeling, that is, one’s emotional-expressive behavior is meaningful to others. By adulthood an individual carry out these strategic displays almost too automatically, yet children have to learn these expressive strategies.

**Self esteem**

Self efficacy has also been linked with self esteem and implicated in such an umbrella construct as emotional competence is self esteem. In Saarni’s view as one develops the skills of emotional competence, one also feels better, which serves to reinforce or validate one’s self esteem and confirms one’s competence in some
situation. The more one feels that one’s self-esteem is resilient, then they also becomes more likely to risk one’s as yet untested competence in some situation. If the situation referred are social ones, then resilient self esteem facilitate trying out new interpersonal negotiation strategies. Resilient self-esteem also makes the job of managing one’s emotional experience easier because anxiety about self evaluation is reduced.

Resilience

Resilience is the capacity to recover after experiencing an adversity. Psychological resilience in conjunction with emotional competence yields greater gains or growth following the recovery from adversity or trauma. Murphy and Moriarty (1976) suggest that children become more resilient when exposed to stressors and coming to terms with the emotional challenge.

2.2.5 Moral Disposition and Emotional Competence

Functioning in an emotionally adaptive and balanced fashion invariably means live in accord with moral disposition. The latter are quite frequently relativistic and change with development and context, but the former is embedded in such concepts as sympathy, self control, fairness and sense of obligation (Campbell and Christopher, 1996; Flanagan, 1991; Wilson, 1993). Personal integrity comes with a life lived in accord with one’s moral sense of disposition, and concomitantly, such a life reflects emotional competence. Moral commitment and personal integrity are inextricable from one’s social-emotional experience. Such a balanced, well lived life, characterized by personal integrity, is one that reflects emotional competence. The idea that character is embedded in emotional competence is something will become better at as the person mature.
2.2.6 Role of Self in Emotional Competence

Given that emotional competence, by definition, entails a sense of self efficacy that a person needs to address the role of self in emotional experiences and in emotional development. According to Saarni self is a contact point between environment and biological organism. This contact point or interface functions to coordinate and mediate in an adaptive fashion with the meaningfulness of the environment for the individual. Thus the self plays the role of coordinator and mediator of experience.

A critical consequence of the self’s playing its coordinator and mediator roles are that values are assigned to the context a person is engaged in. When individuals differentially respond to a particular context because of its relative significance to them, they are also acting in a goal directed fashion. The connection between emotions and motives comes about because when one is engaged in an encounter with his or her environment, he or she has a personal stake in that encounter (Lazarus, 1991). That is one have constructed this encounter as meaningful for them in either a generally beneficial or harmful way, and as a result one become motivated to do something about their involvement in the emotion-eliciting situation. It is in this sense that emotions are functional. It is not guaranteed that the goals will be met in each emotional encounter with the environment; rather one has a probabilistic belief in their self efficacy to attain the goals. Self efficacy is clearly served when one attains adaptive goals, and infers, in hindsight, that emotional competence was manifested in those encounters.

Neisser’s notion of the ecological self is premised on how one perceives his or her environment in terms of what it affords them as opportunities for interaction. Thus
The individual interacts with an environment that is bidirectional. What happens is a joint function of what one can do with the environment and what environment provides them as an accessible structure. The ecological self is significant for the development of emotional competence because of its emphasis on the self in relationship to an environment. That environment includes other people, which mean that the social environment can also be looked at as presenting an array of affordances or opportunities for functional interaction to the individual.

### 2.2.7 Emotionally Competent Stimulus

An emotionally competent stimulus is a stimulus or perception that triggers an emotional response. Such a stimulus may be external or internal or recalled from memory. The stimulus may be brief or subtle and not impinge on consciousness, but may nevertheless initiate a chain of events leading to the emergence of a feeling.

Emotionally competent stimulus varies in their nature and the sense through which they are accessed. Emotionally competent stimuli are central to all human interactions, communication, learning and development. Such stimuli are the heart of every action. Emotionally Competent Stimuli are everywhere and individuals’ principal interactions with the world are through them whereas things which are not emotionally competent tend not to gain attention.

Emotionally competent stimuli, provokes an emotional response and the emergence of feelings. This process precedes any secondary reasoning, thinking, or articulation of the emerging memories, thoughts and feelings.

### 2.2.8 Somatic marker hypothesis

Emotionally competent objects acquire affective meaning within a conceptual integration network which includes body, brain, mind and culture. Selective
perception of bodily feelings, just like external perception and proprioception, is part of the conceptual process and anchors conceptual blends, facilitating and driving the construction of meaning. Emotion and cognition, feelings and conceptual integration, are inextricably intertwined. Somatic markers constitute a crucial input to the blending process.

Damasio (1996) formulated the somatic marker hypothesis that proposes a mechanism by which emotional processes can guide behavior, particularly decision-making. This hypothesis proposes that somatic markers are probably stored in the ventro medial prefrontal cortex of the brain. When individuals make decisions, they must assess the incentive value of the choices available to them, using cognitive and emotional processes. When the individuals face complex and conflicting choices, they may be unable to decide using only cognitive processes, which may become overloaded.

In such cases, somatic markers can help to take a decision. Somatic markers are associations between reinforcing stimuli that induce an associated physiological affective state. Within the brain, somatic markers are thought to be processed in the ventro medial prefrontal cortex. These somatic marker associations can recur during decision-making and guide the individual’s cognitive processing. When a person has to make complex and uncertain decisions, the somatic markers created by the relevant stimuli are summed to produce a net somatic state. This overall state directs the decision of how to act. This influence on decision-making process may occur unconsciously through the brainstem and ventral striatum, or consciously, engaging higher cortical cognitive processing. Damasio proposes that somatic markers direct attention towards more advantageous options, simplifying the decision process.
Ventromedial prefrontal cortex is an essential component of this hypothesized mechanism and therefore damage to this structure will disrupt their proposed action in mediating the development and action of somatic markers.

Emotions, as defined by Damasio, are changes in both body and brain states in response to different stimuli. Physiological changes like muscle tone, heart rate, endocrine release, posture, facial expression, etc. occur in the body and are relayed to the brain where they are transformed into an emotion that tells the individual something about the stimulus that they have encountered. Over time, emotions and their corresponding bodily changes become associated with particular situations and their past outcomes.

When making decisions, these physiological signals or ‘somatic markers’ and their evoked emotion are consciously or unconsciously associated with their past outcomes and bias decision-making towards certain behaviors while avoiding others. For instance, when a somatic marker associated with a positive outcome is perceived, the person may feel happy and motivate the individual to pursue that behavior. When a somatic marker associated with the negative outcome is perceived, the person may feel sad and act as an internal alarm to warn the individual to avoid a course of action. These situation-specific somatic states based on, and reinforced by, past experiences help to guide behavior in favour of more advantageous choices and therefore are adaptive.

According to the somatic marker hypothesis, two distinct pathways reactivate somatic marker responses. In the first pathway, emotion can be evoked by the changes in the body that are projected to the brain—called the “body loop”. For instance, encountering a feared object like a snake may initiate the fight-or-flight response and
cause fear. In the second pathway, cognitive representations of the emotions can be activated in the brain without being directly elicited by a physiological response called the “as-if body loop”. For instance, imagining an encounter with a snake would initiate a similar flight-or-fight response “as-if” you were in that particular situation. In other words, the brain can anticipate expected bodily changes, which allows the individual to respond faster to external stimuli without waiting for an event to actually occur.

2.3 THEORETICAL FRAMEWORK ON CREATIVE THINKING

Creative thinking is thinking out of box. The aim of creative thinking is to produce a novel rather than a routine solution to some problem. This form of thinking therefore has an important basis in imagination; it requires a high degree of flexibility and the capacity to combine seemingly unrelated events. The creative process involves processing relevant ideas and information to come out with creative ideas and perspectives. Creative thinking is generally considered to be involved with the creation or generation of ideas, processes, experiences or objects. The product of creative thinking may be a new and unique way of conceptualizing the surrounding world. The emphasis in creative thinking is on the word ‘new’. Creative thinking is the process which is used when an individual come up with a new idea. It is the merging of ideas which have not been merged before.

Creative thinking is characterized by an inquiring, flexible, and unconstrained thought process that produces ideas which may be unconventional, but are oftentimes insightful. When used in learning situations, creative thinking can be conducive to more effective learning because it requires students to take initiative in their learning, it helps students to internalize rather than simply memorize information, and it
emphasizes long term goals. Creative thinking is a valuable attitude at every level of educational activity but one should keep in mind the diverse extend imposed by formal education on the average performance that can reasonably be expected from students of different levels.

Creative thinking can mean different things to different people. For some it means being imaginative or inventive, taking risks or challenging convention. For others it is about original thinking or producing something that nobody has come up with before. Some believe that the term 'creativity' applies only to those who possess artistic talents.

Focusing on extraordinary individuals, however, simply perpetuates the myth that creative thinking is about special people doing special things. Research shows that there is no specific personality type associated with creative thinking. It is possible to be creative in any activity that engages intelligence because intelligence itself is essentially creative. Creative thinking is rooted in the imagination and the lives are shaped by the ideas that are used to give them meaning. All individuals have creative thinking capacities but in many instances people do not know what they are or how to draw on them.

Crutchfield (1962) suggested that all people are capable of creative thinking because all of the relevant cognitive and motivational processes that account for creative thinking can be found in every individual. However, creative thinking must be developed. In most people most of the time, the creative thinking process get blocked, diverted, diluted or corrupted by other antithetical processes going on in the individual at the same time. It is conceivable that interpersonally dependent individuals, who desire the approval of others, may be reluctant to use learning
strategies that involve creative thinking, because they are perceived as being more risky. However, it seems unlikely that interpersonal dependency could impair an individual’s ability to generate creative ideas, even if it restricts the use or reporting of such ideas.

2.3.1 Qualities of a Person with Creative Thinking

Although creative people are generally high in intellectual ability, they are not necessarily in the very highest ranks. Many of the creative people are talented in some special area or they have certain specific abilities that they can use in their search for new ideas. As many creative thoughts come as sudden insights more likely after hard thinking about a problem, diligence and strong motivation to work at solving problems are characteristics of creative thinkers. People who think creatively seem to have some personality features in common. Some of them are the following.

1. They prefer complexity and some degree of apparent imbalance in phenomena.
2. They are more complex psycho dynamically and have greater personal scope.
3. They are more independent in their judgments.
4. They are more self-assertive and dominant.
5. They reject suppression as a mechanism for the control of impulse.

A personality dimension called origence has been shown to be related to creativity. A person high on this dimension resists conventional approaches that have been determined by others and would rather do his own thing, even if it is unpopular or seems to be rebellious or nonconforming. Such a person will be a creative thinker.
2.3.2 Dimensions of Creative Thinking

Creative thinking is a process of becoming sensitive to specific problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and identifying the difficulty, searching for solutions, making guesses or formulating hypotheses and possibly modifying and retesting them and finally communicating the results effectively to others (Torrance, 1974).

- **Originality:** This refers to new ideas produced by a creative person where he or she generates unfamiliar, non-contradictory, and simultaneously acceptable responses with a tendency to provide far-reaching associations of ideas. This capability can be defined quantitatively in terms of unfamiliar yet acceptable responses when stemming in response to a specific stimulus (Torrance, 1974).

- **Fluency:** This is the ability to produce the largest possible number of meaningful words. According to Guilford (1987), there are two factors of fluency: the verbal fluency, which is manifested in the number of utterings, and ideational fluency, which describes the degree of swiftness in providing a large number of ideas, regardless of the quality of responses. What matters here, as mentioned by Guilford, is the number of responses and ideas rather than single words (Torrance, 1974).

- **Flexibility:** This is the capability of an individual to transfer from one group to another, thereby expressing mental flexibility as well as ease of mental position. Guilford found that there are two kinds of flexibility: spontaneous flexibility and adaptive-flexibility. Spontaneous flexibility is the ability to produce a diversified cluster of thoughts free of dormancy and inertia. Adaptive flexibility is the ability to facilitate problem solving which becomes
more obvious when the problem requires an extraordinary solution (Torrance, 1974).

- **Elaboration:** This is the ability to add details and meanings to original solutions and thoughts (Torrance, 1974).

### 2.3.3 Broadening the Meaning of Creative Thinking

In recent years researchers and educational writers have extended the general meaning of creative thinking so that it incorporates ideas about inventiveness and imagination. This reflects a growing acceptance that creative thinking is not simply about coming up with big ideas, but coming up with practical solutions to everyday problems and then applying them to real life situations. Everything that found around are conceived and developed by practical people who know how to implement creative ideas. Creative thinking can be readily associated with a wide range of everyday tasks and activities, and the importance of creative thinking at a personal level is often greatly underestimated.

#### 2.3.3.1 Hard and Soft Thinking

‘Hard’ and ‘soft’ thinking are terms often associated with creative thinking and they reflect the neurological processes associated with different hemispheres of the brain. Research suggests that the right side of the brain is visual and processes information in an intuitive and simultaneous way, looking first at the whole picture then the details, i.e., soft thinking. The other hemisphere - the left brain - is verbal and processes information in an analytical and sequential way, looking first at the pieces then putting them together to get the whole known as hard thinking.

The right side of the brain is often associated with characteristics such as intuition, imagination, emotions, feelings and artistic creativity. The left side is more
usually associated with planning and organisation, logic, analytical thinking and deduction. The right side of the brain is sometimes referred to as the ‘artist’, whereas the left side is regarded as the ‘judge’. Hard thinking is certain, close down, exact, fast, logic, rational, precise and serious in nature. It gives only one right familiar answer by analyzing differences and categories. Meanwhile soft thinking is doubtful, open up, approximate, slow, waiting, dream like, diffuse and playful. Soft thinking gives many right answers through intuitions resulted from similarities and connections. Hard thinking is black and white whereas soft thinking shows many shades of grey.

Von Oech (1990) believes that creative thinking must be recognised as a process that involves both hard and soft thinking and that it is important to know when each is appropriate. He argues that every person has a ‘judge’ and an ‘artist’ within, and both are required in order to be creative. Even those who are very inventive, and thrive on spontaneity and uncertainty, also need to seek order and be analytical if they are to be successful.

It is now believed that the most powerful creative thinking occurs when the left and right hemispheres of the brain combine to apply both generative and evaluative processes.

2.3.3.2 Processes in Creative Thinking

Creative thinking in the arts and sciences seems to involve a considerable amount of unconscious rearrangement of symbols. The thinker at first makes little progress, but then, perhaps triggered by a fortuitous set of circumstances, a new idea seems to “bubble up” into consciousness, in a seemingly spontaneous manner. Because the creative thinker becomes aware of the new idea suddenly, it is said that
much of the thought has already gone on unconsciously. This sudden appearance of new ideas is called insight. A number of creative people report that after conscious thought has failed them, insight suddenly appears when they are doing something completely unrelated to the problem. Insight may also be incorrect and they require testing to see if they really do represent new solutions to problems.

The creative thinking process is infrequent, by definition and is often takes place during long, lonely hours. Psychologists therefore have been often frustrated in attempts to discover what is happening in creative processes. Research has provided some new ideas, but in many instances progress has been slow or disappointing.

**Stage Theory**

One of the earliest twentieth-century models for the creative thinking process was developed by British sociologist and social scientist Wallas (1926). In the book “The Art of Thought”, he studied about the steps involved in creative thinking. He found that though there was individual difference in the ways creative people thought, there was a recurring pattern and suggested the following stages in creative thinking.

1. **Preparation** :- The thinker formulates the problem and collects the facts and materials considered necessary for the new solution. It included training and hard work.

2. **Incubation** :- During this period some of the ideas that were interfering with the solution tend to fade. The subject may have an idea in the back of his mind for several days or weeks. In addition the creative thinker may have experiences that provide clues to the solution.
3. **Illumination** :- In this stage an idea for the solution suddenly wells up into consciousness. This may happen even when they are thinking about something else.

4. **Evaluation** :- Here the apparent solution is tested to see if it satisfactorily solves the problem.

5. **Revision** :- In this stage if the solution is unsatisfactory the thinker goes back to the creative process or do necessary modifications in it.

   Among these stages the illumination phase received the most attention and partly on this basis creativity was widely believed to be instantaneous. The solution to a novel problem seemed to come suddenly. The creative moment was considered beyond one’s control, an appealing idea because an individual could not directly accountable for unsuccessful efforts.

**2.3.3.3 Some Modern Ideas about Creative Thinking**

   Some decades ago the primary approach to study about creative thinking involved retrospective interviews. Creative People were identified on the basis of their products, and then they were asked to think back on their earlier work and to give an account of what had transpired. In this way the stages or phases of the creative process were identified.

   As in thinking reflectively, critically and analytically, discussions of creativity and its cultivation also have been going on for thousands of years. Wallas’ model for creative thinking balances creative elements in the incubation and illumination phases with critical ones in the preparation and verification phases. His notion that creative insight takes place largely in the subconscious has remained popular to this day.
However, others have proposed that the creative thinking process can be a fully conscious effort to balance imagination with analysis.

In 1931, chemical engineer and psychologist Rossman proposed the following seven-step model for creative thinking:

1. Observation of a need or difficulty
2. Analysis of the need
3. Survey of all available information
4. Formulation of all objective solutions
5. Critical analysis of these solutions for their advantages and disadvantages
6. The birth of the new idea - the invention
7. Experimentation to test out the most promising solution, and the selection and perfection of the final embodiment by some or all of the previous steps.

Like Wallas, Rossman highlighted insight and innovation as key features of the creative process. However, he also emphasizes the critical, analytical and experimental aspects. So Rossman’s model draws notable parallels with the scientific method.

Osborn, who first developed the technique of “brainstorming,” also stressed the importance of creativity in science, both in the development of initial working hypotheses and in the use of the imagination in experimentation and testing. In 1953, Osborn proposed another model for a seven-step creative process:

1. **Orientation**: Pointing up the problem
2. **Preparation**: Gathering pertinent data
3. **Analysis**: Breaking down the relevant material
4. **Hypothesis**: Piling up alternatives by way of ideas
5. **Incubation:** Letting up, to invite illumination

6. **Synthesis:** Putting the pieces together

7. **Evaluation:** Judging the resulting ideas

Osborne’s model includes an emphasis on Wallas’ “incubation” phase, but is otherwise quite similar to the process developed by Rossman. Both models place a strong emphasis on the purposeful formulation of solutions or hypotheses, along with experimentation or evaluation to test their validity. Each also emphasizes the need for fluidity and flexibility in following the steps for the creative process.

Osborne’s colleagues Isakson and Parnes refined his conception in the development of the creative problem solving model. As outlined by Isakson and Parnes (1985), the creative problem solving process comprises six steps:

1. **Objective-Finding:** List broad objectives, goals or purposes, then select best statement.

2. **Data-Finding:** List data dealing with each chosen objective, then select most pertinent.

3. **Problem-Finding:** List problems or challenges for attainment of each objective, then select most promising definition for creative attack.

4. **Idea-Finding:** List ideas, alternatives, approaches, strategies, means or options for handling chosen challenge, then pick out those that are most interesting or promising.

5. **Solution-Finding:** List criteria for evaluating picked-out ideas, then choose criteria, use them to and evaluate the chosen ideas.

6. **Acceptance-Finding:** List ways of implementing the ideas, then develop plans, carry them out, obtain feedback and monitor results.
In the creative problem solving model, each step in the process suggests the use of creative facilities in developing the initial lists, and critical techniques in selecting and evaluating them. The creative problem solving model suggests that there can be large areas of overlap between the processes of creative and critical thinking.

Further studies indicate that many creative persons did not go through these sequences. The stages were not directly separated, and sometimes they did not appear at all. There seemed to be no incubation in one instance; the solution appeared gradually in another. Today the view of creativity appearing in distinct stages or steps is generally discredited, even though some aspects of this description appear to be related to the creative thinking process.

2.3.3.4 Role of Trial and Error

Creative thinking is now believed to be more diffuse and less dramatic than the stages indicated in stage theory. The creative process instead apparently involves considerable trial and error, which is a random and exploratory activity, without a clear hypothesis. The subject use one approach, discards it, tries another, and so forth. The importance of flexibility is thus emphasized.

For these reasons, efforts to understand the operations in creative thinking have changed. They now involve eavesdropping by the investigator, rather than personal interviews. Laboratory subjects, confirmed with problems requiring novel solutions, are asked to think aloud, stating each of their ideas as they search for a solution. These tasks pertain to various academic and practical problems, including verbal reasoning, numerical reasoning and commonsense situations and there is an irregular development of successful ideas. Usually the ideas have been devised, revised and recognized at several stages (Perkins, 1981).
With human subjects, eavesdropping often reveals the use of covert trial and error in which several solutions are attempted implicitly, in the subject’s mind, before overt behavior appears. Solutions are proposed, evaluated and rejected without any obvious action. Rarely does one solve a complex problem without making several such attempts. The extent to which the solution seems to appear suddenly depends partly on prior experience, partly on the use of covert trial and error, and partly on the accuracy with which the individual recalls the complete reasoning power later.

2.3.3.5 Importance of Purpose

It has been argued for years that creative thinking involves some sort of unconscious motivation, perhaps even bordering on insanity. Or at least creativity seems to be the result of some blend of the irrational and rational mind (Arieti, 1978). Several modern investigators contend, however, that there is yet little evidence that some extended unconscious process is at work. Instead, a most important, ingredient beyond basic reasoning, is a sense of commitment. The creator generally has the goal of being original, trying to do something difficult. This goal is critical. Apart from this sense of purpose, the thought processes may not be significantly different from those in other instances of reasoning.

This reasoning may be inductive, deductive, evaluative or of some other type. In evaluative reasoning a judgment must be made about the success of a solution, using criteria regarded as important and relevant to the issue. The choosing of these criteria and ranking them according to priority are most important. Once these steps are taken, the process is reduced to inductive and deductive reasoning.
The validity of a finding, always of concern in problem solving, is determined by comparing this outcome with the original criteria of success.

In a limited way it can be said that the concepts – trial and error, insight and evaluative reasoning – pertain in a loose way to the oversimplified stage theory. The first stage, preparation, is based upon obvious trial and error. The second, incubation, may involve covert trial and error. The nebulous concept of insight is relevant to the illumination stage. And verification, the final stage, certainly depends upon evaluative reasoning, but must not forget purpose. The creative person often has the aim of being creative or else is so persistent in attempts to solve a difficult problem, that perhaps through trial and error, he or she eventually develops a creative solution.

2.3.3.6 Accidental or Deliberate Thinking

The creative thinking process can be accidental or deliberate. Without using special techniques creative thinking does still occur, but usually in the accidental way; like a chance happening making a person think about something in a different way and then discovering a beneficial change. Other changes happen slowly through pure use of intelligence and logical progression. Using this accidental or logical progression process, it often takes a long time for products to develop and improve. In an accelerating and competitive world this is obviously disadvantageous.

Using special techniques, deliberate creative thinking can be used to develop new ideas. These techniques force the merging of a wide range of ideas to spark off new thoughts and processes. Brainstorming is one of these special techniques, but traditionally it starts with unoriginal ideas.
Developments of products occur much more rapidly using these deliberate techniques than by accident. Many people known for being creative use these techniques, but are not aware they are doing so because they have not been formally trained in them. With practice, ongoing creative thinking (the continuous investigation, questioning and analysis that develops through education, training and self-awareness) occurs all the time. Ongoing creativity maximizes both accidental and deliberate creative thinking. Ongoing creativity takes time and deliberate practice to become skillful at, but it is surprising how quickly it becomes an attitude, not a technique.

The first step to take is to learn the creative thinking techniques so that one can deliberately use them to come up with new ideas. Such a person will then be at an immediate advantage over those who don't know how to use them. Then one has to practice the techniques to increase skill at ongoing creative thinking.

2.3.4 Problem Solving and Creative Thinking

While discussing about the process of creative thinking interest has focused particularly on the more dramatic and mysterious aspects of creativity – the unconscious processes that are supposed to occur during “incubation”, the imagery employed in creative thinking and its significance for the effectiveness of the thinking, and, above all, the phenomenon of “illumination”, the sudden flash of insight that reveals the solution of a problem long pursued. At this background, Allen, Shaw and Simon (1958) felt the need for a clearer idea of the overall requirements and aims of a theory for creative thinking. They proposed that a theory of creative thinking should consist of:
1. Completely operational specifications for the behavior of mechanism or organism that, with appropriate initial conditions, would in fact think creatively.

2. A demonstration that mechanisms behaving as specified by these programmes would exhibit the phenomenon that commonly accompanies creative thinking (e.g., incubation, illumination, formation and change in set etc.)

3. A set of statements – verbal or mathematical – about the characteristics of the class of specifications or programmes that includes the particular example specified.

Stated otherwise one could have satisfactory theory of creative thought if they could design and build some mechanisms that could think creatively or exhibit behavior just like that of a human carrying on creative activity, and state the general principles on which the mechanism were built and operated.

While regarding all human complex problem solving as creative, then successful programmes for problem solving mechanism that simulate human problem solvers already exists, and a number of their general characteristics are known. If the term “creative” is reserved for activities like discovery of the special theory of relativity, then no example of a creative mechanism exists at the present time. The success already achieved in synthesizing mechanisms that solves difficult problems in the same manner as human is beginning to provide a theory of problem solving that is highly specific and operational.

In the psychological literature, “creative thinking” designates a special class of activities, with somewhat vague and indefinite boundaries. Problem solving is called creative to the extent that one or more of the following conditions are satisfied.
1. The product of the thinking has novelty and value either for the thinker or for his culture.

2. The thinking is unconventional, in the sense that it requires modification or rejection of previously accepted ideas.

3. The thinking requires high motivation and persistence: either taking place over a considerable span of time, continuously or intermittently, or occurring in high intensity.

4. The problem as initially posed was vague and ill-defined so part of the task was to formulate the problem itself.

A problem solving process can exhibit all of these characteristics to a greater or lesser degree, but it is unable to find any more specific criteria separating creative from noncreative thought processes. Moreover, the data currently available about the processes involved in creative and noncreative thinking show no particular differences between the two. Not only do the processes appear to be remarkably similar from one task to another – agreeing well with Wallas account of the stages in problem solving – but it is impossible to distinguish, by looking solely at the statistics describing the processes, the highly skilled practitioner from the rank amateur.

Similarly there is a correlation between creativity and proficiency in the more routine intellective tasks that are commonly used to measure intelligence. There is little doubt that virtually all the persons who have made major creative advances in science and technology in historic time have processed very great general problem solving powers. Thus creative activity appears simply to be a special class of problem solving activity characterized by novelty, unconventionality, persistence, and difficulty in problem formulation.
2.3.5 Balancing Analytic, Synthetic, and Practical Abilities

According to Sternberg (1985) creative work requires applying and balancing synthetic, analytic and practical ability.

- Synthetic ability is what typically people think of as creativity. It is the ability to generate novel and interesting ideas. Often the person who is called creative is a particularly good synthetic thinker who makes connections between things that other people don't recognize spontaneously.

- Analytic ability is typically considered to be critical thinking ability. A person with this skill analyzes and evaluates ideas. Everyone, even the most creative person has better and worse ideas. Without well-developed analytic ability, the creative thinker is as likely to pursue bad ideas as to pursue good ones. The creative individual uses analytic ability to work out the implications of a creative idea and to test it.

- Practical ability is the ability to translate theory into practice and abstract ideas into practical accomplishments. An implication of the investment theory of creativity is that good ideas do not sell themselves. The creative person uses practical ability to convince other people that an idea is worthy.

Creative thinking requires a balance among synthetic, analytic, and practical abilities. The person who is only synthetic may come up with innovative ideas, but cannot recognize its importance. The person who is only analytic may be an excellent critic of other people's ideas, but is not likely to generate creative ideas. The person who is only practical may be able to convince others about new ideas or products but are not able to recognize genuinely creative ideas.
2.3.6 Origins and Consequences of Novelty

Mandler (1995) states that the mental products that are called novel, and the creative acts that produce novel thoughts and actions, need a prepared mind, just as much as well practiced and habitual actions do. The mechanism that produces novel acts and thoughts are part of an individual’s general mental armamentarium. A psychology of creation needs to postulates those mental processes and states that make possible the production of something novel. Therefore, one of the ways of approaching creative thinking is the exploration of how creative or novel acts or thoughts can be generated by the everyday processes of the human mind and body. Mandler examined various dimensions that characterise creation and novelty in significant ways.

Varieties of Creation: The topic of creativity, and the related topic of novelty, occupies an umbrella concept rather than a single characteristic of human minds.

Individual versus Social Definitions of Creativity: A creative act, the production of something novel, exists in a social context that defines a degree of novelty. A particular act may novel for all of humanity, for a specific social-cultural unit, or for an individual. Along that continuum, anything new for all of humanity is also novel for all levels below it, whereas a novel act for an individual may not be novel for each of the higher levels. At the higher levels, a creation that is new only at a lower level may or can be essentially uninteresting. From a psychological point of view, the focus of interest is, of course, a creative or novel act by an individual, whether or not the same novelty has been produced by any or many other individuals before. A psychologist will always concern about the way of thinking resulted in something novel.
**Deliberate versus Unintentional Creations:** The production of novel ideas in mind can be based on the goal to produce something novel. The novel thought or act may come to mind deliberately, or it may pop into mind unintentionally.

**Goal Defined Creativity:** The deliberate creation of novelty introduces another dimension of creativity, the kind of goal or end state required. Most so called problem solving situations require some degree of creativity. There is a search for a solution that is novel to the individual which is not available at the beginning of the search. The research requires some prior notion as to the kind or type of solution that required, followed by a search for a token that fits the problem encountered. If a particular goal exists, then the act of creation is deliberate in the long term, though it may be not deliberate at the moment of production. The solution may come to mind unexpectedly.

**Subjective Sense of Novelty:** The subjective sense of novelty is another dimension that cuts novelty in an important way. Subjective awareness of novelty goes hand in hand with deliberate attempts at novelty. People are frequently aware about the novel constructions produced by others, though not usually in the course of social interaction.

**Degrees of Novelty:** It is important to consider the continuum from the truly old and habitual to the strikingly novel or creative. In the extremes, there is no difficulty in distinguishing the old from the new. There is always something novel in whatever one do or say. Creativity, however, is usually thought to include only the true novel; there is no argument as to the novelty.

**Continuous versus Discontinuous Problem Solving:** Problem solving that requires creative solutions may be continuous, ongoing until such time as the solution is
reached or discontinuous, the active deliberate search is stopped or abandoned for sometime before being taken up again. The latter case is usually subsumed under the topic of incubation; the solution occurs after a pause or interval following attempts at solution.

**Dreams - Novelty and Consciousness:** Some characteristics of dreams provide important clues to the occurrence of unintentional and usually novel thought. Dreams come to consciousness without any intent on the part of the dreamer. The manifest content of dreams has long been known to be in part of a reflection of recent experiences, of materials of which one have been conscious before. These residues tends to include actions that have not been brought to a conclusion, unsolved problems, rejected or suppressed thoughts, and often routine occurrences that have not been further attended to in the pressure of everyday life. At the same time, manifest dream content may include subsidiary and unnoticed memories, as well as materials that seem long forgotten. Thus, dreams contain to a large extent recent activations but not always the most activated events of one’s recent life.

**2.3.7 Creative Cognition Approach**

Creativity depends on how people think. Obviously it depends on many factors as well, such as the environment, one’s culture, and individual abilities. However, mental processes are the essence and the engine of creative endeavors. Although there are many useful and productive approaches to understanding creativity, the creative cognition approach focuses on the cognitive processes and structures that underlie creative thinking. Smith, Ward and Finke (1995) had a good discussion on creative cognition approach.
The basic goal of the creative cognition approach is to improve understanding of creative processes by using the methods and concepts of cognitive science. There is no single process that can identify as the creative process. Instead, creative thinking encompasses special combinations and patterns of the same cognitive processes seen in other noncreative endeavors. Another goal of the creative cognition is to learn more and raise questions about cognition by examining it in creative contexts. For example research on how creative thinking is inhibited or blocked may stimulate new ideas about how noncreative thinking is inhibited. The creative use of categories may yield insight about the way categories in general are represented. Theoretical models for inducing new ideas may have implications for models of text comprehension. Creative cognition approach suggests new ideas about cognition by placing it in a cognitive context.

The creative cognition approach has roots in associationism, Gestalt psychology and computational modeling. The associationist approach reflected a work ethic: more work should be rewarded with more products and greater success. Because creative behavior was conceived as generalizations of learned behavior, it was thought that learning more associations should improve creativity. The Gestalt point of view, in contrast, posited special processes in creative thinking, particularly insight. Computational approaches to creativity have emphasized precisely defined operations that can yield the same sorts of ideas that are produced by creative humans.

The claim that the same underlying structures and processes involved in noncreative cognition can explain creative thinking may be thought as an approach for demystifying creativity. The hidden and fascinating ways in which new ideas are created may seem less mysterious when expressed in terms that are used to explain
everyday cognition. The idea of demystification, however, presupposes that creative 
thinking is not an everyday activity and that noncreative cognition is perfectly well 
understood. Neither assumption is valid. On the contrary, creative thinking evidently 
involves many aspects of everyday cognition, and noncreative thinking remains 
somewhat mysterious. Creative cognition should therefore help the understanding of 
both creativity and cognition.

The creative cognition approach should lead to a better understanding of how 
to improve or optimize creativity. Whereas a personality approach is better suited to 
identify creative people or assessing their creative talents, the creative cognition 
approach focuses on the cognitive process that lead to creativity. The better one 
understands these processes, the more will be the ability to improve them.

2.3.8 Creative Thinking: Reproduction versus Restructuring in the Real World

In the study of creative thinking, there has been a tension between views that 
assume that creativity can be explained on the basis of the thinker’s applying his or 
her knowledge to the situation at hand and those that assume that in order to deal with 
the ability to go beyond past experience. Gestalt theorists’ development of the closely 
related concepts of restructuring and insight has been central to the discussion of this 
issue in the domain of creative problem solving.

In the gestalt analysis of problem solving, emphasis was placed on the ability 
to go beyond past experience and produce something new in response to the demands 
of a problem. This productive thinking was contrasted with reproductive thinking, 
which was the application of some previously acquired knowledge to a problem. 
Productive thinking, which depends on past experience in only the most general way,
came about when thinkers analyse deeply the requirements of the problem and what was available to bring them about.

It is typical for thinkers to approach a problem reproductively, that is on the basis of similar problems encountered in the past. This track will fail, however, with a new problem that is similar to past experience only in superficial ways, or on the surface, and is different from previously encountered problems in its deep structure. Interpreting such a problem through the prism of past experience will by definition lead the thinker astray. In order to solve such a problem, the thinker must abandon the initial approach that seems from past experience and restructure that problem in response to the specific requirements of the problem.

Thus, in the Gestalt analysis of creative thinking as exemplified by problem solving, it was concluded that a reliance on past experience could actually interfere with effective problem solving. This conclusion was based on the assumption that the important problems that confront by individuals demand productive thinking; they require them to change the way of approaching the problem and view it in a new way. The approach based on experience and reproductive thinking would have to be abandoned, and the situation restructured, before progress could take place. This restructuring was assumed to form the basis for insight to the problem; that is, the subjective experience of insight is the result of thinker’s restructuring of the situation.

Laboratory demonstrations of such phenomena as problem solving set provided graphic evidence that designing situations in which analyzing a problem on its own terms resulted in excellent performance, whereas past success with similar problems was a hindrance. In these well known demonstrations, “set” subjects were first given experience solving a series of similar-appearing problems, all of which had
the same complicated solution. When they were presented with a similar appearing problem that could be solved using the set solution or a much a simpler one, set subjects often were blind to the simpler solution, while naïve subjects saw it immediately. Such results were taken as an analogue of real world situations, in which it was assumed that experience could also blind thinkers and interfere with efficient performance.

This negative orientation toward the role of experience in creative thinking has gained wide acceptance; it has become standard in writings on creativity to warn would be creative thinkers that they must be cautious of falling victim to experience. However, there has not been a broad test of this assumption; that is, there has been no attempt to analyse situations in which creative advances have occurred in the world in order to see if those situations have indeed rebuffed initial approaches based on experience.

The mechanism underlying creative thinking is not simple or uniform. It is incorrect to assume first that all creative advances are the result of restructuring i.e., of, productive thinking, since several creative advances have been the result of reproductive thinking, in which the past directly serve the present. When creative thinking does result in restructuring of a solution, it always occurs as the result of productive thinking. Although creative thinking produces novelty, it does so by not rejecting what has been done before. Rather creative thinking moves beyond what has done only slowly, and when it does, it is more as a modification of the past than rejection of it.
2.3.9 Culture and Creative Thinking Abilities

Culture has a strong influence on creativity by supporting or inhibiting the development of creative thinking abilities. A number of important environmental factors influence creative thinking abilities which include the cultural and personal barriers. Jones (1984) classified such factors as strategic (i.e. value, beliefs, morals, and other habits acquired from society and self-image) or perceptual, and organization or group barriers that can stifle the effort of individuals to function creatively. Ekvall and Tangeberg (1986) identified ten factors in society that influence creative thinking abilities: challenge and motivation, freedom, support of new ideas, trust, openness, liveliness and dynamism, playfulness and humor, debates, conflict, and risk taking.

According to Csikszentmihalyi (2005) who formulated a theory of creativity and culture, emphasized that one cannot study creative thinking abilities by isolating individuals and their work from the social and historical events in which their actions are carried out. Csikszentmihalyi, explains that creativity is a very complex interaction among a person, a field, and a culture. He emphasized that creative thinking is the product of three main forces: social institutions (field: the social organizations of domain), a stable culture (domain: symbol system), and finally the individual who brings the change to be considered as creative (person). Csikszentmihalyi represented the set of relationships that constitute creativity through the "creativity map". It is important to realize that the relationships shown in the figure are dynamic links of a circular causality. In other words, each of the three main systems (person, field, and domain) affects the others and is affected by them in turn.
Csikszentmihalyi emphasized that without a culturally defined domain of action in which innovation is possible, the person cannot get started. He pointed out that information and ideas that a creative person uses had existed before the creative person got started with his thoughts; it had been stored in the symbol system of the culture, in the customary practices, the language, and the specific notation of the "domain." Therefore, focusing on the individual out of context does not allow the observer to evaluate the variation produced. A person who has no access to this

**Figure 2.2 Creativity map (Csikszentmihalyi, 2005)**

**Systems view of creativity**

(Csikszentmihalyi, 2005)
information and data will not be able to make a creative contribution, regardless to what extent he or she is able or skilled. An outcome of this relationship is that depending on the structure of the domain, it might be either easy or more difficult for a person to innovate. The more precise the notation system the easier it is to detect change and hence to evaluate whether or not the person has made an original contribution. The "person" within the system, his contribution to the creative process has to produce some variation in the information inherited from the culture. Every field is embedded in a specific social system. The resource of the larger society encourages the support and recognition of new ideas. But some individuals will face difficulty in establishing the creativity of a new idea. Similarly, a new idea will face difficulties in being recognized as creative if the field is defensive, rigid, or embedded in a social system that discourages novelty. He emphasized that it is not only in the transition from the domain to the person, but it is also in the move from the person to the field, and from the field back to the domain. The only way to establish whether or not something is creative is through comparison, evaluation, and interpretation of a particular culture. The model suggests that without people in fields who become attracted to the new idea, the creative process will be aborted. If no qualified persons are willing to invest their energy in preserving the variation, it will not become one of the greatest ideas that future generations will remember.

As Csikszentmihalyi (2005) stated, creativity is not only referenced on the personal level and the person's work, but also as a phenomenon that results from interaction between multiple factors. Most researchers regard the stimulation and inhibition factors to creativity were operational in the social and cultural context.
According to Starko (1995), "creative contributions do not spring forth in a vacuum; they are built on the knowledge and efforts of those who have gone before".

Torrance (1966) stated that cultural systems have an effect on creativity. He found that the developmental curve of creativity varied from country to country, reflecting periods of growth and slump. He considered the slump of creative thinking that occurs in children at different ages as unhealthy; he recommended some changes in social values regarding children’s creative development. However, Mackinnon (1966) regarded the developmental curve of creativity growth and slumps that occur at different ages as inevitable and to be healthy phenomena.

Family or parental attitude are also considered as a significant force in encouraging or discouraging creative thinking in a particular culture. Mackinnon indicated that highly creative persons come from a special kind of environment, which facilitates the emergence of creative thinking. In cross-cultural studies of creative thinking, multiple investigators completed tests and have found that socio-cultural factors have a strong influence on measuring the creative abilities in children. Torrance stated that the more highly developed the culture, the better children perform on creative tests. However, Maccoby and Jacklin (1975) found that after conducting different long-term cross-cultural studies and presenting various ways to measure creative thinking in some cultures in early school years there were no significant differences in creative thinking gender-wise, but that at later ages in elementary school, girls performed better in verbal tests over boys. Raina (1966) indicated that these differences were related to the kind of treatment the children received because of their gender and identification with the gender roles in their culture.
2.4 THEORETICAL FRAMEWORK ON LOCUS OF CONTROL

Within psychology, Locus of Control is considered to be an important aspect of personality. The concept was developed originally by Julian Rotter in the 1950s. It is an individual's perception about the underlying main causes of events in his or her life.

Locus of control refers to an individual's generalized expectations concerning where control over subsequent events resides. In other words, who or what is responsible for what happens. It is analogous to, but distinct from, attributions. According to Weiner the "attribution theory assumes that people try to determine why people do what they do, i.e., attribute causes to behaviour." There is a three stage process which underlies an attribution. In the first stage the person must perceive or possibly observe the behaviour. Second stage is to try and figure out if the behaviour was intentional, and stage three is to determine if the person was forced to perform that behaviour. The latter occur after the fact, that is, they are explanations for events that have already happened. Expectancy, which concerns future events, is a critical aspect of locus of control. Locus of control is grounded in expectancy-value theory, which describes human behaviour as determined by the perceived likelihood of an event or outcome occurring contingent upon the behaviour in question, and the value placed on that event or outcome. More specifically, expectancy-value theory states that if someone values a particular outcome and believes that taking a particular action will produce that outcome, then they are more likely to take that particular action.

Julian Rotter's original (1966) locus of control formulation classified generalized beliefs concerning who or what influences things along a bipolar
dimension from internal to external control. "Internal control" is the term used to describe the belief that control of future outcomes resides primarily in oneself while "external control" refers to the expectancy that control is outside of oneself, either in the hands of powerful other people or due to fate or chance. Levenson (1973) offered an alternative model. Whereas Rotter's conceptualization viewed locus of control as unidimensional (internal to external), Levenson's model asserts that there are three independent dimensions: Internality, Chance, and Powerful Others. According to Levenson's model, one can endorse each of these dimensions of locus of control independently and at the same time. For example, A person might simultaneously believe that both oneself and powerful others influence outcomes, but that chance does not.

2.4.1 History of the concept

Locus of control refers to people’s premise on controlling their lives. The concept of locus of control was first used by Phares and later organized by Rotter in (1966). To Phares, Locus of control is the belief regarding whether internal or outside forces have control over their success. If people hold themselves responsible for what they live, their locus of control is internal. If they hold outside events responsible for what they live, it is external.

Locus of control was formulated within the framework of Rotter's (1954) social learning theory of personality. Rotter used the terms internal locus of control and external locus of control for the first time. Lefcourt (1976) defined perceived locus of control as follows: "Perceived control is defined as a generalised expectancy for internal as opposed to external control of reinforcements". Early work on the topic of expectancies about control of reinforcement had, as Lefcourt
explains, been performed in the 1950s by James and Phares prepared for unpublished doctoral dissertations supervised by Rotter at The Ohio State University. Attempts have been made to trace the genesis of the concept to the work of Alfred Adler, but its immediate background lies in the work of Rotter’s students, such as James, who studied two types of expectancy shifts:

- Typical expectancy shifts, believing that a success or failure would be followed by a similar outcome; and
- Atypical expectancy shifts, believing that a success or failure would be followed by a dissimilar outcome.

Work in this field led psychologists to suppose that people who were more likely to display typical expectancy shifts were those who more likely to attribute their outcomes to ability, whereas those who displayed atypical expectancy would be more likely to attribute their outcomes to chance. This was interpreted as saying that people could be divided into those who attribute to ability (an internal cause) versus those who attribute to luck (an external cause). However, after 1970, Weiner pointed out that attributions to ability versus luck also differ in that the former are an attribution to a stable cause while the latter an attribution to an unstable cause.

A revolutionary paper in this field was published in 1966, in the journal Psychological Monographs, by Rotter. In it, Rotter summarized over ten years of research by himself and his students, much of it previously unpublished. Early history of the concept can be found in Lefcourt (1976), who, early in his treatise on the topic, relates the concept to learned helplessness. Rotter discussed problems and misconceptions in others' use of the internal versus external control of reinforcement construct.
2.4.2 Theories Related to Locus of Control

The way individuals interpret events in life has a profound effect on their psychological well-being. If people feel they have no control over future outcomes, they are less likely to seek solutions to their problems. The far-reaching effects of such maladaptive behaviors can have serious consequences, which has led many social psychologists to examine the origin of locus control, describe the ways in which they function and how the people behave in different situations as well as its impact on the social world. Control is a concept that plays an important role in several psychological theories. It is central to Rotter’s (1954) social learning theory, Seligman’s (1975) theory of learned helplessness and Weiner’s (1986) attributional analysis of motivation and emotion and it is the key concept in Bandura’s (1977) self-efficacy theory.

2.4.2.1 Social Learning Theory

Social learning theory is defined in terms of individuals' goals, expectancies, and social reinforcements. According to social learning theory, man's behaviour is determined by his goals. Behaviour is always directional. An individual responds with those behaviours that he has learned will lead to the greatest satisfaction in a given situation (Rotter, 1971). According to Strain (1993), Rotter’s social learning theory proposes that the probability of a behaviour occurring is related to the individual's expectancy that the behaviour will gain reinforcement and that the reinforcement has value to the individual. Social learning theory of locus of control was given by Rotter. Rotter chose the label “Social Learning” because the theory stressed the fact that majority of basic modes of behaviour are learned in social situation and are inextricably fused with need requiring for their satisfaction and the mediation of
another person (Naila, 2001). Bandura’s (1997) social learning theory posits that people learn from one another, via observation, imitation, and modeling. People learn through observing others’ behaviour, attitudes, and outcomes of those behaviours. “Most human behaviour is learned observationally through modeling: from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action”. Social learning theory explains human behaviour in terms of continuous reciprocal interaction between cognitive, behavioural, and environmental influences. The theory has often been called a bridge between behaviourist and cognitive learning theories because it encompasses attention, memory, and motivation. According to Morris (1993), the main idea of social learning theory remains the same that there is always an interaction among three factors, that being the person, the situation, and the evaluation of expectancies obtained by that person from experiences. He believed that a psychological theory should have a psychological motivational principle. Rotter chose the “empirical law of effect” as his motivating factor. The law of effect states that people are motivated to seek out positive stimulation, or reinforcement, and to avoid unpleasant stimulation. Rotter combined behaviorism and the study of personality, without relying on physiological instincts or drives as a motive force.

The main idea in Rotter's social learning theory is that personality represents an interaction of the individual with his or her environment. One cannot speak of a personality, internal to the individual that is independent of the environment. Neither can one focus on behavior as being an automatic response to an objective set of environmental stimuli. Rather, to understand behavior, one must take both the individual (i.e., his or her life history of learning and experiences) and the
environment (i.e., those stimuli that the person is aware of and responding to) into account. Rotter describes personality as a relatively stable set of potentials for responding to situations in a particular way.

Rotter sees personality, and therefore behavior, as always changeable. Change the way the person thinks, or change the environment the person is responding to, and behavior will change. He does not believe there is a critical period after which personality is set. But, the more life experience you have building up certain sets of beliefs, the more effort and intervention required for change to occur. Rotter conceives people in an optimistic way. He sees them as being drawn forward by their goals, seeking to maximize their reinforcement, rather than just avoiding punishment.

Rotter has four main components to his social learning theory model predicting behavior. These are behavior potential, expectancy, reinforcement value, and the psychological situation.

**Behavior Potential**: Behavior potential is the likelihood of engaging in a particular behavior in a specific situation. In other words, what is the probability that the person will exhibit a particular behavior in a situation? In any given situation, there are multiple behaviors one can engage in. For each possible behavior, there is a behavior potential. The individual will exhibit that behavior which has the highest potential.

**Expectancy**: Expectancy is the subjective probability that a given behavior will lead to a particular outcome, or reinforcer. How likely is it that the behavior will lead to the outcome? Having "high" or "strong" expectancies means the individual is confident that the behavior will result in the outcome. Having low expectancies means the individual believes it is unlikely that his or her behavior will result in reinforcement. If the outcomes are equally desirable, one will engage in the behavior
that has the greatest likelihood of paying off (i.e., has the highest expectancy). Expectancies are formed based on past experience. The more often a behavior has led to reinforcement in the past, the stronger the person's expectancy that the behavior will achieve that outcome now.

It is important to note that expectancy is a subjective probability, because one common source of pathology is irrational expectancies. There may be no relationship whatsoever between the people’s subjective assessment of how likely a reinforcement will be and the actual, objective probability of the reinforcer's occurring. People can either over or underestimate this likelihood, and both distortions can potentially be problematic

**Reinforcement Value:** Reinforcement is another name for the outcomes of behavior. Reinforcement value refers to the desirability of these outcomes. Things that want to happen or attracted to, have a high reinforcement value. Things that do not want to happen or wish to avoid, have a low reinforcement value. If the likelihood of achieving reinforcement is the same, one will exhibit the behavior with the greatest reinforcement value i.e., the one directed toward the outcome that preferred the most.

As with expectancy, reinforcement value is subjective, meaning that the same event or experience can vastly differ in desirability, depending on the individual's life experience. Punishment from a parent would be negatively reinforcing to most children, and something to be avoided. However, children who get little positive attention from parents can seek out parental punishment because it has a higher reinforcement value than neglect.

The value of any given reinforcer is determined in part by other future reinforcers it might lead to. For example, doing well on an exam in a particular class
would have a heightened reinforcement value, if you believe that doing well in that class will lead to being able to work in your professor's lab. Therefore, even an apparently trivial event can have a very strong reinforcement value, either positive or negative, if the individual sees it as leading to other strongly valued reinforcers.

The least amount of reinforcement that still has a positive value is known as the minimal goal. If people achieve an outcome that equals or exceeds their minimal goal, they will feel that they have succeeded. When the level of reinforcement falls below an individual's minimal goal, that reinforcement feels like failure. People differ in their minimal goals. Thus, the same outcome may represent success to one person with a lower minimal goal while it feels like failure to another person with a higher minimal goal.

Behavior Potential (BP), Expectancy (E) and Reinforcement Value (RV) can be combined into a predictive formula for behavior:

$$BP = f(E \& RV)$$

This formula can be read as follows: behavior potential is a function of expectancy and reinforcement value. Or, in other words, the likelihood of a person's exhibiting a particular behavior is a function of the probability that that behavior will lead to a given outcome and the desirability of that outcome. If expectancy and reinforcement value are both high, then behavior potential will be high. If either expectancy or reinforcement value is low, then behavior potential will be lower.

**Psychological Situation:** Although the psychological situation does not figure directly into Rotter's formula for predicting behavior, Rotter believes it is always important to keep in mind that different people interpret the same situation differently. Again, it is people's subjective interpretation of the environment, rather than an
objective array of stimuli, that is meaningful to them and that determines how they behave.

An important dimension of personality theories is the generality versus specificity of its constructs. General constructs are broad and abstract, while specific constructs are narrow and concrete. Both types of constructs have their advantages. A theory with general constructs allows one to make many predictions, across situations, from knowing only a small amount of information. The disadvantage of general constructs, though, is that they are harder to measure and the predictions made from them have a lower level of accuracy. Specific constructs, on the other hand, are easier to measure, and they can be used to make more accurate predictions. However, these predictions are limited to being situation-specific.

For example, knowing that someone is a generally hostile person allows others to make predictions that this individual will be hostile toward a range of people. Across situations, this person is likely to be more hostile to others than someone who is low in hostility. However, an individual’s ability predict how hostile this person would be to a particular person is limited, because there may be other factors that determine whether this individual will treat the other person in a hostile way during a particular encounter. On the other hand, if it is known that this person hates a particular person, one can predict with a high level of accuracy that this person will be hostile towards other. But, it will not be able to predict whether this person will treat other people in a hostile way.

The strength of Rotter's social learning theory is that it explicitly blends specific and general constructs, offering the benefits of each. In social learning theory, all general constructs have a specific counterpart. For every situationally specific
expectancy there is a cross-situational generalized expectancy. Social learning theory blends generality and specificity to enable psychologists to measure variables and to make a large number of accurate predictions from these variables.

For many people, their only exposure to the ideas of Rotter is his concept of generalized expectancies for control of reinforcement, more commonly known as locus of control. Locus of control refers to people's very general, cross-situational beliefs about what determines whether or not they get reinforced in life. People with a strong internal locus of control believe that the responsibility for whether or not they get reinforced ultimately lies with themselves. Internals believe that success or failure is due to their own efforts. In contrast, externals believe that the reinforcers in life are controlled by luck, chance, or powerful others. Therefore, they see little impact of their own efforts on the amount of reinforcement they receive.

Rotter has written extensively on problems with people's interpretations of the locus of control concept. First, he has warned people that locus of control is not a typology. It is not an either/or proposition. Second, because locus of control is a generalized expectancy it will predict people's behavior across situations. However, there may be some specific situations where people, for example, who are generally external, behave like internals. That is because their learning history has shown them that they have control over the reinforcement they receive in certain situations, although overall they perceive little control over what happens to them. Again, one can see the importance of conceiving of personality as the interaction of the person and the environment.
2.4.2.2 Theory of Learned Helplessness

Learned helplessness theory is the view that clinical depression and related mental illnesses result from a perceived absence of control over the outcome of a situation (Seligman, 1975). Learned helplessness is formally defined as a disruption in motivation, affect and learning following exposure to uncontrollable outcomes. There are three crucial elements to its definition; contingency, cognition and behaviour (Christopher et al, 1993).

1. **Contingency** refers to the objective relationship between actions and outcomes and for helplessness to occur there must be no relationship between a person’s actions and the outcome he or she experiences.

2. **Cognition** is involved in how the person perceives the contingency, explains it and extrapolates from this understanding. The perception of uncontrollability may be accurate or inaccurate but once it occurs the person attempts to explain it. From this explanation they make extrapolations about the future and, when learned helplessness occurs, they expect that their behaviour will not influence future outcomes.

3. **Behaviour** refers to the observable effects of being exposed to uncontrollable outcomes. Most often it involves giving up weaker attempts to control the situation or even failure to try to do so, a behaviour that is incompatible with new learning. The response is also accompanied by negative emotions such as anxiety and sadness (Christopher et al, 1993).

In the course of studying learned helplessness in humans, Seligman found that it tends to be associated with certain ways of thinking about events that form what he termed a person's "explanatory style." The three major components of explanatory style associate with learned helplessness are permanence, pervasiveness, and
personalization. Seligman believes it is possible to change people's explanatory styles to replace learned helplessness with "learned optimism." To combat learned helplessness in both adults and children, he has successfully used technique similar to those used in cognitive therapy with persons suffering from depression. These include identifying negative interpretations of events, evaluating their accuracy, generating more accurate interpretations, and decatastrophizing, i.e., countering the tendency to imagine the worst possible consequences for an event. He has also devised exercises to help children overcome negative explanatory style, one that tends toward permanent, pervasive, and personalized responses to negative situations. Other resources for promoting learned optimism in children include teaching them to dispute their own negative thoughts and promoting their problem-solving and social skills.

2.4.2.3 Attribution Theory

Attribution theory is a social psychology theory concerned with the ways in which people explain or attribute the behaviour of others or themselves. This theory explores how individuals "attribute" causes to events and how this associated perception affects their usefulness in an organization (Woolfolk, 2004). Many years ago, the social psychologist Heider (1958) introduced the term attribution to refer to explanations people give for their own or another person’s action believes. When attribution is based on an internal factor, it is called dispositional attribution and when it is based on external factor, it is called situational attribution. It is important to appreciate the differences between the histories of these two theoretical models in psychology. Attribution theorists have been, largely speaking, social psychologists, concerned with the general processes characterizing how and why people in general
make the attributions do, whereas locus of control theorists have been more concerned with individual differences. Significant to the history of both approaches were the contributions made by Weiner, in the 1970s. Prior to this time, attribution theorists and locus of control theorists had been largely concerned with divisions into external and internal loci of causality. Weiner added the dimension of stability-instability, and somewhat later, controllability, indicating how a cause could be perceived as being internal to a person yet still beyond the person's control. The stability dimension added to the understanding of why people become success or failure after such outcomes (Weiner, 1992).

Heider (1958) distinguished between two general categories of explanation, internal and external. Internal attributions implicate characteristics of the individual such as ability, attitudes, personality, mood and effort for having caused a particular behaviour, whereas external attributions implicate external factors such as the task, other people or luck for causing an event or outcome to occur. He established that successes and failures are interpreted by an individual within this causal framework. Weiner added an additional dimension to causal interpretation when he proposed that the stability of the cause is also included in individual’s explanations of outcomes. The distinction between stable, invariable causes such as innate ability for internal attributions and inherent task difficulty for external attributions as well as unstable, variable causes such as effort and luck respectively was combined with his internal or external dimension to form a basis for classifying the performance attributions made by individuals.

Attribution Theory of Motivation describes how the individual's explanation, justification, and excuses about self or others influence motivation. Attribution theory
Theoretical Overview

(Weiner, 1992) is probably the most influential contemporary theory with implications for academic motivation. It incorporates behaviour modification in the sense that it emphasizes the idea that learners are strongly motivated by the pleasant outcome of being able to feel good about themselves. It incorporates cognitive theory and self-efficacy theory in the sense that it emphasizes the learners' current self-perceptions will strongly influence the ways in which they will interpret the success or failure of their current efforts and hence their future tendency to perform these same behaviours.

According to attribution theory, the explanations that people tend to make to explain success or failure can be analyzed in terms of three sets of characteristics: First, the cause of the success or failure may be internal or external. That is, one may succeed or fail because of factors that is believed to have their origin within the individual or because of factors that originate in the environment. Second, the cause of the success or failure may be either stable or unstable. If one believe that the cause is stable, and then the outcome is likely to be the same if the individual perform the same behaviour on another occasion. If it is unstable, the outcome is likely to be different on another occasion. Third, the cause of the success or failure may be either controllable or uncontrollable. A controllable factor is that which is believed to be altered if an individual wish to do so. An uncontrollable factor is one that is believed to be difficult to alter. An important assumption of attribution theory is that people will interpret their environment in such a way as to maintain a positive self-image. That is, they will attribute their successes or failures to factors that will enable them to feel as good as possible about themselves. In general, this means that when learners succeed at an academic task, they are likely to want to attribute this success to their
own efforts or abilities; but when they fail, they will want to attribute their failure to factors over which they have no control, such as bad teaching or bad luck (Weiner, 1992).

2.4.2.4 Self-efficacy theory

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1994). Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes.

A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable. They approach threatening situations with assurance that they can exercise control over them. Such an efficacious outlook produces personal accomplishments, reduces stress and lowers vulnerability to depression.

In contrast, people who doubt their capabilities shy away from difficult tasks which they view as personal threats. They have low aspirations and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they
dwell on their personal deficiencies, on the obstacles they will encounter, and all kinds of adverse outcomes rather than concentrate on how to perform successfully. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks. Because they view insufficient performance as deficient aptitude it does not require much failure for them to lose faith in their capabilities. They fall easy victim to stress and depression.

**Sources of Self-Efficacy**

People's beliefs about their efficacy can be developed by four main sources of influence. The most effective way of creating a strong sense of efficacy is through mastery experiences. Successes build a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established. If people experience only easy successes they come to expect quick results and are easily discouraged by failure. A resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort.

The second way of creating and strengthening self-beliefs of efficacy is through the vicarious experiences provided by social models. Seeing people similar to them succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities required to succeed. By the same token, observing others' fail despite high effort lowers observers' judgments of their own efficacy and undermines their efforts. The impact of modeling on perceived self-efficacy is strongly influenced by perceived similarity to the models. The greater the assumed similarity the more persuasive is the models' successes and failures.

Social persuasion is a third way of strengthening people's beliefs that they have what it takes to succeed. People who are persuaded verbally that they possess the
capabilities to master given activities are likely to mobilize greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when problems arise. To the extent that persuasive boosts in perceived self-efficacy lead people to try hard enough to succeed, they promote development of skills and a sense of personal efficacy.

Mood also affects people's judgments of their personal efficacy. Positive mood enhances perceived self-efficacy, despondent mood diminishes it. The fourth way of modifying self-beliefs of efficacy is to reduce people's stress reactions and alter their negative emotional proclivities and misinterpretations of their physical states.

It is not the sheer intensity of emotional and physical reactions that is important but rather how they are perceived and interpreted. People who have a high sense of efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are beset by self-doubts regard their arousal as a debilitator. Physiological indicators of efficacy play an especially influential role in health functioning and in athletic and other physical activities.

2.4.3 Locus of control personality orientations

In terms of personality types, the concept locus of control, distinguishes internals, who attribute events to their own control, and externals, who attribute events in their life to external circumstances. For example, students with a strong internal locus of control may believe that their grades were achieved through their own abilities and efforts, whereas those with a strong external locus of control may believe that their grades are the result of good or bad luck, and are hence less likely to work hard for high grades. It should not be thought however, that internality is linked exclusively with attribution to effort and externality with attribution to luck. This has
obvious implications for differences between internals and externals in terms of their achievement motivation. Due to their locating control outside themselves, externals tend to feel they have less control over their fate. People with an external locus of control tend to be more stressed and prone to depression.

**Characteristics**

Empirical research findings have implied the following differences between internals and externals:

- Internals are more likely to work for achievements, to tolerate delays in rewards and to plan for long-term goals, whereas externals are more likely to lower their goals.
- After failing a task, internals re-evaluate future performances and lower their expectations of success, whereas externals may raise their expectations.
- Rotter (1966) believed that internals tend to be higher in achievement motivation than externals.
- Bialer (1961) suggests that internal locus of control is associated with increased ability to delay gratification.
- Internals are better able to resist coercion.
- Internals are better at tolerating ambiguous situations.
- There is also a lot of evidence in clinical research that internality correlates negatively with anxiety, and that internals may be less prone to depression than externals, as well as being less prone to learned helplessness.
- However, this does not mean that the emotional life of the internal is always more positive than that of the external, as internals are known to be more guilt-prone than externals.
• Internals are less willing to take risks, to work on self-improvement and to better themselves through remedial work than externals.
• Internals derive greater benefits from social supports.
• Internals make better mental health recovery in the long-term adjustment to physical disability.
• Internals are more likely to prefer games based on skill, while externals prefer games based on chance or luck.

2.4.5 Unidirectional versus multidimensional characteristics of control

Rotter characterized locus of control as unidirectional construct. That is if a person has high internal control, then he or she by definition has low external control. The notion that locus of control is a unidirectional construct has been challenged. The multidimensional conceptualization differentiates between two types of external orientation – belief in the basic unordered and random nature of the world and belief in the basic order and predictability of the world. Coupled with the expectancy that powerful others are in control. In the latter case there is potential for control. It is quite conceivable that a person who believes in control by powerful others may also perceive enough regularity in the actions of such people as to believe that he or she can obtain reinforcement through purposeful action. Such a view of externality would be quite similar to Rotter’s conceptualization of internality. Furthermore a person who believes in chance control may be cognitively or behaviourally different from one who feels a lack of personal control.

Hannah Levenson (1973) offered an alternative model to that of Rotter’s unidimensional model. According to Levenson, there are three independent dimensions: Internality; Chance; and Powerful Others. This model says that one can
endorse each of these dimensions of locus of control independently and at the same time. It can otherwise be called as orthogonal (independent) dimensions. For Example: A person might simultaneously believe that both oneself and powerful others influence outcomes, but that chance does not. Levenson treated chance and powerful others as separate external dimensions because external belief in more powerful others may reflect an accurate appraisal of social or political situation and highlights that external beliefs are not necessarily dysfunctional. This means that external people not only believe that events are beyond their control, but they do so either in terms of chance or powerful others. Internal locus of control individuals are more likely to be achievement oriented because they see that their own behaviour can result in positive effects; and they are more likely to be high achievers as well, external locus of control people tend to be less independent and also are more likely to be depressed and stressed.

Weiner's early work in the 1970s, suggested that it should also consider differences between those who attribute to stable causes, and those who attribute to unstable causes. This meant that attributions could be to ability (an internal, stable cause), effort (an internal unstable cause), task difficulty (an external stable cause) or luck (an external, unstable cause). Such at least was how the early Weiner saw these four causes, although he has been challenged as to whether people do see luck, for example, as an external cause, whether ability is always perceived as stable and whether effort is always seen as changing.

Attribution theory also challenges locus of control as a unidimensional construct. Attribution theory posits there are three causal properties to explanation of success or failures: internal-external, stable-unstable, and controllable and
uncontrollable. In attribution theory locus and controllability are separate constructs because there are instances when an individual may attribute internal, but uncontrollable causes to events. For example a student who thinks his or her ability affects school grades (internal), and that that ability is innate (uncontrollable) will likely not change his or her behavior to affect future outcome. Innate ability is viewed as uncontrollable because a person cannot change genetics. Attribution theory highlights the importance of control. Although an internal locus is still preferred, it is important to understand locus in relation to the stable-unstable dimension, and the effect of this relationship on the perceived controllability of the outcomes. Individual who believe that they have control over aspects in their lives like academic achievement, physical illness, mental illness and skill development, are more motivated and persistent, achieve at higher levels, and more likely to achieve goals than individuals with an internal locus without control.

Explanatory style, or attributional style, goes a step further than attribution theory by adding a global-specific dimension with the internal – external and stable – unstable dimensions. The global specific dimension assesses whether an attribution affects all aspects of a person’s life (global) or is limited to certain situations (specific). An example of a specific attribution is the student, who attributes poor performance in math to math ability and has little control over future outcomes in math, but she feels he or she has control over future outcomes in other subjects. An example of global attribution is the student who attributes poor performance in math to overall lack of academic ability. This student would not feel he or she has no control in math classes, but in other academic areas as well.
2.5 CONCLUSION

The theoretical overview presented in this study focused to the theoretical background of the psychological variables selected for the current investigation. The investigator tried to present different aspects of emotional competence, creative thinking and locus of control and views of chief contributors in corresponding field to explain these aspects. This theoretical background helped the investigator to understand more about the area of study and to get a proper direction to carry out the study.