Chapter 2

REVIEW OF RELATED LITERATURE

The related literature on the topic 'The role of playschools with regard to the behavioural profile, creativity, problem solving ability and social cognition of preschoolers' is reviewed under the following headings.

2.1 Play
   2.1.1 Definitions
   2.1.2 Values of play
   2.1.3 Gender and play
   2.1.4 Are today's children suffering from play deprivation?
   2.1.5 Need for play and playschools
   2.1.6 Playschools
   2.1.7 Evaluation of literature and position of the present study

2.2 Behavioural profile or Temperament
   2.2.1 Definitions
   2.2.2 Dimensions/ aspects of temperament
   2.2.3 The models of temperament
   2.2.4 Theories of temperament
   2.2.5 Internal structure of temperament
   2.2.6 Individual differences in children
   2.2.7 Behavioural profile or temperamental characteristics as predictors of behaviour
   2.2.8 Stability of temperament
2.2.9 Behavioural profile / temperament during preschool years and its stability
2.2.10 Factors affecting behavioural profile
2.2.11 Evaluation of literature and position of the present study

2.3 Creativity
2.3.1 Definitions
2.3.2 Models of creativity
2.3.3 Theories of creativity
2.3.4 Aspects of creativity
2.3.5 Creativity of preschoolers
2.3.6 Factors enhancing creativity
2.3.7 Factors interfering with creativity
2.3.8 Creativity and play
2.3.9 Evaluation of literature and position of the present study

2.4 Problem solving
2.4.1 Definitions
2.4.2 Problem solving process
2.4.3 The components of problem
2.4.4 Stages of problem solving
2.4.5 Problem solving strategies
2.4.6 Theories of problem solving
2.4.7 Factors affecting problem solving
2.4.8 Factors that interfere with problem solving
2.4.9 How to foster problem solving ability?
2.4.10 Problem solving ability of preschoolers
2.4.11 Play and problem solving
2.4.12 Evaluation of literature and position of the present study
2.5 Social cognition
   2.5.1 Definitions
   2.5.2 Development of social cognition
   2.5.3 The importance of social cognition
   2.5.4 Social and non-social cognition
   2.5.5 Models of social cognitive development
   2.5.6 How social information is processed?
   2.5.7 Basic aspects of social thought
   2.5.8 Aspects of social cognition
   2.5.9 Young child’s theory of mind
   2.5.10 Social cognition of preschoolers
   2.5.11 Factors influencing the development of social concept
   2.5.12 Play and social cognition
   2.5.13 Evaluation of literature and position of the present study

2.6 Preschoolers
   2.6.1 Definitions
   2.6.2 Importance of preschool years
   2.6.3 Causes of difference between children in different child care environments
   2.6.4 Evaluation of literature and position of the present study
2.1 Play

2.1.1 Definitions

The term play is derived from Anglo-Saxon word ‘plega’ meaning to guarantee, stand up for, or take a risk for something and to risk danger or devote oneself to a single purpose.

According to Smart and Smart (1972) play is the child’s chief mode of interaction and development.

Reyner (1976) defines play as the first work any of us do.

Garvey (1977) states that play is something that (1) is engaged in simply for pleasure (2) has no purpose other than itself (3) players choose to do (4) requires players to be actively engaged in it and (5) is related to other areas of life, that is it filters social development and enhances creativity.

Leech (1977) defines play as anything, which stimulates children to use body and senses and to develop thinking and intelligence.

As per Dasajah (1982) play is the free activity of the child and allows free expression of individuality.

To Kaul (1984) play is a natural occupation of childhood and an instrument for learning.

According to Aggarwal (1987) play is the natural expression of a child’s life.
Helms and Turner (1992) have defined play as the spontaneous behaviour patterns that emerge in an unstructured activity solely for the pleasure that it offers.

2.1.2 Values of play

Modern psychology has accepted the fact that, play is the starting point for cognitive development in the infant child as viewed by Isaac (1930) and Crow and Crow (1954). When preschool children play with all sorts of objects they discover a lot of properties about these objects. Much of what they come into contact with leads them through the process of internalisation of experiences to develop concepts and lays the foundation for later higher level of thinking.

Active play serves as an outlet for surplus energy, which if pent-up makes the child tense, irritable and nervous (Crow and Crow 1954).

Play is the essential part of early childhood. Psychoanalytical theory denotes that spontaneous play is related to the development of intellectual competence as noted by Freud (1964).

Froebel (1974) recognized the importance of play in learning. Play is a way the child learns what none can teach him. As the child manipulates, vocalizes, walks, runs, skips and jumps, he is strengthening his muscles and improving motor co-ordination.

Children unfold their uniqueness in play and it is in the area of play that Froebel (1974) makes one of the greatest contributions to the curriculum of preschool. Play is the purest, most spiritual activity of mankind.
Vygotsky (1976) points out that play is the leading source of development in the preschool years. Repetition is an important aspect of play; through repetition the child can consolidate skills and can become an expert. Play serves as a means to help the child solve a problem. Pretend play provides support to Vygotsky’s (1976) idea that play creates a zone of proximal development and it can influence children’s ability to reason deductively. Socio-emotional development is fostered by play activities.

In the opinion of Bridges (1980) in play the child comes in contact with others. Play must be viewed therefore in the light of its total contribution to the growth and development of children.

Millichamp (1983) has pointed out that play helps the child’s development, which cannot be fruitfully made through other channels.

Another aspect of socio-emotional development which play contributes significantly is in the development of behavioural controls (Kaul 1984).

Reproductive play, which may be specified as dramatic or socio-dramatic play is of major significance in this context in the view of Singh (1984).

Play satisfies many needs in a child’s life - the need to be stimulated and diverted, to express natural exuberance, to experience change for its own sake, to satisfy curiosity, to explore and to experiment within risk-free conditions as remarked by Craig (1989).
The developmental benefits of play include cognitive development, increased imagination, creativity, increased discovering and reasoning, manipulative skills and improved problem solving skills (Malley 1991).

Creativity and inventiveness in child’s play are associated with facility in divergent thinking as pointed out by Watson (1993).

Language too serves several functions during play. Besides dramatic play, other forms of play like puppet play, word games, riddles, all promote the development of language, imagination, aesthetic development and attitude development in the opinion of Nakra (2000, September).

2.1.3 Gender and play

Gallahue (1982) states that play provides an avenue through which children gradually learn differences between yours and mine and play requires equipment often labelled as ‘toys’ or ‘play things’.

Gender influences the type of play activities the child will engage in. Girls are more sedentary in play. Boys involve themselves in more active, strenuous and vigourous games. Toys given for preschool boys serve for gross motor and functional activities and that for girls tend to elicit familial role enactment based on the result of a study conducted in Kochi by Panikulam (1986).

Bhatia (1996) viewed age as one important factor influencing play. According to the age, needs, interests, skills and abilities of young children, play pattern changes.
Babies and young children make little distinction between boys' and girls' toys and children of both sexes play in much the same way as per Hurlock (1998).

2.1.4 Are today's children suffering from play deprivation?

The crucial contribution of play activities to the global development of the child has been established. Yet play has rarely found a place in the plans adults formulate for the welfare of children (NIPCCD newsletter, 1988).

2.1.5 Need for play and playschools

According to Leavitt (1958) young children are capable of great industry, concentration and deep absorption when the environment and play material cater to their learning impulses.

Urban life influences the life of preschoolers to a large extent. The flat system in the cities confines the children within the four walls and offers little chance to have companionship and peer group as observed by Nakhooda (1966).

Congested areas in urban setting bring about direct and indirect mental and emotional tension and insecurity feelings as stated by Kalra (1972) and Bushan and Sachdeva (1990).

Blocks of flats where people live on different levels have replaced the close one level community of old cities; so people cannot make easy contacts. Hence as children go through the important four years before full-time school starts at the age of five, they may be
deprived of essential social activity with children of their age. Conscious effort has to be made to provide it to them and this means either playgroup or nursery school as per Reyner (1973).

The results of a study conducted by Fowler and Khan (1974) and Howes (1990) on children who were in home and centre environments showed that the latter group were more task-oriented, goal-directed, showed more leadership, persistence and adjusted better in a formal school setting.

Children attending early childhood programmes are self-confident, self-assured, self-sufficient, more outgoing, independent of parents and teachers, less timid and fearful as remarked by Moore (1975); better citizens with good character (Shamsuddin 1971); more verbally expressive (Fowler and Khan 1974); more knowledgeable about the social world and more competent to manage on their own (Cochran 1977); better adjusted in school, more task-oriented, more goal directed (Milan 1990).

Parents and teachers have always believed that play is good for children and that time and facilities should be provided for it. Educationists favour structuring, extending and utilizing play for the purpose of developing concepts. Thus during block play, children may be encouraged to tell the difference between the size of blocks and after play to put them according to the size in the appropriately marked shelves. Doll play can be used to teach body parts, care of the body and similarity and difference between people in the opinion of Morrison (1982).

Morrison (1982) has also stated the point that the proponents of learning through spontaneous informal activities maintain that learning
is best when it has a foundation in events that occur in an environment, which contains materials, and people with whom the child can interact. Learning here is informal, unstructured and unpressurized. The play and learning episodes are generally determined by the interest of the child and to a certain extent that of the teacher, based on what she thinks best for children.

In programmes, which pursue an informal approach to learning, based upon play, the expected learning outcomes are socialization, emotional development, self-control and tolerance for a setting, which resembles school. This group of behaviours is generally labelled pro-social behaviour, indicating behaviour, which is necessary for getting along with one another and future school success (Morrison 1982).

One fundamental weakness of this play-oriented approach is the lack of planning that may occur in some programmes. Learning and teaching may be based more on what children like to do than on any planned programme of what children ought to learn or what would be best for them at this time of their development (Morrison 1982).

There is scarcity of playgrounds as per the report of a study done by NIPCCD newsletter (1988). Research shows that playgrounds are essential not only for physical strength but also help to develop emotional, social and cognitive strengths as well (Malley 1991).

Malley (1991) has also stated that there are two factors in the development of a child - unstructured and structured learning and that most of the child’s development is from unstructured activities which most of us do not comprehend.
Before the age of six children’s play experiences have the biggest impact on how they learn about things that concern them in their daily lives in the opinion of Syvenky (1996). So play programmes are essential right from a very young stage for preschoolers.

Group games can be justified as educational in terms of their value for socio-moral and intellectual development (Vries and Kohlberg 1998).

A child who has not gone to any type of school before nursery class might have a hard time adjusting himself/herself to the classroom. It is important to give a child social experience by enrolling him/her in tots programme. The children who have attended some school will have learned certain skills needed for success in kindergarten, example - how to keep away from mom and go to school environment, how to follow school routine, how to get along with other children, how to sit and listen in a group and how to follow the teacher’s instruction in the words of Wollman (2000).

Wollman (2000) has also pointed out the need for tots programme as a means to help develop the child’s early learning skills and to broaden the social experience and that, a playgroup for children would be fun. But after the age of three years it will be good to have playmates.

2.1.6 Playschools

Playschools are childcare centres and they plan programmes to meet the child’s social, emotional, intellectual as well as physical needs. The day nursery serves the function of substituting for maternal care of
the child for a major part of the day. The school serves to supplement the experiences of the children and through play, the child digests the information he/she receives, as highlighted by Read (1973).

Playschool programmes are usually organized under the sponsorship of the church or some other organized group, as a part of recreational programme, in the words of Morrison (1982).

Playschools have expanded their facilities to incorporate activities formerly considered as those provided by nursery schools or kindergarten; closely related to this is a play programme called Drop in nursery in the U.S.A as stated by Leeper, Witherspoon, Day (1984).

A playgroup does not try to teach a child traditional subjects such as reading, writing and arithmetic, but it aims at learning through play, providing the stimulation and situation required for good intellectual, physical, social and creative development and that both parent and child benefit from a few hours of separation; as parents may have more patience and energy to give their children because of this brief separation as observed by Reynols (1987).

Reynols (1987) has also denoted that playschools help in the development of physical, creative, imaginative and intellectual skills through manipulation of toys in the preschool period, which is the time of the beginning of co-operative or group plays and when children play together they become ready to share their possessions and become compassionate. They develop into friendly, sociable persons ready to socialize with other children of their age.
Children who attend day-care or play programmes spend most of their time in plays promoting social contacts as mentioned by Frank (1987).

According to Noyes (1995) the objective of playschool is to develop a positive self-image, accept the children, their ideas, fairness, encourage sharing habits, stimulate interest. Children are to be exposed to art, music, people and common experience. Special activities that can be included are a trip to a farm, attending shows for children and safety demonstration.

2.1.7 Evaluation of literature and position of the present study

Smart and Smart (1972), Reyner (1976), Garvey (1977), Leech (1977), Kaul (1984), Aggarwal (1987) and Helms and Turner (1992) have defined play in different ways. Crow and Crow (1954) have given importance to the development of physical and cognitive aspects during play, Freud (1964) the cognitive aspects of play and Froebel (1974) the uniqueness of play in child development. Vygotsky (1976) has stated that play is a leading source of the development of socio-emotional and problem solving skills. Total contribution of play to the development of the child is highlighted by Bridges (1980), Craig (1989) and Malley (1991). Singh (1984) and Kaul (1984) have given importance to the socio-emotional development and reproductive play respectively. Watson (1993) has pointed out the importance of play on divergent thinking. Nakra (2000, September) has stressed the relationship between play and language development.

have pointed out the need and facilities for play or playschools in the present environmental conditions. Fowler and Khan (1974), Moore (1975), Cochran (1977), Morrison (1982), Milan (1990), Syvenky (1996) and Wollman (2000) have all given the importance and benefits of sending children to some early childhood programmes, which are play-oriented.


Even though researchers have stressed the importance of play, need for play and of playschools in the modern society there are no studies comparing the development of children who have attended and those who have not attended playschools. Research studies pertaining to this field are almost nil in the Indian context, so the investigator felt the need to carry out such a study in the present social context.

2.2 Behavioural Profile or Temperament

From the moment of birth, infants demonstrate their uniqueness and their variability. Parents with more than one child are quite aware of the differences in their children's personalities although all the children are brought up more or less in the same way. These differences can be noted even before birth. One foetus may kick actively while another may move cautiously or gently (Fontana 1986).
2.2.1 Definitions

The Latin word temperare means ‘to regulate’, ‘to restrain one’s self’ or to soften’. Different theorists and researchers define the concept of temperament in a variety of ways.

Thomas et al (1963), (1977) define temperament as the characteristic tempo, energy expenditure, mood and rhythmicity typifying the behaviour of the individual infant.

Temperament according to Gardner (1964) is the more or less characteristic, persistent emotional disposition of an individual probably having a constitutional basis.

Temperament refers to the inherited personality traits that appear early in life (Buss and Plomin 1975).

In the view of McConnell (1977) one’s temperament is the way one regulates oneself, that is, one’s characteristic attitude or behaviour pattern.

Lansdown (1984) defined temperament as the child’s persistent, prevailing mood, that which determines the characteristic adjustment to life.

According to Hetherington and Parke (1986) temperament is the biologically based difference among individuals in reaction to stimuli, in the expression of emotions, in arousal and in self-regulation.

Temperament may be considered as a subset of personality (Rutter 1988) or specific traits of personality (Buss 1989).

A child’s’ general style of responding is called temperament as noted by Atkinson et al (1987).
In the words of Hall and Lindzey (1994) temperament is that disposition that is closely linked to biological or physiological determinants and that consequently show relatively little modification with development.

According to Hurlock (1998) temperament is that aspect of personality, which is revealed in the tendency to experience moods or mood changes in characteristic ways.

2.2.2 Dimensions/Aspects of temperament

Some of the earlier observations of temperament or behavioural profile in children were made by Fries (Fries and Lewi 1938, Fries 1944, Fries and Wolf 1953). Studying infants from birth to ten days of age under controlled conditions, she differentiated three activity types of infants, in terms of the amount of activity, differences in characteristic muscle tones and crying within the normal range. She labelled three types - the active, the moderately active and the quiet. Extremes beyond either end of the normal range were considered pathological.

A contemporary approach to the question of individual differences is found in the series of papers of various combinations of Thomas, Chess and Birch. (Thomas and Chess 1957, Chess, Thomas and Birch 1959, Thomas, Chess and Robins 1961, Thomas Chess and Hertzig 1962, Thomas, Chess and Birch 1972). These authors were involved in longitudinal study of 110 middle class children who had been followed systematically from the age of two or three months with interview and observations. They were able to identify nine categories of reactivity which persist through the first two years of life as activity level,
rhythmicity of functioning, adaptability, approach withdrawal, vigour of reaction, threshold of responsiveness, quality of mood, distractibility and attention span and persistence (Thomas and Chess 1972, 1977). Based on this Thomas and Chess (1977) have devised a 'Parent Questionnaire' to measure the temperament of children.

Certain combinations of the temperamental traits identified by Thomas et al (1977) produced three distinctive personalities.

Forty percent of the children studied could be described as 'easy' children. They are happy most of the time, adjust early to new situations and sleep, eat and eliminate on a fairly predictable schedule.

About ten percent are difficult. They cry easily, are irregular in body functions and take a long time to adjust to a new routine.

Fifteen percent are slow-to-warm-up, mild in responses, with a need to take their time adjusting to new experience and people. Since not all children fit neatly into these categories, these percentages do not add up to 100%.

Birch et al (1962) also reported similar results while conducting their longitudinal study that primary reaction characteristics like activity level, rhythmicity, approach withdrawal, vigour of reaction, adaptability, and quality of mood being stable for the first two years of life.

Cattell (1966) has formulated a sixteen-personality factor questionnaire. For a high scorer the factors are outgoing, more intelligent, stable, assertive, happy-go-lucky, conscientious, bold, tender-minded, suspicious, imaginative, shrewd, apprehensive, experimenting, self-
sufficient, controlled and tense as contrasted with reserved, less intelligent, emotional, humble, sober, expedient, shy, tough minded, trusting, practical, forthright, placid, traditional, group tied, casual and relaxed factors of a low scorer.

Schmidt (1966) studied 125 infants with ratings on 31 characteristics and evaluation on sensori-motor and bodily movements. Factor analysis revealed the following compositions.

1. **primary factors** - lively activity, tension versus relaxation, excitability and social orientation and
2. **secondary factors** - extroversion and emotional liability.

Gerson (1969) studied 57 middle class infants at 1, 3 and 6 months of age using ratings and scaled tests. Factor analysis resulted in extraction of two factors - alertness and adjustment.

Kagan (1971) identified five behaviour patterns that differentiate infants during the first six months. They are vigour of activity, irritability, stimulus satisfiability, threshold of attention change and social responsivity.

Gerside, Birch and Scott *et al* (1975) in an attempt to define dimensions of temperament of infant school children identified four components. They are

1. withdrawal, poor adaptation, dependence etc.
2. high activity, intensity, distractibility etc.
3. moodiness, sickness and
4. irregularity.
Buss and Plomin (1975) have given four dimensions of temperament—activity, emotionality, sociability and impulsivity. The extremes of the dimension according to them are active-lethargic, emotional-impassive, gregarious-detached, impulsive-deliberate.

The grouping of the nine categories of Thomas and Chess (1971) into two subdivisions as 'Reaction pattern' and 'Intensity of reaction' was done by Indulekha (1977). The category reaction pattern includes rhythmicity, adaptability, approach withdrawal, attention span and persistence, distractibility and quality of mood. Intensity of reaction includes activity level, threshold of responsiveness and vigour of reaction.

Mussen et al (1984) put forward three behaviour characteristics, which are obviously noticeable in infants. Those are motor activity, irritability and passivity.

2.2.3 The models of temperament

The first model of temperament is the one devised by Thomas and Chess (1977) it has nine dimensions.

The second model of temperament devised by Rothbart and Derryberry (1981) has fewer dimensions because it combines those of Thomas and Chess (1971) example distractibility, attention span and persistence merged into undisturbed persistence. It also includes characteristics not represented by Thomas and Chess that place special emphasis on emotional self-regulation, such as soothability and distress to limitations.
Table: 2.1 Models of temperament as given by Thomas and Chess (1971) and Rothbart and Derryberry (1981)

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<td>Frequency of expression of happiness and pleasure</td>
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<td>Rhythmicity</td>
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<td>Approach withdrawal</td>
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2.2.4 Theories of temperament

2.2.4.1 Psychoanalytic theory of Freud

According to Freud (1924) personality consists of three major systems - the id, the ego and the superego. Id is the original personality system out of which the ego and the superego develop. It is unconscious and operates by pleasure principle and always tries to get pleasure and to avoid pain. The ego enables the organism to deal with reality and can be called the executive of personality. The superego seeks perfection. Freud believes that these potent inner forces determine human behaviour.

2.2.4.2 Buss and Plomin's theory (1975)

They postulated four dimensions of temperament - emotionality, activity, sociability and impulsivity. To them these dimensions are heritable, stable, adaptable and predictive of adult's personality. This theory is interactive in three ways (1) the child elicits certain types of parental behaviours as a function of his or her temperament, (2) the impact of such parental behaviours varies as a function of children's temperament and (3) the efficiency of modelling of parental behaviour is a function of temperamental similarity between the parent and the child.

2.2.4.3 Thomas and Chess' theory (1977)

This theory defines temperament as the behavioural style - how of the behaviour. They emphasised the interactive processes both between infant temperament and parental care giving style and between temperament motives and abilities within the individual for later
development and mental health. They find the 'goodness of fit' between
the individual and the environment as the central feature of the interaction.
They also pointed out that the same trait might be manifested through
different behaviours during developmental periods. They identified nine
dimensions of temperament - activity level, rhythmicity, approach
withdrawal, adaptability, threshold of responsiveness, quality of mood,
vigour of reaction, distractibility and attention span and persistence. Based
on these temperamental traits they categorised the children into three
groups having easy, difficult and slow-to-warm-up personality.

2.2.4.4 Rothbart and Derryberrys' theory (1982)

They proposed a multilevel theory of temperament. The key
concepts of this theory are the reactivity of the nervous system and the
self-regulation of the reactivity. They specified somatic, endocrine and
autonomic response systems through which reactivity and self-regulation
are expressed. They postulate a connection between temperament and
affect. They believe that the child’s biological make up is influenced by
heredity, maturation and experience. The child’s reaction to the changes
in the environment is reflected in the somatic, endocrine and automatic
nervous system. They identified five dimensions of temperament-activity
level, smiling and laughter, fear, distress to limitations and soothability.

2.2.5 Internal structure of temperament

Various studies suggest that temperament may be relevant to
mild behavioural disorders (Thomas and Chess 1977); early educational
adjustment Keogh (1982) negative reaction to the birth of a sibling,
aggressiveness; helping behaviour; impulsive accidents (Huttenem and
Nyman 1982) and a variety of clinical conditions (Carey 1985). Temperamental differences lead to different modes of experiencing the environment, which in turn foster different patterns of advances and delays in attaining cognitive skills. Highly intense behaviour patterns make the child hyperactive and it leads to attention deficit disorders as noted by Hetherington and Parke (1986).

2.2.6 Individual differences in children

There are quite individual differences in placidity and irritability, activity level and tolerance or non-tolerance of discomfort and stress as per Ausbel (1958).

Many parents remark on the fact that they see identifiable differences between their children in behaviour as early as the first few weeks of life. One child may be a happy, contented baby while another enjoying the same kind of parental care and in apparently equal physical health may be inclined to be demanding and awkward (Fontana 1986).

Eisenberg et al (1966) have found differences in the rate of habituation. Korner et al (1968) found differences in the stage and rate of sucking. Right from birth differences in temperament are apparent in infant’s reaction to sensory stimulation (Jackson and Jackson 1978). Growing evidence suggests that these differences are present very early in life - perhaps at birth as noted by Kagan and Soudman (1991).

As they grow older children acquire increasingly sophisticated abilities to read the emotions of others and to regulate their emotions. Differences in temperament are present. Very early in life, they are
influenced by biological factors as well as environmental factors as stated by Berk (1991).

2.2.7 Behavioural profile or temperamental characteristics as predictors of behaviour

A child’s temperament is an important element in the way other people especially parents will act towards him or her. It is easier to be warm and loving to a baby who is usually cheerful than it is with a baby who cries constantly, resists being cuddled and often seem impossible to please as observed by Thomas et al (1977).

Parents who get along best with difficult or slow-to-warm up children are the ones who have learned how to adapt their child rearing pattern to their children’s individual needs (Thomas et al 1977). When parents realise an infant’s behaviour is determined partly by the child’s temperament rather than wholly by what the parents do, they can work more effectively towards a positive outcome for the child. Also according to Thomas and Chess (1977) by responding to their difficult child calmly and in good humour parents can lower the risk of later behaviour problems.

A study by Segal and Yahres (1978) showed that when experimenters encourage children to ask their parents for help, the children act more dependently and their parents become bossier and restrictive and when the children are encouraged to be independent, parents are less likely to interfere.

Freedman (1979) has found systematic differences in the responses of newborns from different ethnic groups and since differences
are visible in newborns they cannot be the result of systematic shaping by parents.

Reid et al (1981) say that one of the major trends in recent research is exploration of the degree to which children affect their parents as well as the other way round.

Although genetically based temperamental predisposition in personality exists, the results of longitudinal studies indicate that the role of environmental factors cannot be ignored as remarked by Helms and Turner (1981).

As per Lerner and Rosnagel (1981) temperament is one of the few constructs available to explain how infants might contribute to their own socio-emotional development.

Bee (1985) states that temperament is an important ingredient in the system of factors influencing the child’s pattern of growth.

In a study of socialization of young children, the relationship between teachers’ ratings of child temperament and preschool behavioural adjustment was examined. High task orientation and low reactivity were found to be related to positive socialization towards teachers and classroom setting as noted by Caryl and Michael (1991).

A study done by Carson and Bittner (1993) found that children’s activity level was strongly associated with creative thinking.

A child’s behaviour can definitely be predicted by temperamental predispositions as viewed by Fontana (1986).
Temperament also predicts important variations in social behaviour. Highly active preschoolers are very sociable with peers, but they also become involved in more conflicts than their less active age mates as observed by Broberg, Lamb and Hwong (1990).

According to Dunn and Plomin (1990) social behaviour seems to be a direct result of temperament and active children are targets of negative interaction, which leads to conflict. Early high activity level and emotional reactivity predict aggressive adolescence.

Children’s unique temperamental styles are apparent in early infancy. Temperamental characteristics are good predictors of a variety of cognitive outcomes and social behaviour as per Berk (1991).

2.2.8 Stability of temperament

Findings of many studies provide support for the long-term stability of temperament. According to Thomas, Chess and Birch (1977) the original characteristics of temperament tend to persist in most children over the years.

Escalona et al (1971) found that differences in the motor activity of an infant, particularly in characteristic level of activity, was a trait of stability.

According to Boss, Block and Block (1980) there is stability in activity level in infants measured from birth. There is also stability of irritability measured from birth (Worobey and Lewis 1988).

Some of the personality traits change under social impacts as noted by Chaube (1992).
2.2.9 Temperament/behavioural profile during preschool years

Children differ in their temperament. One cries a lot and another very little. Some children are whiny and difficult and others are more easygoing and adaptable as per Hetherington and Parke (1986). Children show individual differences in the activity level, responsiveness to environment and irritability as denoted by Atkinson et al (1987). Some children seem to smile and laugh almost all the time while another reverses the pattern in the views of Papalia and Olds (1987) and some children are more placid while others are active.

2.2.10 Factors affecting behavioural profile

A child’s personality is the result of both hereditary and environmental components and for healthy development of personality harmony of the two influences-individual characteristics and environment of infants is needed (Thomas et al 1971).

Travers (1974) says that it is necessary to emphasize the interaction of both because of the temptation to focus only on the child’s experience in analysing the development of his/her personality.

2.2.10.1 Influence of environment

Anderson (1948) has reported that if children are to be well adjusted, adults must create and maintain a good environment for children.

According to Olson (1959) an important association exists between the behaviour of the child and the general qualities of his early
experiences. The child's behaviour can be influenced by the kind of home and other surroundings in which he grows up (Veiner 1972).

According to McCandless and Evan (1973) young children until about the age of 18 months need extensive social relations with caregiving adults.

Infants in advantaged environments scored more on positive reaction for reaction pattern and infants in advantaged group had very low threshold of responsiveness indicating more intense behaviour patterns as per a study conducted by Indulekha (1977).

A study done by Mathew (1992) revealed that preschoolers who were in playschool were having better temperamental traits when compared with their counterparts who were at home.

Varghese (1994) in her study on interrelationship between the infant's behavioural profile and their caregiver's behaviour patterns has noted the influence of environmental factors on temperament.

Temperamental characteristics are the abstractions made by aggregating behaviour over time and situation (Rutter 1988) and that the environment may interact in a consonant (positive) or dissonant (negative) manner with temperament to produce optimal or maladaptive functioning and that interaction is termed "goodness of fit" as remarked by (Thomas and Chess 1977). The goodness of fit argument as per Rutter (1988) also suggests that parent-child influence is reciprocal.
2.2.10.2 Effect of age

Birch, Thomas, Chess and Hertzig (1962) found while conducting their longitudinal study that the primary reaction characteristics that is activity level, rhythmicity, approach withdrawal, adaptability, intensity of reaction, threshold of responsiveness and quality of mood are stable for the first two years.

Thomas, Chess, Birch (1968) observed the modes of behaviour including general activity level and adaptability to the new situation as consistent for particular children across the first 5 years of life.

The result of a study done by Indulekha (1977) indicated that for reaction pattern as the age increased the scores, decreased showing more of negative responses for older infants and for intensity of reaction, increase in scores was observed for older age groups.

2.2.10.3 Sex and class difference

Kerlinger (1964) found that during neonatal period male infants exhibited spontaneous startle, sudden convulsive movements whereas female infants tend to be finer and more restricted.

Moss (1967), found that male infants slept less and cried more than female infants. Moss (1968) obtained differential activity level for male and female infants and Korner (1969) found that male babies were more vigourous in their activities in neonatal period. This finding of Korner is supported by Bhutt (1972) who has concluded that some part of the brain is characteristically different for male and female babies.
Kagan and Tulkin (1971) conducted a lab test on middle class infants and low class infants and found that the former were superior to low class infants in differentiating between mother’s and stranger’s voice.

There are seemingly temperamental differences between the sexes, with boys tending to be more active, initiating and aggressive than girls (Maccoby and Jacklin 1974).

Gender difference was observed by Indulekha (1977) in the area of intensity of reaction, where male infants were more active, more energetic and had a lower threshold of responsiveness.


Activity level is related to gender; boys tend to have a higher motor activity level than girls as noted by Buss (1989).

2.2.10.4 Family influence

Family has a powerful influence on the life of the child because it represents both heredity and environment. Learner and Murphy (1951) are of the opinion that the various experiences and mental attitudes of the personalities of the parents directly affect the child’s personality. The home and members of the family group are the most important factors of influence on the child’s personality development as mentioned by Crow and Crow (1954).
According to Whitehurst (1977) there is every reason to expect that early child induced differences in parental responsiveness have a cumulative effect.

A child's group membership and his relationship with his parents are central in shaping his personality and behaviour as stated by Mussen et al (1984).

2.2.11 Effects of temperament on adjustment

About one third of the New York Longitudinal Study subjects developed behaviour problems at the same time. No temperamental type was immune to problems. Even easy children had them when their lives held too many stresses. If a highly active child is confined to a small apartment and expected to sit still for long periods, if a slow-to-warm-up child is pushed to adjust to many new people and situation or if a persistent child is constantly taken away from absorbing projects, trouble may result. The key to healthy adjustment is "goodness of fit" between children and demands made upon them as noted by Papalia and Olds (1994).

Recognition of inborn temperament relieves parents of some heavy emotional baggage. They can focus on helping the child use his or her temperament as strength rather than seeing it as an impediment. (Hetherington and Parke 1996).

2.2.12 Impact of play on behaviour profile/temperament

Bernhardt (1967) points out that play is instrumental in developing certain social standards.
According to Frank and Theresa (1973) by acting out the happenings of life, frustrations are often thrown out into the open and even unpleasant experiences can be reduced to controllable size.

According to Pringle (1975) play provides not only an outlet for feelings but also a means of coping with them.

Travers (1979) points out that play permits children to cope with intense emotional reactions.

As per Gallahue (1982) play helps to meet children’s emotional needs, to belong and to have a feeling of personal worth.

Goosenghe (1984) states that play creates an atmosphere of mutual understanding and aids in the development of correct attitude to playmates.

Helms and Turner (1986) indicated that companionship teaches the child how to make adjustments, compete with peers and respect the rights of others.

Salk (1988) has remarked that through play children learn to master frustration, discover the satisfaction of success and achievements and lays the foundation for future learning.

2.2.13 Evaluation of literature and position of the present study

given by Fries et al (1938), (1953), Thomas et al (1971), Birch et al (1962), Cattell (1966), Schmidt (1966), Kagan (1971), Buss and Plomin (1975) and the categorisation of these dimensions based on Induleka (1977) is also discussed. A comparison of the models of temperament given by Thomas and Chess (1977) and Rothbart and Derryberry (1981) is presented.

Theories of temperament given in the review include psychoanalytic theory (1924), Buss and Plomin's (1975) theory, Thomas and Chess' (1977) theory, and Rothbart and Derryberry's (1982), theory.


From the review it was evident that very few studies have been conducted in Indian context regarding the behavioural profile of infants. A study done by Mathew (1992) has compared the behavioural profile of preschoolers who were in playschool and who were at home. But there are no other Indian studies to the investigator’s knowledge trying to find out the influence of playschool, the concept of which has gained momentum. Hence an attempt has been made here to study the behavioural profile of preschoolers who had attended and those who had not attended playschool.

2.3 Creativity

2.3.1 Definitions

Bruner (1962) found newness, surprise and originality in creativity.

Creativity is presumably intended to mean original or something like that but is preferred because it is vague and less usual, as noted by Fowler (1965).

Torrance (1966) has described creativity as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on; identifying the difficulty, searching for
solutions, making guesses or formulating hypotheses about the deficiencies, testing and retesting these hypotheses and possibly modifying them and finally communicating the results.

One way of defining creativity is to apply the four criteria of novelty, appropriateness, transcendence of constraints and coalescence of meaning (Jackson and Mussick 1968).

According to Guilford (1969) creativity involves divergent thinking with respect to the traits of fluency, flexibility and originality of the thought process.

Papalia and Olds (1979) have defined creativity as the ability to see things in a new and unusual light, to see problems that no one else may even realise, as existing and then come up with a new, unusual and effective solution to these problems.

Keating (1980) expands the definition of creativity to include, along with divergent thinking, content knowledge, the ability to communicate and the ability to critically analyse.

According to Fontana (1981) creativity is a kind of thinking that involves originality and fluency that breaks away from existing patterns and introduces something new.

Creativity is a collection of attitudes and abilities that lead a person to produce creative thoughts, ideas or images as stated by Fisher (1982).
When a child generates a novel but appropriate solution to a problem, the child and the idea are called creative (Mussen, Conger et al 1984).

Creativity is best defined as a unique mental process that operates on a body of knowledge in a way to develop a novel end product. Divergent thinking is a central component of creativity as noted by Helms and Turner (1986).

Wallace and Kogan (1986) discusses creativity as involving thinking, intuition, feeling and sensing.

Fogel (1988) has defined creativity as a flow of experience that takes on a broader meaning than simply insight or resourcefulness.

Creativity is considered to consist of four basic abilities fluency, flexibility, originality and elaboration as per Fisher (1990).

Fryer and Collings (1991) investigated the teacher's views about creativity and its development with a sample of 1028 teachers and education lectures from England, Wales and Ireland. The study revealed that creativity was perceived mainly in terms of imagination, originality and self-expression. Only half of the samples regarded divergence as synonymous with creativity. Most of them thought that creativity could be developed, but almost three fourth thought it was a rare gift.

Creativity can be defined as the cognitive activity that results in a new or novel way of viewing or solving problem (Solso 1991).
Santrock (1994) defines creativity as the ability to think about something in novel and unusual ways and to come up with unique solutions to the problem.

Fontana (1981) and Santrock (1994) have incorporated the conceptualisation of Guilford considering creativity as a thinking ability that brings about novel and unusual solutions to problems.

2.3.2 The creative process

Psychologists have concluded that the creative process consists of several specific activities that occur in a series.

Guilford (1967) devised a model of how humans think, called the structure of intellect. Guilford tried to identify (1) the process or thinking operations carried out (2) the content to which the operations apply and (3) the products that result.

Guilford distinguished between convergent and divergent thinking. Divergent thinking involves the ability to produce many novel associations to stimulation. It is scored in terms of a number of responses (fluency), number of categories (flexibility) and uniqueness of responses (unusualness). Tests of creativity have been devised based on Guilford’s theory. The best known of these, the Torrance test of creative thinking, incorporates different tasks to assess divergent thinking.

Divergent thinking refers to the generation of multiple and unusual possibilities when faced with a task/problem. In both verbal and figural tests divergent thinking exists. A verbal measure might ask children to name as many uses for common objects (such as a ball). A
figured measure asks them to come up with many drawings based on a motif provided to them (Torrance 1980).

According to Fontana (1981), the creative act typically involves four stages. They are ‘preparation’ which is primarily concerned with the recognition that a particular problem is worth studying; ‘incubation’ during which the problem of theme is mulled over, often at an unconscious level; ‘inspiration’ when the possible solution to the problem or a flood of ideas for the problem come up abruptly into the conscious mind and ‘verification’, the last stage, when the solution is put to the test or ideas are tried out on a paper or a canvas.

Perkin (1984), based on his research and analysis of literature, has presented the “snow flake” model of creativity. Like the six sides of a snowflake, each with its own complex structure Perkin’s model consists of six characteristics common to highly creative individuals. They are (1) commitment to personal aesthetics (2) excellence in finding problems (3) mental mobility (4) willingness to take risks (5) objectivity and (6) inner motivation. Children and adults who are creative may not have all the six characteristics but the more of these they have, the more creative they are.

A theoretical perspective to creativity in everyday life is given by Csikzentmihal and Larsen (1984). Creativity arises in everyday tasks as cooking, doing schoolwork and solving difficult interpersonal problems with friends and within the family. According to them creative people have profound involvement with their activity, which combines a loss of self-consciousness with deep concentration. The experience is subjective, pleasing and at the same time, requires highly complex use of mental/physical skill.

-57-
Fisher (1990) has identified five stages in the working of the creative process. They are stimulus, exploration, planning, activity and review. Regarding the first stage, stimulus, he says that initial stimulus may be prompted by awareness that there is a problem to be solved. This can be a challenge offered by a parent or a teacher. In the second stage, exploration, children can be helped to move beyond their first ideas and to consider alternatives before making a decision. The third stage, planning, involves defining the problem or task and gathering of information data. The fourth stage, activity, refers to doing something with one’s own idea. The last stage, review, means evaluation of the idea that has been realised or a problem that is solved.

According to Fisher (1990) very young children can be trained to use their judgement and imagination to evaluate their idea. This is where creative process becomes subject to critical thinking.

To sum up the literature on creative process, Fontana (1981) and Fisher (1990) suggest that creative thinking does not occur spontaneously, but the child requires an intentional and sustained effort and it involves several stages.

Psychologists have concluded that the creative process consists of several specific activities that occur in a series. According to Baron (1996) they are (1) creativity involves considerable preparation; a person who develops a creative solution to an important problem generally spends a long period of time immersed in the problem; (2) creative solution often emerges only after a period of incubation-an interval during which the person involved stops working actively on the problem and turns on to other matters and (3) creativity does often involve a sudden illumination or insight.
2.3.3 Creativity in preschoolers

Childhood years are the root years in creativity in the opinion of Mukherjee (1965). Divergent thinking is more in preschool children compared with the other age groups as observed by Guilford (1967). Children's creativity essentially refers to the performance on tests of divergent thinking (Ross 1973).

All young children are creative and that the school situation destroys creativity, as noticed by Torrance (1962).

As noted by Thomas and Berk (1981) the school situation gives more importance to goal directed behaviour/convergent thinking and the children's ability to think on a divergent view point is lost, as the answer centred approach in school tests makes pupils cautious above expressing unusual ideas; but preschool children spend a major part of their time in play activities and their thinking is more flexible and divergent.

Preschool children are in a less pressurised environment and they are not forced to think on a specific line and this enables them to give their views and opinions truly in the view of Morrison (1982).

Scores on divergent thinking will be high in preschoolers as they are given freedom and choice in learning (Baron 1996).

2.3.4 Factors influencing creativity

2.3.4.1 Factors enhancing creativity

Some writers consider a child's social experience as the springboard from which creativity develops. The family background of
parents, their social position, vocational independence, all seem to correlate positively with the child's creativity as mentioned by Oden (1968).

The influences and experiences in childhood are responsible for the eminence in life of creative personalities as per Mehta (1989).

Shainess (1989) discusses the possible roots of creativity and listed the following factors which seem to be important for a creative child: (1) good biological endowment, (2) fostering of interest by parent or interested adult, (3) feelings of being valued and loved, (4) allowance of freedom of development, (5) good toleration of isolation and loneliness, (6) the ability to perceive similarities in apparently dissimilar situations and (7) capacity for love and spirituality.

Fisher (1990) observes that psychological freedom fosters creativity by permitting children's freedom of expression.

Isen and Baron (1991) have listed the following steps to foster creativity:

(1) **Develop a rich and broad knowledge base:** Creative solutions do not emerge from thin air. They stem from the integration or combination of knowledge that is at the disposal of problem solvers.

(2) **Foster independence:** Creative people are willing to take risks and strike out on their own. It is important that society tolerates such independence and encourages its development.

(3) **Encourage the use of analogies:** Many creative breakthroughs seem to involve the use of analogies - recognition of similarities between a new
problem and an old one or between a new potential solution and the one that has worked before.

(4) Encourage curiosity: Creative people have a high level of curiosity, which is a key ingredient of creativity. They are interested in many different topics; they read widely and they actually seek new experiences.

(5) Enhance positive effect: The last technique for encouraging creativity is in some ways the most unexpected, but it is based on a growing body of empirical research (Isen 1987). Several studies by Isen (1987) indicate that when people are in a positive mood they are more creative than when they are in a negative mood.

Chauhan (1996) has given his views on how to foster creativity (1) creativity needs to be identified, energised and guided. (2) creativity is likely to flourish in an environment which values independent and free thinking. Adequate opportunities should be provided for the child to express his/her ideas. (3) Brainstorming which helps divergent thinking is a useful strategy for generating ideas with children of all ages. It is very useful in the exploratory stage of a creative activity. Brainstorming helps children to reveal and share a fund of knowledge they bring to the learning situation.

2.3.4.2 Factors that hinder creativity

There are at least five major obstacles to generation of good/creative solutions to the problems, as per Mussen et al (1984). They are failure to comprehend the problem, insufficient knowledge, firm belief in rules that are inconsistent with the correct hypothesis and finally fear of failure.
Most preschool children do not generate creative solutions because they fail to comprehend/forget the problem and they lack sufficient knowledge as noted by Mussen et al (1986).

The traditional curriculum and methods of teaching are all rigid and tradition bound. The existing educational system never calls upon the child to think. It is based on rote memory (Aggarwal 1995). These factors hinder the creative ability of a person.

2.3.4.3 Other factors associated with creativity

In one of the few cross sectional studies of creativity among elementary school children, creative expression was judged as more frequent in cultures characterised by less authoritarian attitudes towards the child as per Anderson and Anderson (1985).

Facilities for imaginative play should be mentioned as the road to develop creativity as noted by Winnicott (1979).

2.3.5 Correlates of creativity

2.3.5.1 Creativity and intelligence

Creativity is a distinct aspect of intellectual functioning, which is for all practical purposes independent of conventional intelligence, and it depends on unique cognitive factors which function within the hierarchical structure of intelligence proposed by Vermon (1950) and Foster (1971).

Torrance (1962), Wallach and Kogan (1965) have claimed that creativity and intelligence are two distinct mental abilities each involving
a cluster of skills. Their viewpoint derives support from the empirical
evidence obtained in the correlational studies, inland and overseas, where
low relationship between intelligence and creativity was found (Torrance

Considering results of various studies Guilford (1972)
concluded that a high IQ is not a sufficient condition for high divergent
product performance.

Telford and Sawery (1974) have stated that creativity will
flourish only at a certain desirable level of intelligence.

2.3.5.2 Creativity and sex difference

Kelly (1965) has reported superiority of males in creative
thinking and they have also observed males scoring higher than females
on non-verbal creativity tests.

Boys performed better on Torrance test of creativity according
to Torrance (1968).

Strains and Strauss (1968) reported that boys performed better
than girls on the measures of creativity both in Indian and American
culture but the difference was more pronounced in the Indian context.

Superiority of males over females was observed by many
investigators on creativity test (Tisdell, Blackhurst and Marks 1971).

There were many studies, which showed no significant
relationship between sex and creativity (Albert and Elliot 1973, Word and
Cox 1974).
Indian researchers Raina (1971), Rewart and Agarwal (1977) Badrinath and Satyanarayanan (1979), Dharmagadan (1981) have found significant difference in the different components of creativity favouring males. On the other hand Hussain (1974) has found superiority of females in the components of creativity.

The study of Srivastava and Thomas (1991) on 100 preschool children did not find any significant difference in creativity measures between boys and girls. Superiority of boys over girls is found in creativity tests conducted by Sebastian (1997).

Feingold (1992) viewed that gender difference in cognitive abilities tend to decrease with age.

2.3.5.3 Creativity and socio-economic status

Higher SES, higher creativity index has been observed in studies conducted by Taft (1969), Singh (1970), Harlow and Williams (1973).

Torrance (1963) and Smith (1965) observed that lower class youngsters were superior on non-verbal tests of creativity.

Indian investigators like Badarinath and Satyanarayanan (1979) Seetharam and Vedanyegam (1979), Chadha and Sen (1981) did not observe any significant difference in creativity scores of high, middle and low SES students.

2.3.5.4 Creativity and genetic factors

Comparison of identical and fraternal twins reveals that the contribution of heredity to individual differences in divergent thinking is
extremely weak (Pezzullo, Thorsen and Madaus 1972). This suggests that creativity may be especially sensitive to encouragement by parents and teachers.

Studies of the home environment of creative children reveal that their parents value non-conformity, emphasise intellectual curiosity and are highly accepting of their youngster’s individual characteristics, as per Albert and Runco (1986).

2.3.5.5 Creativity and play

According to Lieberman (1965) play provides preschool children unique opportunities to express themselves freely with no internal or external expectations to succeed or produce. When preschool children play with all sorts of objects they discover a lot of properties in these objects and children who play frequently and well are likely to have high measures on divergent thinking, as observed by Guilford (1967).

Ross (1973) working with kindergarten children examined the effects of play training on divergent thinking and found that play sophistication and originality on Torrance Tests increased significantly.

Play definitely enhances divergent thinking. Children engaging in divergent play appeared to be more flexible in abandoning ineffective strategies as they sought problem solutions as noted by Papalia and Olds (1987).

2.3.5.6 Creativity and problem solving

No single homogeneous set of cognitive operations or action is involved in problem solving. Some problems require creative solutions; others apparently can be solved more or less automatically (Greeno 1980).
Greeno (1980) has also mentioned that in ill-defined problems one has to frequently invent novel solutions and new procedures. This type of problem solving is referred to as creativity (Rebok 1987). In creative problem solving there is no one correct solution or standard way of achieving it.

Rebok (1987) has also stated that in reality problem solving and creativity lie along a continuum and are not true dichotomies.

2.3.6 Developmental theory of creativity

There is no single accepted theory of creativity and much of the creativity research is limited to one age group or cross sectional age comparisons.

2.3.6.1 Structural theory of Meyer (1983)

Meyer (1983) has proposed a structural theory of creativity based on the organismic developmental position of Piaget.

Meyer (1983) discusses four qualitatively distinct stages of creative development which parallel the cognitive stages of Piaget and they as follows:

Sensori-motor creativity is linked to the infant's failure to differentiate self from the world, resulting in a novel form of behaviour (example-creative sucking). Pre-operational forms of creativity can be found in a child's novel use of symbolism such as language. Meyer (1983) argued that the concrete structures, which emerge in middle childhood (seriation, reversibility, causality) result in greater flexibility in thought.
and enable the child to apply alternative mental schemes to the same content. Concrete operational children may express their new ability through more differentiated, more realistic drawing and paintings (Dudek 1974).

Finally in formal operations, reality becomes subordinated to the hypothetical and the adolescent can go beyond immediate experience to create novel mental products. Creativity at the formal operation stage is more congruent with many adults’ conceptions of mature creativity.

Meyer’s (1983) proposal is promising because it is based on a theory of cognitive development and because it broadens adult-centred notions of creativity to include the childhood years.

2.3.6.2 *Theories of creativity as reported by Aggarwal (1995)* are

1. *Creativity as divine inspiration* - creative writer is an agent of superpower.

2. *Creativity as madness* - creativity is sometimes taken to be a sort of emotional purgative that keeps a man insane.

3. *Creativity and intuitive genius* - a creative person intuits directly and immediately.

4. *Creativity as association* - new ideas are manufactured from older ones. Hence more association, more ideas and more creativity.

5. *Gestalt theory and creativity* - Restructurization of pattern or Gestalts that are structurally deficient is called creativity.

6. *Psychoanalysis and creativity* - According to Freud (1924) creativity originates in a conflict within the unconscious mind. Creativity is a tension reducing process.
2.3.6.3 Other theoretical perspectives

1. Behaviourists have been much concerned with environmental factors that affect the rate of one's own output (Multzman 1960).

2. Psychoanalytic thinkers have concentrated most on creative process. One such thinker for example, views creative activity as psychological regression in thought whereby the id is allowed to provide the ego with primary, uncensored materials as described by Kris (1952).

3. Cognitive developmentalists' concern with creative development is aptly conveyed by Piaget’s (1964) contention that the basic goal of education is to produce men who are capable of creativity, invention and discovery.

2.3.7 Evaluation of literature and position of the present study


Factors enhancing creativity are discussed based on the studies of Oden (1968), Mehta (1989), Shainess (1989), Isen and Baron (1991) and Chauhan (1996). Factors that hinder creativity are given by Aggarwal (1995). Anderson and Anderson (1985) have remarked that disciplinary technique can influence creativity. According to Vermon (1950), Foster
(1971), creativity and intelligence are independent variables. Torrance
(1962), Wallach and Kogan (1965) and Guilford (1972) have concluded
that no significant relationship between creativity and intelligence exists.
The relationship of creativity and sex is discussed by Kelly (1965),
Torrance (1968), Strains and Strauss (1968), Raina (1971), Rewart and
Agarwal (1977), Satyanarayan (1979), Dharmagadan (1981) and
Sebastian (1997).

Influence of socio-economic status is studied by Taft (1969),
Singh (1970), Harlow and William (1973), Torrance (1963), Smith (1965)
Badarinath and Satyanarayan (1979). Contribution of genetic factors is
analysed by Pezzullo, Thorsen, Madaus (1972). Role of play in creativity
is discussed by Lieberman (1965), Guilford (1967), Ross (1973) and
Papalia and Olds (1987).

Greeno (1980) and Rebok (1987) have described relationship of
creativity and problem solving. Meyer (1983) has given the developmental
theory of creativity. Aggarwal (1995) has also reported some theories of
creativity. Other theoretical perspectives are also mentioned.

It is clear from the review that there are no studies to find out
the influence of playschool on creativity of children. Indian studies on
creativity of preschoolers are also limited. As it has been found from the
review that play enhances creativity, through the present study,
investigator is trying to find out whether playschools have any
remarkable effect on the creativity of preschoolers.
2.4 Problem solving

2.4.1 Definitions

According to Charles (1979) problem solving involves the application of past experience, available information and learned methods to reach a solution.

Fisher (1982) defines problem solving as a systematic sequence of steps through which solutions to difficulties are developed, implemented and evaluated.

According to Hetherington and Parke (1986) problem solving mobilizes perception, attention and memory in a concentrated effort to reach a higher goal, the correct solution to a logical puzzle.

As noted by Papalia and Olds (1987) problem solving is the ability to find an answer to a question or a predicament, which is to solve a problem at a goal. It can be either routine (using existing procedure) or creative (using new procedure).

A problem is a conflicting situation in which a person experiences frustration in achieving a goal in the opinion of Morgan (1988).

Problem solving is a process for overcoming difficulties that appear to interfere with the attainment of a goal. It is a procedure for making adjustments in spite of interferences (Skinner 1993).

Berk (1996) has stated that problem solving involves efforts to develop or choose among various responses in order to attain the desired goal.
Morgan, King, Weisz and Schopler (1996) have defined problem solving as an important kind of thinking. In general a problem is any conflict or differences between one situation and another we wish to produce the goal.

According to Joyce and Weil (1997), problem solving involves selecting the correct rules and applying them in combination.

The productive work involved in the evaluation of the situation and the strategy worked out to reach one’s set goals is collectively termed problem solving by Mangal (1999).

2.4.2 Problem solving process

Helms and Turner (1989) and Kuppuswamy (1986) have remarked that problem solving tasks require considerable effort in contrast to motor skills and memorization of verbal materials and it involves concept formation and generalization. Memory is important at every stage of the problem solving process (Fisher 1990).

2.4.2.1 Concept formation

A child normally acquires a number of concepts before entering school (Helms and Turner 1981) and that the early concepts are relatively simple, they usually represent concrete objects.

Helms and Turner (1981) also put forth the fact that discrimination of objects, including both shape and size during childhood results from individual learning experience and depends on a number of perceptual conditions including distance and the relation one object may have to another.
Even at the sensory motor stage of development, the child learns to use words as labels for objects, persons and activities and concepts are formed as objects or data are classified and grouped systematically (Rebok 1987).

2.4.2.2 Generalisation

Interrelating two or more concepts forms generalisations. The application of such generalization to concrete experience is called problem solving as per Rebok (1987).

2.4.3 The components of a problem

As per Kimble, Gramezy and Zigler (1985) a problem consists of three components. They are:

1) A current situation that must be changed.
2) A desired situation to be attained
3) Certain legal moves.

Four elements are the basis of problem solving as described by Hampson and Morris (1996); they are-the vital stage, which is the development of a representation of what is involved in the problem as one reads through it. Then a goal is set by the specific question that is asked. In trying to solve the problem one has to draw upon a vast amount of past experience. Finally one has to carry out mental operations to mentally manipulate the parts of the problem.
2.4.4 Stages of problem solving

According to Mckeaachie and Doyze (1966), the elements involved in problem solving are the weighing of goals, the discovery of appropriate means to goals and the assessment of the probability that a given course of action will lead to the chosen goals.

To Ekstrand (1976), Sternberg and Bourne (1991) the stages of problem solving are preparation, production and judgment.

According to a theory forwarded by Bourne, Dominowski and Loftus (1979) on the stages of problem solving, "we prepare, we produce and we evaluate".

Rebok (1987) has described three steps in problem solving namely
1) Preparation - one needs to understand what the problem is and to prepare oneself to solve the problem.
2) Production - the next step is to generate possible solutions.
3) Evaluation - to decide how good the solution is.

Problem solving typically involves three major steps as per Feldman (1989). They are
1) Preparation of the creation of solutions.
2) Production of solutions.
3) Judgment and evaluation of solutions that have been generated.
2.4.5 Problem solving strategies

Simon (1975) has shown that even with a relatively simple problem different strategies are used to solve them.

As stated by Rebok (1987) in a random search strategy the problem solver applies, at random, operators in a trial and error fashion until a solution is generated. Thus if the problem solver is in a problem state he/she randomly chooses any permissible move as the next move. The greater the complexity of the problem, the more extensive search through problem space begins and less efficient the random search becomes and this strategy whether efficient or inefficient relies on the use of algorithms, which are methods guaranteed to generate a solution to a problem sooner or later.

Algorithm is a strategy that exhausts every possible answer till it comes up with the correct solution but algorithms are rarely used because they do not exist for many problems as viewed by Berk (1996).

Berk (1996) has also noted that algorithmic methods contrast with heuristic search strategies. A heuristic is a rule of thumb method that can lead to a quick solution or no solution at all.

In a heuristic search, problem solvers limit themselves to problem space most likely to produce a solution as viewed by Moates and Schumacher (1980).

People often employ a heuristic called means-end analysis which is a technique for solving problems in which the overall problem is divided into parts and efforts are made to solve each part in turn and this
method takes into account the difference between goal state of the problem and the current problem state, as per Anderson (1985).

Another useful heuristic for solving problem according to Anderson (1985) is to work backwards from the goal stage. This strategy is useful where many paths in the problem space lead from the initial state, but fewer paths lead to goal state.

Trial and error is another problem solving strategy. This is a method in which all possible solutions are tried out until one succeeds as per Baron (1996) and that analogy is another strategy, which is based on applying solutions which were previously successful with other problems similar to those underlying structure.

2.4.6 Theories of problem solving

There seem to be many theories of problem solving, as there are problems to solve. Two of the well-known theories are—Gestalt theory and Information processing theory.

2.4.6.1 Gestalt theory

One of the oldest theories of problem solving is called the Gestalt theory, the process of problem solving deals with an understanding of the structural relationships between the various elements of a problem and seeing how they can be restructured to form solutions to a problem (Rebok 1987).

Gestalt psychologist Dunckner (1945) considers a major barrier to effective problem solving to the development of a problem solving set, a habitual way of solving a problem based on familiar or routine
solutions. Another factor that interferes with successful problem solving is functional fixedness or the tendency to view an object in terms of its characteristic function rather than to envision novel uses.

Gestalt psychologists have made a significant contribution to the understanding of problem solving but their theoretical notions were often conceptually vague or difficult to test.

2.4.6.2 Information processing theory

Information processing theorists treat problem solving as a search for a goal or solution through a problem space (Newell and Simon 1972), which is the problem solvers' mental representation of the problem.

In the problem solving terminology the given or starting situation of the problem is called the initial stage, the situations on the way to the goal are the intermediate stage and the final stage - the goal state as mentioned by Anderson (1985).

According to this approach problem solving is a complex activity comprising several processes. These include registering information, retrieving material from memory that is related to the information and using both kinds of knowledge in a purposeful way as noted by Papalia and Olds (1987).

For well-defined problems the problem space is likely to be similar among individuals. But on ill-defined problems there is greater inter-individual variability in problem solving search, as pointed out by Rebok (1987)
2.4.6.3 Learning theory

The other theory related to problem solving is the Learning theory or Associationist approach— it is concerned with trial and error process of problem solutions (Thorndike, 1911; Watson, 1919; Pavlov, 1927).

2.4.7 Factors affecting problem solving

2.4.7.1 Cognitive factors

Dunckner (1945) studied that our interpretations can be affected by the way the problem is solved.

Marquis (1948) studied that problem solving behaviour occurs in novel or difficult situations in which a solution is not obtainable by the habitual method of applying concepts and principles derived from past experience in very similar situations.

Sonntag and Bakar (1958) found that the conditions for learning, the necessary achievement motivation is also indirectly relevant to the development of problem solving ability.

As per Mckeachie and Doyze (1966) the various factors that affect problem solving are

a) Perception

In a problem solving situation similarity to previous situations is not great enough to lead immediately to a well-learned response. Rather the problem solver must perceive both how the situation resembles and how it differs from previous situations.
b) Motives

Since motives influence perception, they affect the discovery of alternatives. They also affect the choice of alternatives since many alternatives may have motivational value in addition to their value as means of reaching the goal. Individuals who are motivated by fear tend to choose either a 'sure thing' or a very difficult task, while people motivated positively tend to choose tasks with 50-50 probabilities of success (Coombs and Pruitt, 1960).

As per Manjuvani (1985) constant interaction and familiarity with different objects, playing with toys, all help in improving perceptual discrimination and this aids in the development of problem solving skills.

Problem solving activities stimulate and develop skills of thinking and reasoning. Applied thinking is essential for problem solving and according to Fisher (1990) the factors influencing problem solving are attitudes, cognitive ability and experience. They are discussed as follows:

1) Attitudes

A good problem solver shows confidence in his/her ability. Children need help to recognize intangible strengths such as memory, imagination and persistence. The child's interest, motivation and confidence play an important role in determining his/her problem solving abilities.

2) Cognitive ability

This includes knowledge, memory and meta-cognition. All problem solving is based on knowledge. Knowledge requires memory.
The two are inextricably linked. Memory is important in all stages of thinking and is involved in every stage of problem solving. Meta-cognitive skills help to acquire and control knowledge and thinking, as pointed out by Rebok (1987).

3) Experience

The starting point of problem solving is experience. Left to themselves, children are not very good at bringing their previous experience to bear on solving related problems. Both structural factors (how clear the problem is) and psychological factors (how clearly the problem is expressed and understood) are important, as noted by Schank (1982).

Clarity and simplicity of presentation are the keynotes in solving a problem. The teacher’s attitude is also very important in deciding the problem solving ability of a child (Fisher 1990).

2.4.7.2 Age, sex and socio-economic status

McKeachie and Doyze (1966) studied that the individual’s increasing experience from childhood to old age results in generally improving solving of problems requiring the use of past knowledge, but this increasing knowledge may also reduce flexibility.

Odom’s (1967) study indicated that the age and socio-economic background of students played a great role in determining the kind of problem strategy used. As age and socio-economic level increased, strategies thought to reflect higher cognitive processes also are increased.

Boys are superior to girls in problem solving, as reported by Martin and Stendler (1970).
There was little or no relationship between problem solving ability and socio-economic status, as mentioned by Lewin (1972).

Strategies employed in problem solving vary with age (Meyer 1983).

2.4.7.3 Emotional factors

According to Charles (1979) various factors can affect problem solving. These include emotional factors like anxiety, anger and frustration and attention span of a person, which might make a problem more difficult to solve or they may increase efficiency in working out a solution to a problem.

2.4.7.4 Creative thinking

At the heart of creative thinking lies the ability to produce fresh and appropriate ideas and to create new mental structures from old and links between memory and problem solving are apparent, as noted by Hampson and Morris (1996).

2.4.8 Factors that interfere with effective problem solving

Despite our best effort we are sometimes unable to solve problems. In most cases failure stems from obvious causes as per Hampson and Morris (1996) and they are - lack of necessary experience / information, functional fixedness: prior Vs present solutions, mental set and problem in selecting the right operators.
1) *Lack of necessary experience / information*

One may lack the necessary experience or internal frame works that allow one to represent the problem situation fully and effectively.

2) *Functional fixedness: prior Vs present solutions*

A strong tendency to think of using objects only in ways they have been used before (Weisenberg and Suls 1973). But unless one avoids functional fixedness one’s ability to solve many problems can be seriously impaired.

3) *Mental set*

There is also a strong tendency to stick with a familiar method of solving particular types of problems, like the one that has worked before. Since past solutions have in fact succeeded, this is certainly reasonable at least up to a point. Difficulties arise, however, when this tendency causes one to overlook other more efficient approaches.

4) *Problem in selecting the right operators*

In solving any problem correct operations have to be performed. Operations that have proved appropriate in the past may no longer be the best or even adequate.

The other obstacles to problem solving are unclear definition of the present state or of the desired goal, lapse of memory and unwarranted assumptions, as per Kimble, Garmezy, Zigler (1985).
2.4.9 How to foster problem solving abilities?

To help children organize their thinking and problem solving abilities, Glimer (1970) suggested the following:

1) Children should be allowed to work on only one big problem at a time. Confusion frequently arises when two or more problems are approached simultaneously.

2) A parent’s patience allows time for trial and error, a valuable aspect of problem solving behaviour.

3) A child’s accomplishments should not be judged by adult standards. Parents should also expect some degree of regression from time to time.

4) Parents should allow children to solve their problems on their own.

5) By studying their own behaviour, parents may be able to guide the child through step-by-step sequence.

2.4.10 Problem solving abilities of preschoolers

Result of a study conducted by Weir (1967) showed that the problem solving ability of children has a tendency to surpass that of adults.

The ability to think constructively in problem solving situations depends largely on preschoolers’ experience with similar situations. It might depend, too, upon the child’s creativity (Elkind 1971).

Preschool children’s failure in problem solving tasks occurs due to their lack of confidence, lack of careful observation and inability to show perseverance, as denoted by Helms and Turner (1986).
According to Rebok (1987) children develop specific knowledge about procedures or strategies for reaching the desired goal state. Young children's strategies contain no plans; they want to get directly to the goal. Older children make plans before they move, but still have a tendency to move directly.

As per information processing approach, a child possesses simpler or less refined forms of the strategies and processes used by adults. The child employs strategies and processes, which may be distinctly different from those of adults. Children's problem solving abilities become more sophisticated both as strategies they possess become better developed or as new strategies are acquired (Hetherington and Parke 1988).

By the time children are three to six years old they have increased intellectual ability to imagine and conceptualise and their understanding of abstract concepts improve as denoted by Nakra (2000, November). So they will have better problem solving skills than a toddler.

2.4.11 Play and problem solving

Play fosters the development of an 'as-if' attitude that aids in subsequent creative innovation (Smith 1967) and provide the chance to observe features of the environment that would be overlooked in more pressurized, goal-directed situations (Bruner 1972).

The relationship between play and problem solving is intriguing because the non-goal nature of play seems to be at odds with the type of abilities necessary to solve problems. Various aspects of play
have been hypothesized to be important for enhancing the ability to solve problems as per Bruner (1972) and Vandenberg (1978). It has been suggested that play provides the opportunity to develop behavioural subroutines that might later be used in problem situations.

Play significantly enhances problem-solving abilities (Rubin, Fein and Vandenberg 1983) and that children spend an inordinate amount of time playing.

The constant interaction and manipulation of objects in the environment facilitate the child’s understanding of the basic relationship between objects and help in subsequent problem solving, in the opinion of Roy (1984).

2.4.12 Evaluation of literature and position of the present study


Problem solving strategies are discussed by different psychologists - Rebok (1987) has given importance to random search strategy; Berk (1996) to algorithm and heuristic methods; Anderson (1985) has mentioned a heuristic called means end analysis and working
backwards. Baron (1996) has mentioned trial and error and analogy as another strategy.

Theories of problem solving - Gestalt theory is discussed by Rebok (1987) and Dunckner (1945). Information processing theory by Anderson (1985), Rebok (1987) and Newwell and Simon (1972). Mckeachie and Doyze (1966) have listed perception and motives as factors affecting problem solving and have pointed out the influence of age, sex and SES on problem solving. Manjuvani (1985) has given importance to playing and manipulating with objects. Fisher (1990) has mentioned attitude, cognitive ability, experience and clarity of presentation as factors influencing problem solving.


There are no studies to show whether preschoolers who attended early educational programmes with emphasis on play have any effect on problem solving. Indian studies on the preschooler's problem solving ability are very limited. So the present study is undertaken to throw some light on this relatively unexplored area.
2.5 Social cognition

2.5.1 Definitions

Social cognition refers to perception, thinking and reasoning about humans and human affairs as stated by Flavell (1977).

Social cognition includes three components- knowledge of self, of others and of relationships, in the view of McGurk (1978).

In the opinion of Damon and Hart (1982) social cognition refers to how children come to understand the viewpoints, emotions, thoughts and intentions of themselves and of others and how they think about social relationships and institutions.

Social cognition refers to the knowledge of self, social roles and relations between people (Overton 1983, Shantz 1975, 1983).

Social cognitive development as observed by Mussen, Conger, Kagan, Huston (1984) refers to children’s knowledge and understanding of the social world-of people including themselves and of social relationship.

Social cognitive phenomenon includes conception of self, knowledge of others, social perspective taking and role taking, moral judgment and pro-social behaviour such as empathy, as observed by Rebok (1987).

The process through which one notices, interprets, remembers and later uses social information is called social cognition as noted by Ross (1987).
Feldman (1989) states that social cognition is the process that underlies our understanding of the social world.

The basic aspect of social cognition is how one thinks about other people (Gilovich 1990 and Baron 1996).

Fiske and Taylor (1991) denote that social cognition can be defined as cognition about social phenomenon.

Social cognition is the process through which we notice, interpret, remember and later use social information (Baron 1998).

2.5.2 Development of social cognition

How children come to understand the viewpoints, emotions, thoughts and intentions of themselves and of others and how they think about social relationships and institutions are dealt within the aspect of social cognition. The central process in the development of social cognition, particularly in infancy, is differentiation - differentiation of self from non-self; of humans from inanimate objects and of any human object from another (Olson 1981, Hetherington and Parke 1984 and Flavell 1985).

Damon and Hart (1982) and Flavell (1985) have observed that children become increasingly aware of the psychological process associated with their own and other people's feelings, motives, emotions, values, problems and cognition. They speculate on what others think about them and examine their own thinking about themselves and others.

Just as children's understanding of the physical world changes as they mature, so do their thinking and understanding about their social
world. As children develop into middle childhood and adolescence their social cognition becomes more and more determinant of their behaviour, as viewed by Craig (1989).

Social cognition becomes better organized with age. Children as they grow up are able to view the multiple aspects of people and hypothesize about the complexities of the relationship to their environments' past experiences and future expectations, as noted by Flavell (1998).

2.5.3 The importance of social cognition

Overton (1983) and Shantz (1983) have stated that the ability to understand our thoughts, feelings, needs and intentions as well as those of others is a developmentally important phenomenon and when investigators applied the knowledge gained from cognitive developmental psychological research, to the developing child's knowledge of self, social roles and relations between people, a new field of enquiry called social cognition was born.

As noted by Rebok (1987) when the field of social cognition emerged, researchers discovered that cognitive and social functioning are intimately linked and this linkage is not as straightforward as once imagined and they realized that the knowledge of social cognition is of great significance in the life of an individual.

2.5.4 Social and non-social cognition

Piaget (1964), Chandler (1977), Bearison (1982) and Damon (1979) argue that all cognition is inherently social. The social world is
more complex than the physical world. Social cognition develops more rapidly than physical cognition. Children develop the concept of person permanence well before that of object permanence as denoted by Hoffman (1981). Social cognitive knowledge may follow different principles of structure and organization than non-social cognitive knowledge even though the two are fundamentally similar (Damon 1979). The differences between these two realms of knowledge summarized by Shantz (1983) are as follows

i. Actions on physical objects are more predictable than action with people.

ii. The range of possible actions on objects is much less than that on people.

iii. People but not objects can be understood in part, by underlying thoughts, emotions and intention.

iv. Affective relations between people are more intense than between objects and people.

v. Person-person relations, but not person-object relations are characterized by shared, co-ordinated intentions.

Changes in social cognition and the process underlying them are parallel to those in non-social cognition and children come to realize that social objects have permanence and existence of their own and that certain attributes of people are invariant, as observed by Flavell (1985).

In the words of Caplan et al (1991) like non-social cognition, social cognition develops from concrete to abstract. Children first notice the observable characteristics - the appearance and behaviour of themselves and other people; soon they become less egocentric and are more able to understand the viewpoints, feelings and thoughts of others.
and then they move from viewing people in terms of immediately observable attributes to more abstract characteristics involving motives, intentions and emotions of others.

According to Berk (1996) although social and non-social cognition share many features they differ in important respects also and they are as follows:

It is easier to predict motions of physical objects. In contrast the behaviour of people is not simply the result of others' actions towards them; it is also determined by inner states that cannot be observed directly. Children demonstrate some sophisticated understanding at an early age; even though others take a long time to develop. Unique features of social experience probably help children make early sense of these complexities. First, the fact that people are animated beings and objects of deep emotional investment makes them especially interesting to think about. Secondly, social experiences continually present children with discrepancies between the behaviour they expect and those that occur which prompt them to revive their thoughts about social concerns. Finally, the children and those with whom they interact are all human beings with the same basic nervous system and a shared background of experience. This means that interpreting the behaviour from a self's point of view helps in understanding others better.

2.5.5 Models of social cognitive development

Although social cognitive development is a large and vigourous field of research, no single theory of social cognition exists. Flavell (1986) and his associates have proposed a general model for the study of social
cognition. This model can be used to construct inferences about the social world and to apply these inferences to the social situation. According to Flavell et al. (1986) at least four sequential steps are involved in this social inference process: (i) existence, (ii) need, (iii) inference, and (iv) application. 'Existence' refers to a person's knowledge and awareness of certain social facts or events. Children may possess a strategy, but fail to use it spontaneously. This has been termed as 'need'. 'Inference' is the ability to identify another person's feelings, thoughts, and perceptions. Applying the knowledge gained through these three steps is termed 'application'. This model provides a useful heuristic framework for evaluating how people process social cognitive information in everyday activities.

2.5.6 How social information is processed?

Identifying the causes behind other's behaviour is an important part of social thought. In thinking about other people one must determine which of their attributes is most important and so worthy of further processing. This information must enter long-term memory, so that it can be retrieved later at times of need (Baron 1998).

2.5.7 Basic aspects of social thought

2.5.7.1 The false consensus effect

In the views of Marks and Miller (1987) the availability and tendency to assume that others think as we do is termed the false consensus effect and that there is a strong tendency to believe that other persons share our attitudes to a greater extent than it is true. One possible basis for false consensus effect is that we often find it easier to remember instances in which others agreed with us. The availability heuristic
indicates that the easier it is to bring information to mind, the more important we judge the information to be. The easier it is to remember information, the more weight we attach to it. As a result we tend to over estimate the extent to which others share our opinions, as concluded by Berk (1996).

Suls and Wan (1987) have stressed that while false consensus effect is very common, it is also important to note that it does not occur in all situations; where highly desirable attributes are concerned, people wish to perceive themselves as unique - more different from others, in a more positive direction than they actually are.

2.5.7.2 Automatic vigilance

There is a powerful and strong tendency to pay attention to negative social information described as automatic vigilance, as noted by Shiffrin (1988).

In an important sense, this tendency is very reasonable. Negative information alerts us to potential danger and it is crucial that we recognize it and respond to it as quickly as possible (Pratto and John, 1991). The automatic vigilance effect is something of a two-edged sword; it may save our cognitive effort, but it can lead us into errors in perception or judgments of others.

The automatic vigilance effect helps explain why it is often so important to make a good first impression on others. Automatic vigilance effect can have important effects on key aspects of social thought, in the opinion of Berk (1996).
2.5.7.3 Motivated skepticism

The tendency to require more information to make a decision contrary to a person's initial preferences than a decision consistent with one's initial preferences (Ditto and Lopez 1988). According to Berk (1996) because of its operation one tends to require relatively little supporting information to arrive at a conclusion one wants to reach, but a great deal of disconfirming information to arrive at conclusions opposite to our initial inclinations. Thus there are several kinds of such filters that make it more difficult for such inputs to enter our social thought and to our conclusions. Motivated skepticism is one such filter. Thus motivated skepticism appears to be yet another important 'tilt' in social cognition.

Evidence of this tendency to be more skeptical about information that does not support one's current views is provided by the findings of many studies (Ditto et al, 1988; Ditto and Lopez 1992; Kruglanski 1990).

2.5.7.4 Counterfactual thinking

A person's reaction to various events depends not only on the events themselves, but also on what these events bring to mind as reported by Kahneman and Miller (1987). There is a tendency to evaluate events by thinking about alternatives to them—"what might have been" (Gliecher et al 1990). This reasoning about counterfactual thinking leads to the following prediction: Negative outcomes that follow unusual behaviour will generate more sympathy for persons who experience them than those that follow usual or typical behaviour as denoted by Miller
and McFarland (1987). Such counterfactual thinking can affect a person’s interpretation of experience and subsequent decisions or judgments.

2.5.8 Aspects of social cognition

2.5.8.1 Self-recognition

As stated by Flavell (1977) this is the perception of self as a separate being, distant from people and objects in the surrounding world. The beginning of self lies in the infant’s developing sense of agency-recognition that their own actions cause objects and people to react in predictable ways. Self-awareness becomes a central part of children’s emotional and social lives.

Study on two-year-old children to find out their ability to distinguish between self and others was assessed by Levine (1983). The result of the study supports the emergence of a variety of emotional and social skills.

The ability to distinguish self from others also permits children to co-operate for the first time in playing games, solving simple problems and resolving disputes over objects (Brownell and Carriser1990, Caplan et al 1991).

2.5.8.2 Conception of self

According to Livensley and Bromely (1973) and Eisen (1977) the point at which the development of all social cognition begins is namely the understanding of one’s self. There is relatively little evidence on the development of self-concept in early infancy. Self-concept is the sum total of ideas and perceptions a person has about himself/herself. During early
and middle childhood the self-concept continues to develop as the child’s cognitive and social world expands, by the time they enter elementary school, children can give a fairly accurate description based on concrete characters like gender, age, sex, appearance and possession. Other studies asking children and adolescents to describe themselves have reported similar trends from physical to psychological self-conceptions and from an integrated sense of self to conceptual integration of self esteem.

In a study by Keller, Ford (1978) on three to five years, children mentioned their attributes when asked about self-concept. These findings are in agreement with Piaget (1954).

Self-concept plays a critical role in determining one’s relationship with others. The beginning of self-awareness appears sometimes during the second year of one’s life. At around eighteen months children recognize their own faces and point to their picture and respond when their names are called, as observed by Damon and Hart (1982).

Damon and Hart (1982) have also argued; many young children express self-statements that are not purely physicalistic and not purely psychological. They have proposed a multidimensional model of self-understanding that describes how the aspects of self, interact in course of development. Their model is largely speculative but draws attention to the fact that development of self concept proceeds along several dimensions simultaneously rather than from one level of understanding (outer, physical) to another (inner, psychological).

During early childhood, children start to construct a self-concept. Self-concept is measured by asking people to describe
themselves or to tell how they are different from others. Until the age of seven years children are seen to define the self in physical terms. In middle childhood self changes from an appreciation of typical emotions, attitudes and observable characteristics to an emphasis on personality traits supported by cognitive development and perspective-taking skills, as observed by Feldman (1989).

As mentioned by Craig (1996) studies in which children have been asked to describe themselves indicate that preschooler's self concept is largely based on concrete characteristics such as name, physical appearance, possessions and typical behaviour.

A child's self concept tends to emphasize individualistic traits in complex cultures and social traits in simple cultures (Baron1998).

2.5.8.3 Conception of others

Children's thinking about other people, their description of other's personality and inferences about their behaviour and mental states; have much in common with their developing understanding. Children younger than seven years usually refer to external, concrete attributes such as a person's name, physical characteristics, possession, and overt behaviour. They also frequently use global evaluative adjectives, good, bad, mean and nice, in the views of Selman (1980).

The area dealing with how people view the internal and external attributes of others is called person perception as stated by Borenboin (1981) and the author has also hypothesized that young children describe the people they know primarily in terms of physical
appearance, social role, habits, possessions, age and sex rather than by character attribution.

2.5.8.4 Social cognition as social inference

The study of social cognition was defined as the study of the child’s intuitive or logical representation of others, particularly his/her abilities to characterize others and to make inferences about their covert inner psychological experiences as stated by Shantz (1975). The social inferential abilities that have received major emphasis are the abilities to represent other people (person perception), to infer their thoughts (cognitive or social perspective taking or role taking), visual perception (perceptual or spatial perspective taking), feelings (empathy or affective perspective taking) and motives as per Morgan (1989).

2.5.8.5 Role taking

Rebok (1987) has mentioned that role taking refers to the ability to adapt to the roles and perspectives of other people. Children (3-6 years) can recognize the reality of subjective perspectives (thoughts and feelings) within self and others. But because children do not clearly distinguish their own perspective from that of the others, they do not recognize that another may interpret similarly. Rebok (1987) has also mentioned that children show some confusion about the subjective and objective aspects of the social world.

Spivack and Shure (1974) hypothesized that children who become emotionally sensitive to others through role-playing should be better able to envision a broader range of problem solutions.
2.5.9 Young child's theory of mind

As described by Berk (1996) children think more about themselves and others, they begin to form a naive theory of mind - a coherent understanding of people as mental beings with a rich inner life accessible to themselves and not to others. After the age of two and a half years children refer to mental states as 'want', 'think' and 'pretend'. They tend to view the mind as a passive container of information. Young preschoolers are clearly aware of an inner self of private thought and imaginings.

According to Wellman (1996) from the age of three or four years children's ideas of how the mind works are differentiated, organized and accurate enough to qualify as a theory.

Berk (1996) also remarked that the theory of mind that emerges around the age of three to four in which both beliefs and desires determine behaviour and that it closely resembles the everyday psychology of adults. Preschooler's mastery of false belief is a remarkable achievement. It indicates that they can make genuine psychological predictions based on mental states.

2.5.10 Social cognition of preschoolers

The knowledge of self specifically seems to be a crucial part of social cognition as per Lewis and Brook (1975). Social concept has a great role to play in the development of social cognition of children (Flavell 1977).

Preschoolers are fascinated with themselves and many of their activities and thoughts are centred on the task of learning all about...
themselves. Activity is essential to the preschool child’s self-definition: they define themselves in terms of the activity they do, as noticed by Ketter et al (1978).

A first component of social knowledge or social concept is social inference-guesses and assumptions about what another person is feeling, thinking or intending in the view of Flavell (1978) and Shantz (1975).

A second component of social knowledge is the child’s understanding of social relationship. Children gradually accumulate information and understanding about the obligation of friendship, loyalty and respect for authority. The third aspect of social knowledge is social regulation such as social rules and conventions (Flavell 1978).

Many cognitive theorists point out that children’s attempt to regulate their own behaviour is influenced not only by their developing self-concept but also by their developing social concepts. The young child’s social concept is based on character attribution as remarked by Craig (1996).

There is a dramatic growth in self-control and social competence during the four important years from age two to age six. Children develop increasingly complex concepts. Preschool period is an important time for building some of the important concepts (Baron 1998).

2.5.11 Factors influencing the development of social concept

Rheingold (1981) has pointed out that it is through exploration infants learn about the world, people as well as things.
The physical environment, the things the child has seen, heard and experienced in the environment (Chattopadhyay 1985) has a major impact on the social concepts of the child.

From birth their parents, peers, teachers and community treat boys and girls differently. Boys and girls often act differently and this difference is most marked during the preschool period. Studies have shown that boys have high self-concept, are friendlier, have more friends than girls, in the words of Rao (1986).


Everyday experience with parents and teachers is fundamental to the child’s developing social skills (Cohn, Patterson 1991, Parke and Ladd 1992).

A recent study conducted by Swapnaran (2000) shows that both boys and girls have similar concepts of gender.

2.5.12 Play and social cognition

According to Wood and George (1973) one of the social functions of play is not only to help children to learn how to co-operate with others, but also to enable them to act out social roles. To them much of the young child’s experience of the world, of people and of things, comes to him/her during an impressionable period of his/her life through play.
Play behaviour is an important part of social development. Montessori (1974) describes the child at play as being in complete harmony with the basic law of endless activity, which manifests itself in every aspect of nature.

Toys prepare the children to express themselves to be confident, flexible (Singh 1982), advances co-operation, conservation and complex peer interaction (Clarke, Stewart and Fein 1983).

Play begins in the sensori-motor period. Symbolic or make-believe play is characteristic of age two to seven years. Such play is influenced by the play materials available, as noted by Miller (1983).

Play during preschool period helps to develop autonomy, competence, independence, satisfaction and also to learn about themselves, about others and about the social world around them, in the words of Knight (1984).

A behaviour that is observed during pretend play is symbolic play and through such plays children acquire skills that allow them to separate the meaning of an object from the object itself and to give identity to objects. Children use symbolic play right from the middle of the second year and it is a way of learning about their environment. Children carry out actions, take on roles, transform objects as they express their ideas and feelings about the social world as noted by Boyatzis and Watson (1993).

Play helps to develop social relationship. Children use play materials and equipment to understand the role of mother, father, teacher
and doctor. Play helps in the development of physical and motor skills, as remarked by Watson (1993).

To Hurlock (1998) play gives the child a chance to learn how to get along with other children. From his play with others he learns to share, to give and take, to co-operate and to submerge his personality into that group.

2.5.13 Evaluation of literature and position of the present study


Marks and Miller (1987) and Suls and Wan (1987) have dealt with false consensus effect; Shiffrin (1988), Pratto and John (1991) have discussed motivated skepticism. Miller and McFarland (1987) and Gliecher et al have given their views about counterfactual thinking—all these areas are included under the basic aspects of social thought Damon and Hart (1982) have dealt with the importance of self concept. Livesley and Brombely (1973) have discussed the development of social cognition. Selman (1980) and Shantz (1983) have given their views about children’s thinking of other people. Rebok (1987) has dealt with the role taking skills of children. Flavell (1977) and Shantz (1975) have listed the components of social knowledge. Craig (1996) has studied young children’s learning
about social concept. Factors influencing social concept formation are being studied by Chattopadhay (1982), Rao (1987). Wood and George (1973) have given importance to the social functions of play. Boyatzis and Watson (1993) have highlighted the development of social relationship through play.

There is a real scarcity in the research studies pertaining to social cognition of preschoolers. Social cognition is relatively a new area and the research studies pertaining to this field are gradually gaining momentum. The present study is undertaken with the aim of throwing some light on this relatively unexplored field of research.

2.6 Preschoolers

2.6.1 Definitions

Desoares (1979) has commented that a child is neither an adult nor a miniature adult; he is an individual with feelings, who has to be helped in the growing up process.

Preschool generally refers to any programme for children prior to their entry into first grade; a child who is in this preschool period is called a preschooler (Morrison 1980).

According to Devadas and Jaya (1984), Clarke-Stewart and Friedman (1987), Craig (1989) and Chauhan (1996) a preschool child is a child between the ages of two and six years.

Constable (1988) has called a three to five year old child a preschooler.
Children between the ages of three and six years are in the preschool period as stated by and Nakra (2000, November).

As per Hurlock (1998) the preschool period extends from two to six years of age, when dependency is a thing that has passed and is being replaced by growing independence.

2.6.2 Importance of preschool years

Many psychologists and educators have brought out the importance of preschool years. The preschool period is the most formative years on which rest the later years of the entire human life span (Shamsuddin 1971), it is the period of flowering of self (Leeladevi 1975). This period is the most crucial one in the life of an individual (Govilkar 1979, Singh and Jain 1982), is the most sensitive and vulnerable stage of physical, intellectual, emotional and social development and is a tender and impressionable period (Miller 1983). The foundation of personality traits is laid in this period as per Khan (1981).

Fontana (1986) has stated that the child’s social life begins at home and his early social experiences play a dominant role in determining his/her future social relationship and patterns of behaviour towards others.

To Papalia and Olds (1987) a child’s pattern of growth and development and his personal and social adjustments during early childhood period strongly influence his later attitudes, interests, emotional reactions, behaviour patterns and interpersonal relationships.
It is during the early years that the child is susceptible and responsive to the positive environmental influences, which enhance or expand his/her development. As mentioned by Montessori (1988) it is this sensitive period, which enables him/her to assimilate images from his/her environment in a truly prodigious fashion.

The future of a nation depends on how children are educated during the formative period of their lives. Creative impulses must be nurtured in the earliest formative periods (Craig 1989) and that there is a dramatic growth in the child’s self-control and social competence during the four important years of life from age two to age six.

During the early years the major development that is taking place is the control over the environment, so, as pointed out by Lombardi (1992) the early childhood environment should be based on developmentally appropriate practice.

Children need a secure and stimulating climate so that they can respond creatively. They need experiences, which help them interact with others, to develop interpersonal skills and to work and learn cooperatively (Nebraska department of education and The Iowa department of education 1994).

Curiosity is often the only incentive a child needs to take him/her into new unfamiliar worlds and it is at its peak in preschool period in the view of Nakra (2000, November).
2.6.3 Causes of the difference between children in different child care environments

More than simply documenting the differences between children in different child-care environments, research offers some tentative suggestions about these differences. The four possible reasons as noted by Clarke-Stewart (1990) are (1) differences in the amount of attention and stimulation, (2) differences in the kind of attention and stimulation, (3) differences in the quality of attention and stimulation and (4) pre-existing differences in the children themselves and their families.

2.6.3.1 Difference in the amount of attention and stimulation

One reason that the children in centre care are advanced might be that centres offer more physical stimulation- more space and materials. Although extreme difference in the amount of space per child has indeed been related to the child’s behaviour and development in child care environments (Prescott 1973; Rohe and Patterson 1974; Smith and Connolly 1980); there may be more play materials in centres as noted by Golden et al (1980).

Another reason is that caregivers in centres interact more with children than do caregivers at home. The social and intellectual development of individual children in day care centres has indeed been positively related to the amount of attention they receive as observed by Carew (1980), Clarke-Stewart (1984), Howes and Phillips (1990).
2.6.3.2 Difference in the kind of attention and stimulation

Perhaps the most important difference between home and centres is the kind of attention and stimulation the child receives. Centre environment differs qualitatively in many numbers of ways.

2.6.3.2.a Peers

Centres offer children the opportunity to interact with other children of their age. It has been observed that playing with peers raises the complexity and creativity of children’s activities (Rubenstein and Howes 1983). Peer interaction occurs more in open or unstructured programmes with fewer teacher directed activities like lessons (Miller and Dyer 1975). Children’s competence in Chicago study by Clarke-Stewart (1984) was, however correlated with the number of different children with whom they interacted within the centre care setting.

2.6.3.2.b Caregivers

Farran and Ramay (1977) have stated that infants with prior day care experience adapt more quickly and explore more in unfamiliar environment and play more with peers.

The varieties of adults with whom the child interacts also contribute to development as per the studies of Howes (1983). The adults encountered in home and centres are also different. Centre caregivers are likely to have been trained in child development as observed by Clarke-Stewart (1984). Care givers with more training are more interactive, helpful and didactic (Kinney 1989) and the children in their care make more cognitive gains (Ruopp et al 1979). When preschool teachers are trained to
use more cognitively demanding strategies in talking to the children, the children's achievement is advanced as pointed out by Sigel (1986). Perhaps because of their training, centre caregivers compared with home caregivers (whether mothers or sitters) are less directive, authoritarian and are more likely to help, to explain, to transform task into games and are likely to respond to children's play (Howes and Rubenstein 1981) and according to Clark-Stewart and Apfel (1979) authoritarian discipline is related to lower intellectual and social competence.

2.6.3.2.c Physical equipment and materials

Within centre setting, high-level, cognitively challenging and constructive materials are available for children when compared with the home setting as mentioned by Pellegrini (1984). The physical materials and equipment in turn may encourage more frequent intellectual activities in the views of Clarke-Stewart (1990).

2.6.3.2.d Programme and curriculum

The other qualitative difference is in the kind of activities the programmes offer. Children in the centre learn to recognize and adapt to abstract, general rules whereas children at home operate on "hands-on" context where rules and lessons as such are limited. It has been suggested by Cole, Gay and Glick (1971), Siegel and Storey (1985) that schooling in this institutional sense facilitates the development of advanced intellectual, social, language and test-taking skills. Children who have attended some centre programmes will engage themselves in more constructive and complex play with materials and peers and score high on intelligence and achievement tests as observed by Clarke-Stewart (1990).
2.6.3.3 Difference in quality of stimulation

It has been found that the social skills of children in Sweden were related to the observed quality of child-care rather than whether the child was in the centre or at home (Lamb et al. 1988). Differences are least when homes are of high quality, as noted by Goelman and Pence (1987). Centre environments may confer unique benefits according to Clarke-Stewart (1990).

2.6.3.4 Pre-existing differences in children and families

Parents of children in centres may provide more stimulation and education to their children than do parents of children in home care. The main differences observed between child care centres and home care are greater verbal stimulation and play and less authoritarian discipline for mothers using centre care than for mothers using only home care as concluded by Rubenstein et al. (1981) and Clarke-Stewart (1984).

It has been found that children who are in preschool affect the mothers' behaviour by asking them to watch, read, play and answer questions; as a result mothers give more stimulation and become more responsive (Garber and Herber 1980).

2.6.4 Evaluation of literature and position of the present study


patterns. Papalia and Olds (1987) have given importance of early personal and social adjustment to later personality, Craig (1989) to early childhood experience and creativity. Lombardi (1992) and Nebraska department of education and Iowa department of education (1994) have stressed the need for good early childhood environment.


It can be seen that there are no studies comparing children who had attended and those who had not attended playschools. Indian studies on preschoolers brought up in different environments are scarce. The investigator is making an attempt to fill this vacuum by comparing preschoolers who had attended and those who had not attended playschool on certain key aspects of development.