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CHAPTER TWO

REVIEW OF LITERATURE

The review of relevant literature is presented by sorting the available studies under the following tentative headings. Obviously, there is no claim that the heads are mutually exclusive and/or exhaustive.

- Types of Play
- Setting/Characteristics of Play
- Format/Training during of Play
- Using toys and aides in play
- Measurement of Play

Toys and Play

Review of Indian Studies
PLAY IN CHILDREN WITH SPECIAL NEEDS

The field of play behaviours in children with special needs, especially mental retardation, has been a relatively neglected field of study (Hughes, 1998; Wolfberg and Schuler, 1993; Missiuna and Pollick, 1991; Westby, 1991; Mindes, 1982; Feitelson and Ross, 1973). The results reveal similar findings. Handicapped children exhibit same developmental play sequences as normal children, but development occurs more slowly and unevenly. There is greater variability in the skills present at any developmental level than normally. Skills that usually emerge together do so less frequently in handicapped children (Westby, 1991; Hirst, Shelley and Eva, 1989).

The children with special needs are no exception to their preference for play. Play is essential for every child's healthy all round development. It is even more essential for a child with disability and impairments. However, the form or content of play in children with special needs may be different from those of their so called 'normal' peers. Spontaneous play without others assistance may be characteristically lacking in these kids. Group play or allied activities governed by formal rules and regulations may be wanting. Expressive speech or prosocial behaviours seen in children may be inadequate in case of the child with special needs (Fraiberg and Adelson, 1973; Fraiberg, 1968; Hulme and Lunzer, 1966).
Parents and caregivers of children with special needs have an important role in fostering play skills in special kids. It must be ensured that the offered play is at the right level of the child. It should neither be too easy nor difficult for the given child or group of children. Assisting these children to gain competencies in play may have to be carried out in small and simple steps (Frank, 1968). Play activities and opportunities may have to be repeated again and again before such children reach the minimum levels of competency expected from them. Appropriate models of play are also required frequently to demonstrate the various aspects of a play or game situation in the case of these children. Caregivers need to constantly exercise restraint from spoiling a play or game situation by offering more than required assistance for some children with special needs who are slow. Special toys may be needed to encourage special kids. Extreme patience is required on the part of the facilitators to overcome the tendency of some special children to be 'fixed' or 'stuck to' some toys or play activities. Despite all the best of ones efforts to stimulate children with special needs, it must be admitted and accepted that there will be certain times and occasions when they would still continue to prefer playing alone. One need not feel guilty of such situations (Farina, 1976).

(a) Types of Play

Hulme and Lunzer (1966) compared free play of subnormal and normal children in a standard setting. The sub normal children in this study already
had the advantage of living in their own homes. But, the centres in which the samples were selected has not previously encouraged free play. These children showed that they adapted quickly to the change of regime and played spontaneously.

Knapczyk et al, (1976) carried out experiments on trainable mentally retarded children during free play activities. Observation of social play behaviour was made for 5 of the trainable children (ages 4-9 years). Results indicate that when non-retarded children of equivalent chronological age were integrated, increases in co-operative and parallel play were observed. However, no changes occurred with the integration of non-retarded children with equivalent mental ages.

Children with motor disabilities have been observed to engage more frequently in isolated and toy directed behaviours and less in social interactive and creative play. Increased dependence on others’ guidance, a lack of assertiveness and poorly developed social skills in unstructured situations are a few of the difficulties that may be experienced by these children (Missiuna and Pollock, 1991; Bretherton, 1984; Mindes, 1982).

Cunningham et al, (1985) investigated the mental ability, symbolic play, receptive and expressive language competencies of groups of young subjects with Down’s anomaly. They reported that symbolic play involvement is positively correlated with language competencies in these children.
In a related study, Cunningham, Glenn, Wilkinson and Sloper (1985) attempted to investigate the relationship between language and symbolic play in a group of children with Downs Syndrome and normal peers. Their findings suggest delays in language development, which in turn influenced their play behaviours as against their normal peers.

Power and Radcliffe (1989) compared performance on the symbolic play test (SPT) along with the Bayley Scale of Infant Development and the Stanford-Binet Intelligence Scale to determine the relationship of play behaviour to cognitive functioning in 247 developmentally disabled pre-schoolers. The subjects were classified as mild retarded, moderate retarded, a typical, borderline and language disorder. Correlations between cognitive and play measures for each clinical group were in the low to moderate range, except for a typical children where the correlations were negligible. It was concluded that assessment of symbolic play is a helpful adjunct to conventional ability when evaluation pre-school children.

Michael (1990) used a within-subjects design to examine the cognitive play of 12 mainstreamed mentally retarded pre-school boys (aged 24-70 months) during group free play at school and in an independent play situation at home. The subjects played with available toys at school and with three designated toy sets at home. The subjects played more in the home condition and this play was more sophisticated than that in the school condition.
Increased differences between home and school performances were positively associated with expressive communicative developmental age.

(b) Setting/Characteristics of Play

Horne and Philleo (1942) attempted a comparative study of spontaneous play activity in normal and mentally deficient children. They observed a markedly significant difference in the form of deficiencies in spontaneous play, limited choice of playmates and materials in the clinical group of subjects compared to the normal controls.

The length of play sessions was investigated by Phillips (1945) who found more explorations and organizational activities for shorter 20-minute sessions. The longer 60-minute sessions produced more tangential behaviours and were of less interest and more frustrating to the playing children.

Woodward (1959) observed play behaviours of severely mentally handicapped children and concluded that their activities appear purposeless and unlike that of the normal child of any age. In what is regarded as breakthrough research, Tizard (1964) as able to show that by creating an environment in which care and interaction followed the best nursery and family practices, mentally retarded children could and did play at the level approaching their mental age.
Piaget (1962) postulated that the capacity for pretend play from sensory motor play evolves through three trends: decentration, decontextualization and integration. Decentration refers to a child’s increasing ability to incorporate players other than himself into the activity. It implies the understanding that objects and agents around himself independent of the self. Decontextualization, in turn, signals the first steps of the child towards acquiring arbitrary symbol systems. It is reflected by object substitution and the invention of imaginary objects. Integration exemplifies the child’s increasing ability to combine separate actions into coordinated action sequences.

Studies have shown that autistic children appear to be most handicapped in all aspects of play. Tilton and Ottinger (1964) compared normal, retarded and autistic children in play and found a higher proportion of oral and repetitive use of toys in the autistic group, a lack of variety in their play repertoire and a failure to combine toys in a creative way.

Mothers of children with cerebral palsy were asked what kind of toys their children liked most during play. About 11% of the children aged between 2-7 years were said to enjoy no activity at all. Others, of all ages, were interested only in baby toys. Shere and Kastenbaum (1966) studied a group of severely handicapped children who are unable to walk or speak and they came to similar conclusions. Several studies suggest that explicit instruction
and guidance may be needed for parents to learn to select appropriate and rewarding play activities for their children.

A classic study of twin boys with mental retardation and speech delays was reported by Luria and Yudovitch (1959). They reported peculiarities in the play behaviours of these children. Hulme and Lunzer (1966) found no significant differences in the organization of play between subnormal and normal children although there were differences in their use of language.

Children with mental retardation are also known to have serious deficits in their receptive and expressive language. This becomes another stumbling block in optimizing the play behaviours of these children. Rutter (1972) gives a central place to the child’s ‘inner language’ and play.

Schlottmann and Anderson (1975) observed a total of 24 institutionalized retarded children (12 Downs Syndrome and 12 non-Downs Syndrome) in dyadic interaction with peers in a free play situation. Differences were observed between Mongoloid and non-mongoloid subjects on several social behavioural categories especially for boys. This supported the stereotypic conception of Mongoloids as cheerful, sociable and gregarious. Similar differences were observed in pretend play and patterns of cognition between subjects with Down’s syndrome and matched controls (Hill and McCune-Nicolich, 1981).
Van der Kooij (1978) carried out systematic play observations of 38 retarded children by using ten observation categories. It was found that the play behaviour of the retarded children is predominated by a great need to explore experiment and move. These children were observed not to use toys in a creative way. Boys showed particular interest in vehicles and environmental materials, while girls were pre-occupied with dolls.

Anita (1981) described some of the play characteristics of children with mental retardation and argued on the importance of play for them. She carried out a brief and critical review of the sparse literature on play with mentally retarded children and emphasized the need for more research on play in this group of children.

Anne (1988) examined the characteristics of play in a group of children with intellectual disabilities. The study emphasized the importance of “play” focus for the optimum benefit of these children in early intervention programs.

Frances (1990) examined the behaviour of 6 pre-schoolers (aged 3 years 6 months – 5 years) with moderate mental retardation who were placed in dyads to determine if a teacher mediated intervention procedure designed to promote reciprocal interactions increase the number and mean length of initiation and response chains and generalized to classroom free play activities. Subjects in all three dyads displayed increases in the number and
length of interactions during instruction but generalization varied among participants.

Missiuna et al., (1991) observed that the level of play behaviour does not always match the mental level with children with motor impairments. The amount of discrepancy depends on the type and severity of physical disability. A child with mild cerebral palsy may have poor hand function, limiting his or her ability to manipulate a toy as desired. A child with more severe impairments may be unable even to communicate his or her interest in a toy.

Normally developing children transfer from sensori-motor, pre-symbolic to symbolic play activities fluently and quickly. Profoundly mentally retarded children never enter the symbolic stage (Brunberg, 1974). The same is found to be true of severely autistic children if so specific rehabilitative support is available (Wolfberg and Schuler, 1993). Westby (1991) also reported that other handicapped children often stay at the pre-symbolic levels for longer time-months, even years-than non-disabled peers, before developing any symbolic abilities.

Hellendoorn and Hoekman (1992) examined the play behaviour of 18 kindergarten children without mental retardation and 55 children with different levels of mental retardation. All the children were in the developmental age range of 4-5 years. These investigators did not find any difference between the play behaviours, types and quality of play and play content for the two groups.
of children. The qualitative differences as described in the literature were not confirmed. The authors felt that this may be due to (a) the play situation which was an individual contact with a stimulating adult and/or (b) the fact that mental age and not chronological age was the standard of comparison. Consequently it was concluded that mild to moderate mental retardation seems in itself insufficient reason to exclude children from play intervention programs.

Hellendoorn (1992) examined the play behaviour of 18 kindergarten children without mental retardation and 55 children with retardation, all at a developmental age of 4-5 years. The study found few differences between the groups with regard to play activity, types and quality of play.

Hughes (1998) summarized the growing body of meaningful information about play in special populations. The discussed populations include pre-term infants, infants exposed prenatally to drugs, children with visual impairments, delayed language, hearing difficulties, cognitive delays, attention deficit disorder, autism, and victims of abuse.

Rettig (1998) addressed six environmental variables that can influence the play behaviours of young children including the amount of space available, the classroom arrangement, the length of play period, the effect of social or isolate toys, and the effect of different quality of toys.
Handen et al, (1998) used a playroom observation procedure to assess 42 children with mental retardation and ADHD (aged 6-12 years). Results indicated that the ADHD group was significantly more vocal and engaged in a significantly greater number of toy changes than control groups.

Lorenzi et al, (2000) compared physical activity levels of 34 children (aged 5 ½ to 12 years) with and without mental retardation in inclusive recess settings. They were monitored for heart rate, activity counts and observational activity levels. Boys with mental retardation demonstrated higher activity counts and heart rates than boys without mental retardation. It was concluded that an inclusive, non-structured recess setting appears to encourage and facilitate physical activity for children with mental retardation.

Linn, Goodman and Lender (2000) investigated the duration, frequency and trajectory of passive behaviour during play in children with Down’s syndrome. 14 children with Down’s syndrome (mean age 54 months) were observed during 30-60 minute independent play sessions by noting down the passive episodes. Results show that Down’s syndrome subjects spent more time in passive behaviour and shifted from play to passivity and vice versa more often than controls. No difference between Down’s syndrome subjects and controls was found for the time spent in social activities. But Down syndrome subjects exhibited greater frequency of social behaviour and spent more time in passivity.
Brown and O'Leary (2001) observed children on the Autism Spectrum Disorder (ASD) and noted that they do not develop play in the same way that children with typical development do. They described the play differences in children with ASD. They also suggested strategies for developing an intervention plan for these children.

Malone and Landers (2001) examined mothers’ perceptions of the toy play of their pre-school children with intellectual disabilities. Participants were 57 mothers of children aged 2-5 years. Each mother completed a 16 item questionnaire that focused on the characteristics of the toy play in which her child engaged. The majority of mothers reported that their children not only engaged in appropriate play with toys, but that their children engaged in advanced levels of play. Mothers also reported that their children would play with toys for extended periods of time during a given day, would play with a combination of toys, and needed little, if any, prompting to engage toys. Such report was in sharp contrast to much of the extant play literature and provides a rarely examined, yet invaluable, parent perspective. The between class generalization of toy play in the behaviours of handicapped children was already demonstrated in another study (Haring, 1983).

Pierce-Jordan and Lifter (2005) investigated the relationship between the social and play behaviours of young children with pervasive developmental disorder (PDD) and without PDD. Video-taped observations of the children
were examined independently for social complexity and play complexity. The results supported an inverse relationship between play and social interactions. The children’s play within a social interaction tended to be less complex than their play outside of the interaction. All children regardless of diagnosis, demonstrated similar behavioural patterns, although the children without PDD engaged in social interaction to a greater extent.

(c) Format/Training During of Play

Sessoms (1965) showed that through physical activity children with mental retardation develop high hand co-ordination and refine their sensory perception. Once their confidence is established and skills are developed, these children are able to enter into normal group activities. The factors contributing to their success in play was identified, such as the child being able to see immediate results, allowing for free play time, providing durable equipment and toys, and avoiding play activities involving reasoning and complex use of language.

Rutter et al, (1971) found autistic group of children scarcely showed any instance of group play participation. They inferred the secondary effect of speech handicaps in limiting their social opportunities for play reducing the possibility of cooperative imaginative play. Lovell et al (1968) found that speech delayed children developed fewer social activities than their speaking
peers. Hollindoorn and Hoekmann (1992) reported similar deficiencies in imaginative play of children with mental retardation.

It has also been shown that mentally retarded children show characteristics which cause difficulties for parents, and make it unrewarding for them to play with their children. These children show persistence of narrow and inflexible methods of exploration. Some children have been found to show a marked lack of initiative, playing only when encouraged, or prompted by an adult. Other children may perform rather than play (Jones, 1976).

Lachman and Hofstra (1976) successfully used modelling and guided rehearsal for teaching group play skills to trainable and educable retarded children.

Watkinson and Wall (1978) described a PREP Program designed to improve the gross motor play skills of moderately retarded pre school children. The program model includes individualized instructions in prescribed gross motor play skills, group activity on selected skills and free play activity in a well planned environment. The teaching model consists of six basic steps: planning, assessment, prescribing, teaching, evaluation and modification respectively.

Elicited play through modelling and guidance has been used as a tool for promoting symbolization in non disabled children (Lyntinen, 1989:
O'Connell and Bretherton, 1984). However no such information is available concerning its effects on the play behaviours of disabled children. Nonetheless, elicited play is frequently used in severely disabled children who have difficulties in participating actively in play.

Nietupski (1983) reviewed recreation/leisure skill training studies conducted with moderately, severely, and profoundly mentally handicapped persons. Four distinct research phases were identified: (i) The environmental antecedent intervention phase suggests that the provision of play materials can result in increased toy contact. (ii) The environmental antecedent and consequent intervention phase shows that material availability is an effective intervention procedure when antecedents with consequences. Rewards and over-correction techniques were found to be effective in improving play skills and reducing stereotypic behaviours. (iii) The task analytic training approach phase shows that subjects can be taught a variety of skills through task analysis involving gradual increases in response requirements. (iv) The maintenance and generalization phase suggests that training should be across various environmental contexts.

Powell et al, (1983) investigated the use of a training package across four families each with a moderately mentally retarded child (aged 4 years 4 months to 9 years 2 months) and at least one normally developing sibling. This
study demonstrated the need and benefit of involving siblings in teaching appropriate play behaviours in children with mental retardation.

Litaka (1987) evaluated a language intervention program with a mentally retarded Japanese boy over a two year period from age 3 years 9 months to age 5 years 6 months. The interventions consisted of the therapist and the mother engaging the child in cognitive training activities, physical games and pretend play activities designed to elicit language behaviours. The subject demonstrated an increase in spontaneous vocal utterances and acquisition of a few meaningful words. In his play behaviour he showed developmental sequence similar to that of non-retarded subjects.

Kim (1989) carried out an experimental intervention on a group of four children with moderate mental retardation. They received ten therapy sessions focused on symbolic play development. Compared to non-intervention group, the experimental children, and aged 5-10, demonstrated increased amounts of symbolic play as well as higher level of symbolism in their play behaviour.

Hirst and Shelley (1989) demonstrated that children with mental retardation and multiple handicaps can effectively participate in play activities and games, but the experience must be structured for them. They offered techniques for organizing play activities involving handicapped and non-handicapped children. They gave examples of singles play, rotation play and associative play.
Coe, Matson, Fee and Manickam (1990) successfully trained a group of mentally retarded and autistic children on non verbal and verbal play skills through structure sessions over a period of few weeks. The children with mental retardation were found to be superior in their acquisition of these play skills compared to their peers with autistic disorders.

Coe, Matson and Manikam (1990) studied 2 mentally retarded boys (aged 6 years) with autism and one mentally retarded five year old girl with Downs syndrome taught to initiate and play ball game with an adult confederate. The program targeted non verbal responses related to the actual execution of the ball game as well as verbal responses for play initiation and providing compliments for the confederate’s behaviour. All three subjects learned the game and by completion executed multiple play cycles each session. All subjects acquired nonverbal and verbal play responses to varying degrees.

Malone and Stoneman (1990) used a within-subjects design to examine the cognitive play of 12 main-streamed mentally retarded pre-school boys during group free play at school and in an independent play situation at home. The results of the study showed that children not only played more in the home condition, but this play was more sophisticated than that in the school condition. The differences between home and school performance in play were positively associated with expressive communicative developmental age.
Children not only sequenced play activities more at home but these sequences were longer and more complex than those at school.

Hupp, Bost and Alpert (1992) investigated the effects of different patterns of adult social interaction during play on children's exploration of toys and emotional responses. Four preschoolers (aged 3-4 years) with moderate developmental delays participated. At specified intervals, an adult joined the child in play with the toys using either the child-centred or adult centred play behaviours. While the two styles of adult interaction did not affect the child’s use of goal directed exploration or success, two of the children showed more positive directed responses during the child centred rather than the adult centred condition.

Nakken, van Wijck and Vlaskamp (1994) designed an educative play intervention program for profoundly and multiply handicapped children. They also discussed the problems encountered and offer solutions to the training of play behaviours in this group of children.

Mistrett (1996) proposed to use assistive technology to facilitate play and development in infants and young children with development disabilities. Assistive technology includes a wide range of devices, equipment, aids and materials for augmenting the existing abilities of a child with development delays or disabilities. They are used along with play to support the
development of positioning, communication, mobility, and self care in children with special needs.

Rebecca (1997) investigated the inter-relationship between play and language in 19 young children with Downs Syndrome aged between 1-5 years. Their findings suggest that by a careful observation of the play demonstrated by these children in a natural, relaxed play environment, it is possible to identify not only delays in play skills, but also possible delays in their development of language.

Jahr, Eledevik and Eikeseth (2000) demonstrated the possibility of teaching children with autism to initiate and sustain cooperative play. They used techniques like modelling, reinforcement, task analysis, and peer review to facilitate play behaviours in these children. These findings are supported by an earlier study on fostering symbolic play in the same population of children (Jarrold, Boucher and Smith (1993).

Cynthia (2001) used play therapy involving a choice in game or play situations to increase the language skills interactive behaviours in children with autism disorders. The results showed that choices were minimal as was restricted in their preferences for toys or other game materials during play.
Brown and Murray (2001) offered several useful strategies for enhancing play skills for children on the Autism Spectrum Disorder. Among other things, they suggest use of cue conditioned toy play, small group activity, and reinforced practice techniques for the optimum benefit of these children.

Davie and Kemp (2002) aimed to compare the expressive language opportunities provided by shared book reading and facilitated play in a group of children with mild to moderate mental retardation. Their findings indicate that shared book reading elicited more language, more intelligible language and more complex language than the facilitated play condition. The results also suggested that shared book reading allowed for more conversational interaction between the children and the facilitators. The indications are that shared book reading may provide better opportunities than facilitated play for collecting a representative language sample from young children with mild to moderate intellectual disabilities.

(d) Using Toys and Aides in Play

Currie (1969) presented an occupational therapy functional evaluation to be applied to children with mental retardation. Familiar toys and play activities of the child in a structured environment are seen as the basis for most effectively eliciting the child’s voluntary performance. They also provided a preliminary normative data for 56 non-retarded children on a number of physical skill, dexterity and perceptual motor activities.
Beyond a pervasive belief that the mentally handicapped did not play and only indulged in repetitive and stereotyped behaviours, objective and comparative studies of these children were virtually non existent until the late 1950's and early 1960's. An exception is the study by Horne and Phillip (1942) which compared the play of normal and mentally retarded children. The mentally retarded children were matched against their normal age peers by mental age to observe their spontaneous play in a playroom equipped with materials. The most marked difference between the two groups was in their choice of the play materials. While the mentally retarded preferred the more structured materials like scrap books, peg board and puzzles, the normal children preferred less determined creative activities using building blocks, clay and drawing materials. They also found it was necessary to initiate play behaviour in case of children with mental retardation by having significant models. There were no differences in the length of attention to play activities. These findings are supported by Gramaza (1976).

Mc Loyd (1983) found that highly structured toys elicit more non interactive pretend play than do low structured objects. In terms of gender, the study reported that boys are engaged in more fantastic themes and girls in more domestic themes during play. Pulaski (1976) differed from these findings. He reported that by the age of five, the structure of toys makes very little difference.
McEvoy and McConkey (1983) elicited information on play activities from 67 families with a moderate or severely handicapped child (aged 2-15 years). Details were obtained on who the children played with, the activities they engaged and aspects of the home environment conducive to play. Mothers' perceptions of play were also elicited along with their reactions to playing with their child. It was found that the children's play was immotive and lacking in variety and that it invariably occurred within the family. Mothers viewed play as very important and saw it as an enjoyable and beneficial experience for themselves as well as the child. The article argues that parents should be given opportunities to learn how to best nurture their child's development through play.

(e) Measurement of Play

Around that time, there was a dire need for an objective measuring device on play behaviours and play activities for children with mental retardation. Lunzer (1955) developed a measure for the organization of play which provides a nine point developmental scale of complexity. Using this tool, no significant differences were found between the 22 sub normal children's play and the play of the normal control group of comparable mental age. What these studies establish positively is that mentally retarded children at various levels can and do play in environments which specifically encourage them.
Poidevant and Spruill (1993) investigated the play activities of elementary children at risk and those not at risk for developmental disabilities. The Smilansky Scale for evaluation of socio-dramatic play of children, aged 3-8 years, was used to measure the play activities of the children. This instrument covers 6 dimensions: (a) imitative role play; (b) make believe with regard to objects; (c) make believe with regard to actions and situations; (d) persistence in role play; (e) interaction; and, (f) verbal communication. The results of the study indicated that there was no significant difference between the two groups.

TOYS AND PLAY

The use of toys during play by children has long been recognized (Fraser, 1966). The choice of toys during play by children of different ages has been focus of several investigations (Malone and Langone, 1998; Martin, Brady and Williams, 1991; Schwartz and Miller, 1988; Rubin and Howe, 1983; Newson and Newson, 1979; Malone, 1997).

Virginia Axeline (1989) listed:

Nursing bottles, doll family, dollhouse with house materials including chairs, tables, cot, doll bed, stove, tin dishes, pans, spoons, doll clothes, clothesline, clothespins, and clothes basket, a didee doll, a large rag doll, puppets, puppet screen, crayons,
clay, finger paints, sand, water, toy guns, peg pounding sets, wooden wallet, paper dolls, little cars, airplanes, table, easel, enamel top table for finger painting, and clay work, toy telephones, shelves, basin, small broom, mop, rags, drawing paper, finger painting paper, old newspapers, inexpensive cutting papers, pictures of people, houses, animals and other objects, and empty berry baskets to smash.

Melanie Klein (1964) listed:

Little wooden men and women, usually in two sizes; cars, wheel barrows; swings, trains, airplanes, animals, trees, bricks, houses, fences, paper, scissors, a not too sharp knife, pencils, chalks or paints, glue, balls and marbles, plasticene and string.

Investigators have classified toys as follows:

- Family Toys: Dolls, dollhouse, people, puppets soldiers, etc.
- Representational Toys: Cars, boats, planes, trucks, etc.
- Expressive Toys: Paper, paint, crayons, marking pencils, etc.
- Sensory Toys: Clay, play doll, plasticene, etc.
- Structured Toys: Building blocks, puzzles, etc.
- Motor Toys: Balls, ring toss, knock out benches, etc.
- Dependency Toys or Furry objects of animals, puppets, etc.
• Aggression Toys: Aggressive animals, guns, Bozo the clown, etc.

• Board Games: Ludo, Chess, Snakes and Ladders, etc.

Bronson (2003) proposes a catalogue of play materials for primary school children between the ages of 3-6 years. They may be broadly classified into four categories:

(a) **Social and fantasy play materials**

This includes items like mirrors, dolls, puppets, stuffed toys, play animals, replicas of things in the child’s world, construction and workbench materials, small people figures, play money, etc. Cassell (1965) showed improvements in the emotional responses of children undergoing cardiac catheterization on their brief exposure to puppet based therapies. Likewise, Rubin (1980) underlined the importance and role of fantasy play in the development of social skills and social cognition in young children.

(b) **Exploration and mastery play materials**

This includes construction materials, puzzles, pattern making materials, mosaic tiles, dressing, lacing and stringing materials, bead stringing, braiding, weaving, spool knitting and sewing materials, measuring materials, etc. This can also include games
which develop word building, spelling, vocabulary, memory, number and counting skills, guessing abilities and other strategies. Additionally, children at this stage require reading story books for reading aloud, poetry, rhymes, joke books, adventure books, etc (Gardner, 1981; Bengtsson, 1972).

(c) Music, Art and Movement play materials

This includes art and craft materials such as crayons, markers, colour pencils, art chalks, pastels and paint brushes of various sizes, variety of paints including water colours, variety of art papers for drawing, tracing and painting, pair of scissors, non-toxic pastes and glues, collage materials, clay, craft materials like simple looms, leather for sewing and breeding, papier-Mache, plaster of Paris, small beads for jewellery making, etc. Musical instruments can include real instruments such as flute, mouth organ, toy guitar, xylophone, etc. It can also include audio visual materials to facilitate movement and dance, rhythm, singing, listening to stories, etc (Davis, 1997; 1999; Dalley, 1985).

(d) Gross Motor Play Materials

This includes materials, such as, balls and sports equipments, kick balls, base balls, tennis balls, ride on equipments like bicycles,
outdoor and gym equipments for climbing ladders, hanging bars, rings and ropes, etc.

The following suggestions and guidelines have been identified for toy selection in different age groups of children:

No two kids are same when it comes to their preference for toys. One child may be interested in building blocks or doing puzzles; another may prefer riding bikes or playing ball. For babies between birth and one year, choose toys that

- Have pieces that are too large to swallow
- Are lightweight with various textures for handling and grasping
- Have no sharp edges or points
- Are brightly coloured
- Are non toxic

For toddlers between one to three years, choose toys that

- Aid in active physical activity especially things to write and climb on such as low tricycles, wagon to ride, large balls, inflatable toys, sand box, etc
- Facilitate make believe play such as appliances and utensils, child sized play furniture, simple dress up clothes and dolls, musical instruments etc.
For preschoolers between three to five years, choose toys that

- Encourage make believe play through use of costumes, pretend money play food, a toy cash register or telephone, a make believe village, fort, circus, gas stations or restaurant, puppet theatre, etc.
- Encourage transportation such as cars, trucks, planes, trains, boats and tractors, gym equipment, wheel vehicles, etc.
- Facilitate visualization and memory skills through use of board games, electronic toy, word and matching games, construction sets, books and tapes, colouring sets, crayons, paints, puzzles, stuffed toys and dolls, etc.

For school age children between six to nine years, choose toys that

- Facilitate examination and experimentation with the world around through board games, table top sports, games and classics like marbles and model, craft kits, printing sets, science kits, electric trains, racing cars, construction sets, etc.
- Encourage physical activity through large bicycles, roller skates, pogo stick, scooter, sled and other sports equipments, video games etc.

For middle school children between nine to twelve years, choose toys that
• Develop specific skills and life long interests, hobbies and crafts, model kits, magic sets, advanced construction sets, chemistry and science kit puzzles, board, card and electronic games, table tennis and billiard, etc.

Tilton and Ottinger (1964) attempted a comparison of toy play behaviour in a group of children whom they identified as autistic retarded and normal controls. They found stark differences between the choice of toys, manner, purpose, period or duration of their use, in the two groups of children.

Bambara, Spiegel-Mc Gill, Shores and Fox (1984) attempted a comparison on the utility of creative and non-creative toys during the manipulative play of children with severe handicaps. Their results indicated that only half of the sample made use of toys. Even wherein these children preferred the use of toys, they were found to use them non-creatively. The toys were predominantly used for possession and not for any creative manipulations during play situations.

For teenagers after the age of twelve, interest in toys begin to merge with those of adults. Their attention shifts to the use of sophisticated electronic games and computer based systems which are often considered as family entertainment rather than toys (Wright and Nomura, 1985).
Murphy, Carr and Callias (1986) were in favour of increasing toy play in children with profound mental retardation by making suitable adaptations in their design and accessibility.

The use of toys in children with special needs assumes special significance (Newson and Newson, 1979; Head, 1971). They serve both as a teaching aid (euphemism for ‘toys’) as well as a recreational device. Several factors have been identified as influencing the selection of toys for handicapped as well as normally developing preschool children, including developmental status, interests, sensory preferences, etc. (Fallon and Harris, 1989).

Lieber and Beckman (1991) noted that special adaptations are required in terms of safety, convenience in handling and economy of use when it comes to use of toys in individual as well as group play situations by children with various types of handicaps.

Martin, Brady and Williams (1991) investigated the use of toys on the social behaviour of preschool children in integrated and non-integrated groups. Results indicated that toys play a facilitation role in fostering prosocial behaviours with mild disabilities in integrated school settings. These results are close and similar to the findings of another study where the investigators attempted to determine the effects of social and isolate toys on the interactions and play of children in integrated and non-integrated educational settings. In
this study (Beckman and Kohl, 1984; Field et al, 1982; Fenrick, Pearson and Pepeinjak, 1984).

Malone and Langone (1999) observed variability in play of preschoolers with cognitive delays across different use of toy sets. They encouraged use of toys that facilitate make believe play rather than use of board games or tools that facilitate physical activity.

Michael, Malone and Melissa (2001) studied the perception of mothers about toy play in preschoolers of children with developmental disabilities. It was seen that the choice of toys by mothers for their children was minimal. Even when preferred, there were disparities in their optima use against the background of the interests and intellectual status of their children.

**REVIEW OF INDIAN STUDIES**

Ghosh (1967) developed a curriculum for educable and trainable children with mental retardation. The developed curriculum included a broad range of play activities, self care skills, communication and activities of daily living.

Jesudasan, Ambujadevi and Bhogle (1979) recognized sensory motor activities and play based interventions as important determinant for the motor and mental development of their sample of children kin their early childhood years.
Ember et al, (1979) used play activation procedures and techniques with success on a group of severely subnormal children. The actual procedures included sensory stimulation, motor activities, physical exercises, games and allied play activities. These findings are supported in another research carried out by Jiloha (1989).

Some researchers have noted how socio-cultural deprivation and deficient environmental stimulation through play or other non-formal activities can bring down the social quotients and levels of adaptive behaviours even in young children with or without mental retardation (Gunthey and Upadhyaya, 1982; Gunthey, 1981).

Kaushik (1984) outlined the need and importance of parent training through conduct of workshops on child rearing practices based on principles of behaviour modification for the benefit of developing programs for children with mental retardation. The content of the workshops included training in behavioural techniques for skill training as well as problem behaviour management for mentally retarded children in home settings.

Chhabria (1984) reported the benefits of participation of children with disabilities in a workshop that gave them hands on exposure and training in play and co-curricular activities. A comparison of their pre-participation and post participation talent scores showed a significant improvement in the children with disabilities.
Dutta, Das, and Talukdar (1984) made pioneering observations of play activities in a group of children with mental retardation in Indian settings. They reported presence of solitary play, non-rule based play, deficient toy play, and absence of symbolic or pretense of play in these children.

Dutta, Das, and Talukdar (1984) observed socialization, imitation and creativity in 12 mentally retarded Indian children with chronological ages between 9-12 years and mental ages between 4-8 years. Their results showed that the play behaviour of subjects was related to mental age rather than chronological age. The subjects played individually rather than in groups and were poor imitators. They showed little interest in experimenting with colors and clay. Males engaged in sex-typed play by shooting dolls with toy guns. Many subjects directed aggressive behaviour with toys.

Gopinath et al. (1987) attempted to correlate the duration of stay and work performance of mentally handicapped individuals in a day care centre. They found that there is an optimum period of stay that facilitates work performance. Beyond that period, individuals were reported to deteriorate in their work performance. Moreover, the investigators also observed that the sample of individuals, who combined their work with play or other extra curricular

Goel (1989) advocated the implementation of integrated education for children with disabilities. He pleaded for integration in terms of play, and allied
co-curricular activities for children with mild mental retardation rather than in the formal academic curriculum.

Venkatesan (2000) attempted a study to elicit parent reports of observations on play activities in their children with mental retardation. Data was collected on 70 cases by using a semi structured interview schedule and non directive techniques to seek information from parents on commonly observed activities and/or situations in play in their children with mental retardation. An analysis of results showed the existence of certain forms of play at the exclusion or decreased occurrence of others. The severity of mental retardation appears to be a significant variable in influencing various types of reported play. Among other things, the importance of impressing the caregivers on edutainment value of play for optima rehabilitation of mentally handicapped persons was emphasized in this study.

Venkatesan (2004) studied a sample of 140 preschool children diagnosed as cases of ‘developmental disabilities’. Information on hour wise engagement of each child was undertaken by the investigators. The results showed that the greatest part of the days schedule is spent by this sample of children on ‘sleeping’ (43.24%), followed by time spent at ‘school’ (for school going kids only)(14.41 %), on ‘feeding’ activities (10.34 %) and ‘watching television’ (9.61%) respectively. The amount of time spent on needed activity like ‘playing with peers’ (4.12 %) was meagre. In the case of autistic children,
the amount of time spent on sedentary or exclusion activities like ‘watching television’ (21.23 %) or ‘playing alone’ (14.6 %) almost doubled and ‘paying with peers’ (1.74 %) was almost reduced to half.

Venkatesan (2004) listed toys for three different age groups of children with developmental disabilities: Infant Toys (0-2 years); Toddler Toys (2-4 years) and Preschool Toys (4-6 years) respectively.

(a) Infant Toys included items like pen torch, bell, book, coloured bangles, face mask, mirror, small objects for pincer grasp, plastic ball, plastic nipple, rattles, soap wrappers, incense sticks, teddy bear, teether, toy drum, toy vehicles, xylophone, visual chimers, rocking horse, cradles, etc.

(b) Toddler Toys included items like binoculars, magnifying glass, earphone, tactile rug, zip, button frame, string, lock and key, nuts and bolts, bottles, wires and beads, needles, piggy box, rubber band, perforated sheets, sponge, flash cards, action pictures, 2-3 piece jigsaw puzzles, toy telephones, candles, balloons, whistle, mouth organ, straw toy vehicle, toy bat and ball, size, color and shape sorters, tactile rug, tricycle, kaleidoscope, rocking horse, etc.
Preschool Toys included items like blind fold, skipping rope, nail cutter, match box, needle and thread, safety pin, cello-tape, eraser and pencils, envelope and pencil sharpener, shoe lace, lock and key, punching machine, stapler, gem clips, sea shells, scissors, sponge, playing cards, chalk pieces, painting bushes, crayons, flashcards, 4-5 piece jigsaw puzzles, pocket calendar, money or currency, candle, carom board, ludo, snake and ladder, marbles, toy doll, pocket calculator, ABC Book, weight boxes, number cards, sketch pens, scale, tracing paper, dice, water colours, glue or gum, kitchen set, cloth clips, slate, table bell, size, colour and shape sorters, tricycle, tops and string, etc.

Khajevand and Venkatesan (2007) used a cross sectional observation and key informant interview to understand play behaviours of 3-12 year old children (n: 140) with mild and moderate mental retardation. The results indicate that play behaviour constitutes only 4.1% of the total time in the 24 hour activity cycle of a child with mental retardation. There is a significant time period ranging from 1-3 hours (8.4%) in a day, when these children are reported as performing ‘no activity at all’. The range of play peers varied from same age to younger age peers, senior citizens, pets and adults. The age and severity of mental retardation significantly influenced the duration of time spent by play peers. Majority of these children were passive observers of play by others without understanding the rules and regulations. They showed positive
behaviours like lover to share their belongings, to play materials with others, indulging in pretentious or imaginary play, showing empathy with peers, showing new toys to others or recognizing and preserving their own belongings, etc. Many of them showed difficulties in postponement of their wishes to meet the demands of the game situation, not registering spontaneous protest over foul play or breach of rules by mates in game situations, lacked the knack of maintaining ‘secrets’ in game situations or making limited use of toys.

Khajevand and Venkatesan (2007) attempted to develop and standardize a ‘Play Activity Checklist for Kids with Mental Retardation’ (PACK-MR). The final format of this 60 item checklist was drawn from an initial item pool of 300 items. It was administered on a sample of 140 children with mild and moderate mental retardation between chronological ages of 6-18 years and mental ages of 3-12 years. The sample included 71 boys and 69 girls. The results indicate that a sequential hierarchy exists in play activities of children proceeding from simple to complex, general to specific and/or concrete to abstract modes of play. It also proceeds from solitary and no-rule based play to social and rule based play activities. The range of play activities include search games, exercise activities, solitary or group play, toy or pet play, thinking, quizzing or questioning games, etc. The age and diagnostic condition of the child are significant variables in influencing the range and type of play activities in children with mental retardation. A two week test-retest reliability
coefficient for PACK-MR on a sub sample of 70 children is 0.99. Its concurrent validity against another standardized behaviour scale is high (r: 0.84). The developed tool is recommended for use in planning/programming play based intervention therapies for children with mental retardation.