CHAPTER 1

INTRODUCTION

1.1 IMPORTANCE OF THE STUDY OF MENTAL RETARDATION

How often does a school teacher complain that a particular student is so dull and slow that he tries her patience in the classroom. Or, a mother wonders when her 10-year-old child would learn to look after his daily needs and dress himself without her help. These phenomena of slowness, dullness and dependence are characteristic of mentally retarded children. But, unfortunately, in India, there is lack of strong awareness of the existence of this phenomenon and possible help available to such handicapped children.

It was not till the late 1950's that any attention in a small or big way was given to these children in India. Even in an advanced country like the U.S.A., the mentally retarded remained ignored for long, except for a few isolated institutions. The late President John F. Kennedy awakened his country to help the mentally retarded, and today numerous special schools, counselling and research centres cater to the needs of this long neglected group of the society.
Over the last twenty-odd years our country has gradually increased its attention to this group which is perhaps the only one in those of the suffering human beings to have remained outside the circle of public and professional concern.

Mental retardation is as much a psychological problem as it is a medical, social, cultural and national one. It is found in every form of society, class, caste and creed. The unfathomable misery and suffering of all kinds experienced by the child’s parents and others who care for him have a great impact on his upbringing.

A medical diagnosis and labelling does not bring a note of finality to a mentally retarded child’s future. The hope to improve his lot is always there and with research on the increase, his chances to continue as a burden on his society are gradually decreasing.

During the last two decades, educators in this country have devoted an appreciable amount of time to the study of mental retardation, providing them with special education. Much research work carried out in this subject is reported in the Indian Journal of Mental Retardation, which is published by the All India Association on Mental Retardation. As the mentally retarded child has difficulty in learning and assimilating new information, techniques to teach him at his pace are developed and
newer methods of teaching are being studied. It is important that he be taught as much and as fast as he can learn to alleviate his and his people's misery, and to become less dependent on others and to become a useful member of the society.

It is equally important to counsel the child's parents regarding their attitude toward, and mode of upbringing of such a child. Parents are often shocked and find it incredible to hear the doctor state that their child is mentally retarded. They often have ambivalent feelings and a sense of guilt regarding such an offspring. They generally suffer from anxiety, tension and frustration as they realize their responsibility to care for this child all his life. It is essential to help these parents to develop the right attitude which would be congenial for the upbringing of their child in a way which would be most appropriate for him to learn self-help and some form of discipline in society.

Besides this, the attitude of the society towards mental retardation must be modified and the horizon widened with the understanding of this phenomenon. This would help in the rehabilitation programmes for the mentally retarded. With these ends in view, the interested workers must disclose to the society all the information available regarding mental retardation and continue to find more.
Interested in the study of mental retardation are social workers, doctors, geneticists, psychologists, sociologists, educators and others. Contingent upon his field of interest each has perceived mental retardation and developed his own definition, classification and terminology. Hence the variety in terminology: amentia, mental deficiency, feeble-mindedness and finally, mental retardation. In the following section will be considered the different definitions of mental retardation.

1.2 DEFINITION OF MENTAL RETARDATION

Mental retardation has been defined from various angles. Popularly it is known to be condition where the individual's intelligence is below normal and hence his behaviour is affected in all possible walks of life.

Legal definition: The British Act on Mental Deficiency (1927) defines 'mental defectiveness' as being 'a condition of arrested or incomplete development of mind, existing before the age of eighteen years, whether arising from inherent causes or induced by diseases or injury.' India does not have a separate legal definition but follows the British one.

Medical definition: From the medical point of view it is a 'condition of arrested or incomplete mental development induced by disease or injury before adolescence or arising from genetic causes.' Royce\(^2\) adds that it is a condition of inferior intelligence due to defective development in the cerebro-spinal system which is mostly unpreventable and incurable, 'incurable' meaning that the child learns 'at a slow rate.' Both these definitions are medically biassed. Tredgold\(^4\) has given a medico-legal definition wherein he states, 'mental deficiency or amentia, then, is a condition in which mind has failed to reach complete or normal development.' The mental development is incomplete to such an extent as it renders the individual incapable of adapting himself to the normal environment of his fellows so that he may maintain an existence independent of supervision, control or external support.

Psycho-social definition: Dybwad\(^5\) defined mental retardation emphasizing the social inadequacy resulting from a condition originating during the developmental period marked by sub-average intellectual functioning.

Doll\textsuperscript{6} elaborated this stand into six categories wherein a mentally deficient person is ' (i) socially incompetent, that is, socially inadequate and occupationally incompetent to manage his own affairs; (ii) mentally subnormal; (iii) retarded intellectually from birth or early age; (iv) retarded at maturity; (v) mentally deficient as a result of constitutional origin through heredity or diseases; and (vi) essentially incurable.' He explains the condition being 'essentially incurable through treatment and unremediable through training except as treatment and training instill habits which superficially or temporarily compensate for the limitations of the person so affected while under favourable circumstances and for more or less limited periods of time,'

\textbf{Educational definition:} Ingram\textsuperscript{7} has defined mental retardation from the educational point of view. The term slow learner is used 'for any child who cannot meet average grade academic standards year by year.' This group measures 50 to 89 IQ on standardized individual scales of intelligence. This forms the 'borderline and mild retardation' categories. The mentally retarded with IQs between 50 and 75 form the lowest 2% of the school population in learning ability. This definition has taken only the child's academic learning ability into consideration.


Psychological definition: The definition which may be considered to give the most overall concept of mental retardation is given by Heber and is published by the American Association on Mental Deficiency. According to this, "mental retardation refers to sub-average general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior."

This definition differs from those mentioned before in that it stresses the origin of mental retardation at the developmental period as against the impairment following damages and injuries at a later age. It seeks to diagnose the mental status which should be a description of the present behaviour.

One of the characteristics of this definition is the 'exclusion of both the cause and probable course of the behavioural disorder.' It has avoided the medical and etiological aspect of mental retardation, and does not refer to prognosis. It essentially emphasizes the symptoms.

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The diagnostician's classification of an individual into the broad category of the mentally retarded is not contingent on case history or his best predictions of the final outcome. It is sometimes necessary to rely on case history to 'determine if the retardation originated during the developmental period.' This would be the case in the diagnosis of adults. 'The diagnosis of mental retardation does not imply that the retarded person will always be incapable of either average intellectual functioning or unimpaired behaviour.' This is to say that the condition is not defined as irreversible.

This definition categorizes as subnormal all those who fall one SD below the general population on test of general intelligence. With the SD being 16 (Stanford-Binet 1960 revision) or 15 points (Wechsler Children's Scale), the cut-off points would be 84 and 85 respectively. The limits would differ with the size of the SD on other instruments.

Perhaps the most important feature of this definition is that it emphasizes the co-existence of deficiencies in both adaptive behaviour and general intelligence. In determining the basis for mental retardation, the weight has oscillated between measured intelligence and adaptive behaviour. In a way, the principal index to mental retardation is still intelligence. If an individual's intellectual level is sub-average, but his
adaptive behaviour is unimpaired then 'the assumption is that his adaptive behaviour reflects a higher level of intelligence'\textsuperscript{10} and the intelligence tests are doubted. If the individual is not intellectually sub-average, but his adaptive behaviour is impaired, then it will have to be assumed that factors other than intelligence are responsible for the impairment in adaptive behaviour. This definition, therefore, 'provides a double-check on impaired intellectual functioning.'\textsuperscript{11}

This definition was followed by one forwarded by Grossman in which he defined mental retardation as being a 'significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested during the developmental period.'\textsuperscript{12} The important point to be noted is the co-existence, of subnormal intelligence and deficient social adaptability.

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10 Ibid.
11 Ibid.
1.3 INTELLECTUAL DEVELOPMENT

A brief review of the definition of intelligence is deemed necessary before the intellectual development is understood.

The British Royal Commission stated that 'the intelligent person was one who was capable of competing on equal terms with his fellow men and who could manage himself and his affairs with normal prudence.'\textsuperscript{13} Here "managing of affairs" is not the same for all individuals.

Among the early investigators was Ebbinghaus\textsuperscript{14} according to whom intelligence comprised of the ability to integrate the 'elements of experience.' Binet\textsuperscript{15} emphasized judgment as the sole factor of intelligence. This included factors like memory, reason, ability to compare, comprehension, use of numbers, combination of objects into meaningful whole and knowledge of common events.

\textsuperscript{15} A. Binet, "Nouvelle recherches sur la mesur du niveau intellectual chez les enfants," \textit{Annee psychologique}, 1908, 14, pp. 1-19. Cited by Dorcus and Shaffer, loc. cit.
Thorndike's\textsuperscript{16} definition stressed the sum-total of specific abilities while Stern\textsuperscript{17} defined intelligence as "a general capacity of an individual consciously to adjust his thinking to new acquirements --- it is general mental adaptability to new problems and conditions of life."

This leads to the two-factor theory given by Spearman\textsuperscript{18} where he discriminates between the general ability (G) and the specific abilities (S). G is common to all tasks while S is always specific to a given task. For example, in arithmetic and vocabulary tests, besides G, the tests also draw on specific numerical and verbal abilities. The greater the amount of G in any two functions, the higher the correlation. The presence of S tends to lower the correlation.

Anstey\textsuperscript{19} emphasizes the ability or capacity to use one's past experience in the solution of new problems. By "new" problems he means those which cannot be solved by just the application of past experiences without fresh


\textsuperscript{17} W. Stern, \textit{The Psychological Method of Measuring Intelligence}. Warwick and York, 1914. Cited by Dorcus and Shaffer, \textit{loc. cit.}


thought. This indicates that intelligence cannot operate in vacuum but is influenced by experience. By referring to 'new' problems he has distinguished acquired knowledge from intellectual ability.

Burt\textsuperscript{20} opined that 'the best criterion of intelligence is the child's power to perceive logical relations — relations such as those of similarity, of difference, of contrast (the relation expressed by such conjunctions as "since" and "therefore") of relevance, of fitness and the like.'

Wechsler\textsuperscript{21} gave a holistic view to intelligence when he said that 'intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.' It is global because it characterizes the individual's behaviour as a whole; it is an aggregate because it is composed of elements or abilities which, though not entirely independent, are qualitatively differentiable. Intelligence is evaluated by the measurement of these abilities.


\textsuperscript{21} D. Wechsler, \textit{The Measurement and Appraisal of Adult Intelligence}, The Williams & Wilkins, 1958, p. 7.
though 'intelligence is not identical with the mere sum of these abilities however inclusive.' This is because:

1. the ultimate products of intelligent behaviour are not only a function of the number of abilities or their qualities, but also of the way in which they are combined, i.e., upon their configuration,

2. factors other than intellectual ability, for example, those of drive and incentive, enter into intelligent behaviour,

3. finally while different orders of intelligent behaviour may require varying degrees of intellectual ability, an excess of any given ability may add relatively little to the effectiveness of the behaviour as a whole. It would seem that, so far as general intelligence is concerned, intellectual ability per se merely enters as a necessary minimum.

Guilford\textsuperscript{22} has presented a unique interpretation of intelligence in broadly classifying it into three components: operations, contents and products. Operations consist of cognition, memory, divergent production, convergent production and evaluation. Cognition involves the ability to label or name the change in the external stimuli, the environment, accurately. Memory is the ability to remember information. Divergent production refers to the individual's capacity to hypothesize variedly in problem situations. Convergent production includes the grouping of divergent ideas to form a unit. Evaluation is the ability to decide about a problem and to estimate the quality of the decision.

These five basic cognitive processes can be applied to four different kinds of contents: figures, symbols (letters and numbers), semantics (meaning of words and sentences) and behaviours. The cognitive processes cooperate with each of these contents with different success. Some people are more intelligent with numbers, others with words and so on.

The five processes or operations act on the four contexts to produce one of the six products: units (a single word or idea), classes (a concept representing a set of units), relations (a relationship between or among units or classes), systems (sequentially organized ideas), transformations (a change of a unit or class) and implications (prognosis).

Guilford has presented this interpretation diagrammatically in a three dimensional model (5 x 4 x 6) with 120 cells 'each cell representing a unique intellectual ability.' This theoretical model itself is an example of convergent cognitive process with semantic content and a system as a product.23

With these definitions of intelligence in mind, it would be relevant to consider the development of intelligence. If the rate of development is slow and the terminal development is lesser than normal, the child would then function at a subaverage intellectual level.

1.3.1 Jean Piaget's Theory of Intellectual Development

Jean Piaget's definition of and intensive work on intelligence is fast gaining the attention of the world of psychology. Intellectual activities, according to him, are adaptive and they function in the individual's adaptation to his environment. He views intelligence as being the most basic characteristic of all living matter, and that the adaptive properties of intelligence form a special case of the manifestation of this all-important principle. It is seen as an aspect of biological adaptation, of coping with environment and of organizing and reorganizing thought and action.

Adaptation is concerned with the balance between the organism and his environment. This is a very active process.

24 Ibid., pp. 449-455
where the organism is constantly being moulded by his
environment which he in turn moulds. This process involves
an interaction between assimilation and accommodation which
are discussed in his theory comprising of broad periods or
stages.

Like other theorists, Piaget also believes that
intelligence includes the capacity to learn. But unlike
others who have been interested in the content of intelli-
gence, he has emphasized the functions and structure which
underlie intelligent activity. His theory of intelligence,
which is developmental in its orientation is discussed
briefly below, stage by stage.

**Sensorimotor stage**: (0 to 18 months of life). This
is the period before the child learns language. Piaget
opines that a child's intelligence is manifest in his
actions. From birth to one month, the child practises the
built-in reflexes (schemas, as Piaget calls them). From
1 to 4 months the schemas undergo changes and the primary
reactions are centered in the infant's body rather than
being directed toward any external objects that he comes in
contact with. Assimilation and accommodation now become
slightly more differentiable than before. Assimilation is
the process by which the child adapts a new stimulus into
the already existing schemata. Accommodation is the adapta-
tion of the child's schemata to his environment. From 4 to
8 months, the child is concerned about the effect of his
actions on his environment. Thus, the child who used to simply grasp, touch, look and listen, now swings, strikes, rubs and shakes objects. From 8 to 12 months the child becomes more conscious of the world outside himself. He anticipates what is to come and tries to affect the future. This is the beginning of the use of signs or signals, as is evident when the child cries upon seeing his mother prepare to go outdoor. The mother's behaviour is the sign to which he reacts by crying, trying to stop her departing. From 12 to 18 months he experiments with the objects in the environment through trial-and-error. Alteration of the older response patterns to fit the new situation (i.e. accommodation) is the essence of intelligence according to Piaget.

**Pre-operational stage**: (18 months to 7 years). At this stage the child learns to symbolize. A block of wood stands for a car, a stick for a candle and so on. The main characteristic of this stage is the ability to symbolize, knowing the object which symbolizes the actual. Now, the child can understand swiftly the distinct events which are separate in space and time. He is capable of pursuing the truth; is aware of his own thoughts; can think of the past, the present and the future and understand the real and the hypothetical. For the first time, he can share with others. Language is an extremely important aspect of the conceptual development but it is not the sole basis. The child in this
stage cannot take others' views. He cannot consider things from the other's view. He is essentially ego-centric according to Piaget.

Stage of concrete operations : (7 to 12 years). The difference between the pre-operational child and that during this stage is that the latter possesses well-organized cognitive systems which help him deal more effectively with his environment.

The 5-year-old who walks to the neighbourhood stores cannot trace the route there on paper which a 7-year-old can. This is because, according to Piaget, the former lacks the mental representation of the sequence of his actions. Another limitation of the pre-operational stage is the absence of the operation of conservation. If two equally weighing blocks of clay are placed before the child, and if one of them is flattened to a square in his presence, the pre-operational child will say that the taller of the two contains more clay. The 7-year-old insists that the two pieces are equal, being aware of the compensatory dimensions of width and depth. This is the conservation of quantity of which the child of seven is aware.

The pre-operational child cannot conceive the term of relationship of a 'brother', 'left side', 'darker' and so on. Nor can he reason simultaneously part of the whole and whole. The 5-year-old is likely to answer 'more yellow
candies' when 8 yellow and 4 brown candies are placed together and asked if there were more yellow candies or more candies. The pre-operational child, likewise, cannot serialize objects according to height, length, weight, etc.

The 7-year-old has learnt that length, mass, weight and the number remain constant despite any external changes. In other words he has learnt some central rules to help adapt to his environment.

Stage of formal operations: (age 12 onwards).
Though the cognitive systems developed in the preceding stage help him to deal effectively with a wide variety of problems, he cannot still work with efficiency with the abstract in the theoretical. In the concrete operational stage the starting point was always the real as opposed to the hypothetical or possible which is the point of departure in the formal operational stage. This stage is fundamentally an orientation toward problem-solving, systematically exploring through hypotheses. The adolescent is now aware of his own thoughts and of what he knows. Being pre-occupied by a thought is the main characteristic of the formal operational stage, according to Piaget.

26 Murcen et al. loc. cit.
1.3.2 Implication of Piaget's Theory for the Mentally Retarded

Mary Woodward\textsuperscript{27} studied the severely retarded children's behaviour and found that Piaget's theory of sensori-motor development for normal children is applicable to the mentally retarded children also.

One of the important aspects of Piaget's theory is that attention has now shifted from what the mentally retarded child is not to what he is. This must help the entire field of mental retardation and the retarded children themselves. The periods particularly relevant to this field are those of sensori-motor and concrete-operational. As intellectual development is a process marked by progressive disappearance of earlier thought systems to be replaced by new, higher-order systems, Piaget thinks that mental retardation is the result of the child's failure to go beyond the inferior levels or stages of integration. The lower the level of organization, greater the degree of retardation.

In her system of classification, Inhelder\textsuperscript{28} viewed the 'idiot' (or the severely and profoundly retarded) adult as functioning at the sensori-motor intelligence


level; the 'imbecile' (or the moderately retarded) adult as fixated at the pre-operational level; the 'moron' (or the mildly retarded) adult as unable to progress beyond the level of concrete operational and the borderline adult as being in a position to use the simpler forms of formal operations.

1.4 SOCIAL DEVELOPMENT

The newborn begins life with very few emotions. But within the first year he learns to love, fear and dislike the people in whose contact he comes. The main person is his mother around whom his young world revolves. His future capacity to build and maintain relations with people is largely influenced by the learning in this early stage of social development.

The infant gradually learns to attain independence and self-sufficiency. Self-help in eating, dressing and in general, self-direction, occupation, communication, locomotion and socialization have been deemed important characteristics of social maturity by Doll. Social maturity, therefore, refers to the sequential development in self-help


skills in infancy like crawling, sitting, standing, walking, habit training and interaction with peer groups during childhood.

During the first month the infant responds to very few external social stimuli. Head sags and the hands are fisted and the infant looks at people. By fourth month, his head is steady, hands are open, he looks at a rattle in his hand, vocalizes socially and can recognize the milk bottle. By seventh month he sits leaning forward on hands, grasps a cube, listens to his own vocalizations and plays with feet and toys. By the tenth month, he can sit up alone, can say a word and head his name, and feed himself a cracker. At one year, he walks with help, pulls himself upright, drinks from a cup or glass assisted, talks a few words, demands personal attention and follows simple instructions. Before his second birthday, he walks about the room unattended, marks with pencil or crayon, plays with other children, uses names of familiar objects and talks in short sentences. Between his 2nd and 3rd birthdays he has learnt to build a tower of 10 cubes, talks in sentences, can put on his shoes; he plays on his own, removes some of his untied clothes, can wear coats unassisted. He is now able to relate experience. By four years he plays cooperatively with children; can skip on one foot and goes on small errands.
Between the years four and five, he displays a sympathetic behaviour towards children of his age-group, and plays competitive games. He cares for himself at toilet, goes about his neighbourhood unattended and dresses himself unassisted. By seven years he can be trusted with money, he can print simple words and play simple indoor games. He can also go to school unattended now.

By his 7th birthday, he bathes without supervision, helps in the house and plays organized group games. Before his 8th birth day he can read the clock correctly to the nearest quarter and uses the clock for practical purposes. By 10 years of age he can go about his home community freely, alone or with friends. He looks after his own needs, buys useful articles himself with or without directions from adults. He runs useful errands, carries messages correctly. He likes to read children's books too. By eleven, he can write and post short letters occasionally, on his own initiative. He is seen to be a little creative now. Twelve years onwards, he makes himself more independent and responsible at home and outside. By mid-teens he is a member of clubs and various groups, interested in opposite sex and entertains guests at home.

These above stages are seen in the social development of a child in our modern society. With the application of these norms, any child can be compared to his appropriate age norm and his developmental status be determined. To
find out the retardation in development, Gesell et al. give the following formula:

\[ \text{DQ} = \frac{\text{MA}}{\text{CA}} \times 100 \]

(DQ: Developmental Quotient; MA Maturity Age; CA Chronological Age). For example: if a 12-week-old child shows the development of an eight-week-old child, his DQ would be 67.

\[
\frac{8 \text{ weeks}}{12 \text{ weeks}} \times 100 = 66.66 \approx 67 \quad \text{(after rounding up)}
\]

Here 100 is the mean or average for the general population.

1.5 **CRITERIA AND CLASSIFICATION OF MENTAL RETARDATION**

In turning the attention to the classification of mental retardation it should be borne in mind that classification is purposive. Here the heterogeneous characteristics of etiology, present status and behavioural trends are grouped into classes. The boundaries existing in nature are not as rigid and clearly defined as may be attempted for convenience. In fact, classification imposes those boundaries which may not exist at all. There

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31 *Ibid.*, p. 113
is a graded continuum from the genius to the idiot.

As classification has a purpose, it may have an educational bias or an etiological inclination, which indicates that the systems of classification of mental retardation 'are frequently arbitrary, overlapping or even mutually exclusive or contradictory.'\(^{32}\)

The different systems of classification shall be considered in brief.

1.5.1 Legal Classification in England\(^{33}\)

The law in England classifies the mentally retarded into four categories:

(i) Idiots are those persons whose mental defective-ness renders them unable to protect themselves against common physical dangers.

(ii) Imbeciles are those who are not as helpless as the idiots yet whose mental defectiveness leaves them incapable of managing themselves and their affairs or of being thought to do so.

(iii) Feeble-minded persons are those who require care, supervision and control for their and others' protection.

(iv) Moral defectives are those whose mental defectiveness is accompanied by strongly vicious or criminal propensities requiring supervision and care for others' protection.

\(^{32}\) A.M. Clarke, "Criteria and Classification of Mental Deficiency". In Clarke, and Clarke, (eds.) Mental Deficiency: A Changing Outlook. Methuen, 1956, p. 44.

\(^{33}\) Ibid., pp. 45-46.
This does not give any definite criterion of classifying mental retardation. It is very vague and far from being scientific.

1.5.2 Classification According to IQ

With the advent of the testing movement in the last century came the great contribution to the field of psychometry by Binet and Simon who introduced the concept of mental age (M.A.). The child whose performance on a test is equal to that of a large number of children of a given age possesses the mental age of the said reference group. For example, the child who passes all the items on a test for 8-year-old children and no more, is mentally 8 years of age irrespective of his chronological age. That is, he is able to do test items which 50 to 70 percent, of 8-year-olds can pass. If an 8-year-old has an M.A. of 10, then his ratio of mental age to chronological age is 1.2. But if he passes the items till the 6-year-old level only, the ratio is 0.75. The unit to measure intelligence was introduced by a German psychologist, Stern, who multiplied this ratio by 100 and called it an intelligence quotient. The formula is:

\[ \text{IQ} = \frac{\text{MA}}{\text{CA}} \times 100 \]

(IQ: Intelligence Quotient; MA: Mental Age; CA: Chronological Age).
An IQ is an index of the mental status of an individual. The greater the IQ, the greater will be the range of behaviour. That is to say, the greater the retardation the narrower the range of behaviour. To illustrate: a child with an IQ of 25 has a very narrow range of behaviour and it is not very significant what his environment is like, though the attitude of those around him and the quality of care given to him affect his behaviour to some extent. But when a child has an IQ of 70, this information of his intellectual status must be supplemented by information regarding his environment, his ability to learn, his skills, his other problems and daily activities.

**Distribution of intelligence**. It is an assumption from the early days that intelligence is normally distributed in the population with the majority of the people being of medium or near average intelligence.

If the distribution of intelligence is plotted on a graph, the curve would resemble a bell. This would indicate that the concentration of intelligence is most around the centre and tapers off from the central high point to the left and right. There are relatively few measures at the lower end of the scale; a gradual increase till the maximum at the centre, and then a progressive fall toward the higher end of the scale. If a line perpendicular to the X axis is

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drawn from the central position, the two parts would be very nearly equal in area. Measurements of many natural phenomena and of social and mental traits tend to be distributed symmetrically about their means (averages).

**TABLE I-1**

**CLASSIFICATION OF INTELLIGENCE**

<table>
<thead>
<tr>
<th>IQ</th>
<th>Classification</th>
<th>Percent included</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 &amp; above</td>
<td>Very Superior</td>
<td>2.2</td>
</tr>
<tr>
<td>120 - 129</td>
<td>Superior</td>
<td>6.7</td>
</tr>
<tr>
<td>110 - 119</td>
<td>Bright Normal</td>
<td>16.1</td>
</tr>
<tr>
<td>90 - 109</td>
<td>Average</td>
<td>50.0</td>
</tr>
<tr>
<td>80 - 89</td>
<td>Dull Normal</td>
<td>16.1</td>
</tr>
<tr>
<td>70 - 79</td>
<td>Borderline</td>
<td>6.7</td>
</tr>
<tr>
<td>55 - 69</td>
<td>Mild</td>
<td>)</td>
</tr>
<tr>
<td>40 - 54</td>
<td>Moderate</td>
<td>)</td>
</tr>
<tr>
<td>25 - 39</td>
<td>Severe</td>
<td>)</td>
</tr>
<tr>
<td>Below 25</td>
<td>Profound</td>
<td>)</td>
</tr>
</tbody>
</table>


From the above table, it can be seen that the mentally retarded persons comprise only 2.2 % of the general population.
The limitation of IQ classification is the variability of IQ from test to test which shows that IQ is not the sole criterion of mental retardation.

**Variation of IQ from test to test.** The same IQ on different tests does not carry the same meaning. If a hypothetical test has a standard deviation of 25 points with the mean as 100, then the normal distribution curve would show 68 percent of the population (+1 SD) to lie between IQs 75 and 125; 32 percent would lie below and above this range. But a test with a same mean and a standard deviation of 16 points would show 68 percent people lying between IQs 84 and 116 and 32 percent below and above this range. A score of -2 standard deviations on the first illustration would have an IQ of 50 while on the second an IQ of 68. So the IQ on one test cannot be compared with that on another without corrections.

Besides this, IQs vary from test to test because of the differences in the abilities being tested by the different tests. A test may be heavily loaded in the verbal factor (e.g. Stanford-Binet Revised, 1960). Another may be entirely based on non-verbal reasoning (e.g. Raven's Progressive
Matrices). A person may have a low IQ score on the Stanford-Binet because he is not very good in the English language. However, he may score high on a non-verbal test like the Progressive Matrices. Hence, his low score on Stanford-Binet may classify him as of average intelligence while that on the other test may give him the status of superior intelligence.

These considerations are very important in classifying intelligence because of the serious consequences of labelling a person 'sub-normal'.

In this system, the IQ obtained by the individual on any standardized test of intelligence determines his mental status. A great many psychologists and psychiatrists have used the IQ as the criterion for diagnosing the mentally defective. The A.A.M.D.'s classification\(^{35}\) based on IQ is most widely accepted and employed. The IQs mentioned are generally in reference to tests with standard deviations of 15 and 16 points from the mean.

The IQ must not be accepted as the sole criterion of mental retardation as even the most perfectly standardized tests of intelligence are subject to some degree of error.

\(^{35}\) Ibid., p.50.
This criticism is important in view of the fact that mental retardation has been defined by some as irreversible. Intelligence test scores show fluctuation though they are relatively constant. If mental retardation is defined as an irreversible condition, then the IQ which varies cannot be used as the sole criterion for diagnosis.\(^{36}\)

Anastasi\(^{37}\) has said that an IQ indicates an individual's performance or ability level at a given point of time, in relation to his age norms, but tells us nothing about his ability to deal with his environment or to learn.\(^{38}\)

Having an arbitrary dividing line between the normals and the sub-normals classifies in the latter some who may be socially competent and in the former those who may not be so.

Similarly, social incompetency as the sole criterion as suggested by Tredgold, will have to be rejected. A number of psychopaths, neurotics and criminals will be categorized as mentally deficient according to this system. The standards of a satisfactory social adjustment are arbitrary and vary from one society to another. Hence, it is difficult to include some individuals and to exclude

\(^{36}\) Brison, \textit{op. cit.}, p. 3.  
\(^{37}\) Anastasi, \textit{op. cit.}, p. 237.  
\(^{38}\) A.M. Clarke, \textit{op. cit.}, p. 59.
others with the same IQ as being mentally deficient under this classification system.

1.5.3 Classification According to Aetiology

The causative factors of mental retardation have played an important role in classification, more so for the physicians. Primary mental deficiency, also known as endogenous or hereditary mental deficiency, is a case where the defect is inherited. This includes congenital cases where the anomalies occur at the time of conception and are easily identified at birth. The secondary or exogenous amentia includes those defects which are acquired as a result of brain injury before, during or after birth. A mixed form of aetiology is produced when the extrahereditary influences combine with poor genetic endowment. 39

1.5.4 Classification According to Clinical Types

The term 'clinical types' refers to the mentally retarded persons who possess... certain anatomical, physiognomical or pathological features which are sufficiently pronounced to enable them to be placed in special categories... 40 This system 41 includes the

40 Tredgold, op. cit., p. 199
41 Dorcus and Shaffer, op. cit., p. 504.
anomalies caused by endocrinal imbalance like **cretinism**
where there is a deficiency of thyroxin. **Hypothyroidism**
is caused by atrophy of the thyroid gland, and is
recognizable as early as six months of age. Cretins are
usually idiots or low grade imbeciles who have poorly
proportioned physical growth with uncoordinated motor
behaviour. **Hydrocephalus** is another clinical type which
is caused by the increase in the cerebral fluid which
results in a large head. The precipitating cause could
be meningitis, syphilis, toxic factors, tubercular
tumours; generally, death is early, the victims ranging
from lowest grade idiots to normals. Another case of large
heads is the **macrocephalic** whose brain tissues have
increased. **Microcephalics** are characterised by a small
head and are classified as imbeciles. The features of
mongols are flat face and flat occipital region, with
slit-like eyes. Usually mongoloids fall into the severe
and moderate categories.

1.5.5 **Classification for Educational Purposes**

For educational purposes, the mentally retarded
have been classified into three major categories.\(^\text{42}\)

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\(^{42}\) Robinson and Robinson, *op. cit.*, pp. 461-463.
**Educable**: This group's IQ falls between 50 and 75. They can generally reach third grade in school and occasionally the sixth grade by the school-leaving age. As adults they could be expected to be capable of unskilled and semi-skilled work and to be socially adequate.

**Trainable**: This group comprises of children with IQs between 25 and 49. They do not, as a rule, display any capacity to learn useful academic skills. They require care and supervision by family or state.

**Custodial**: This group is one which needs compulsory institutionalization as it functions at the profoundly retarded level.

These three categories are also termed moron (high-grade), imbecile (mid-grade) and idiot (low-grade), respectively. This is the current classification practice in education in the U.S.A.

Cruickshank has advocated another system of classification where he includes one more category at the higher level: the slow learner. These children have an IQ between 80 and 95. Two other terms he suggested are

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'mentally handicapped' (IQ between 55 or 60 and 80) and is synonymous with 'educable', except that its upper and lower limits are higher than those of the latter. He has termed the group with IQs between 30 and 55-60 as 'mentally deficient'.

Increased emphasis is given to the social and academic problems of children with low-normal IQs. The educational classification does not, as a rule, adhere to the IQs only. The IQ serves only as a guideline for the programme designer for the children.

1.6 CHARACTERISTICS OF MENTAL RETARDATION

At the outset, mental retardation is diagnosed by the child's performance on any well-standardized individual test of intelligence. A performance on Stanford-Binet Test (1960) yields a mental age and a DIQ while that on Wechsler's test, which is a battery of sub-tests, yields a DIQ (deviation IQ). Accordingly, the child is classified as being 'normal' or 'sub-normal'. Sub-normality, as seen earlier is further divided into four categories. Each category has its discriminating characteristics.

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44 Doll, op. cit., pp. 867-875.
1.6.1 Profound Mental Retardation (IQ below 20)

This category comprises of 1 percent of the mentally retarded population (excluding the borderline cases). These individuals usually have considerable central nervous system impairment. Organic pathology is also present to a great extent. Simultaneously present are other types of handicaps like blindness, deafness, mutism, epilepsy and gross physical anomalies. Motor development is very poor; repetitive behaviour of rocking, banging head, biting of hand and lips are observed.

Most of these individuals need custodial care. Many are bedfast all their lives. They cannot benefit from any form of education and can master only the simplest tasks.

Their health and resistance is very low and therefore, their life expectancy is short. Although they show a marked impairment of intellectual functioning, they may have some particular area highly developed. These individuals are then called 'idiot savants'. Some of them have exceptional memory for numbers or dates or a high musical talent. 46 A study of digit span of idiot savants by Spitz and La Fontaine 47 showed that their mean digit span was

significantly longer than that of other retarded subjects and not significantly different from that of non-retarded subjects. But such unusual talents are rare.

1.6.2 Severe Mental Retardation (IQ 20-35)

The incidence of this type is 3.5 percent of the population of the mentally retarded. This group presents some of the characteristics of the profoundly mentally retarded, but to a lesser degree.

Many individuals suffer from damage to the central nervous system as well as organic pathology and handicaps. Their motor and speech developments are retarded; sensory defects and motor handicaps are common. They are not totally dependent in their life-time but many require intensive and extensive medical care, and also life-long supervision and support.

These individuals can develop to limited extents some personal hygiene and self-help skills. With intensive prolonged training they can function under supervision in sheltered workshops as adults.

1.6.3 Moderate Mental Retardation (IQ 36-51)

This group forms 6 percent of the population of the mentally retarded. The neuro-pathological conditions are less complicated than in the earlier categories. A few of the other types of handicaps are present. They appear
clumsy physically and suffer from bodily deformities and poor motor co-ordination.

This category is also called 'trainable'. With sufficient care and early training they can develop self-help skills in toileting, feeding and bathing. Acceptable social behaviour and economic usefulness in a family or other sheltered environment can be attained.

A few can attain the third grade in school; the brighter ones can be taught to read and write a little; some can learn to speak fairly well. Yet the rate of learning is relatively slow. A study by House and Zeaman conducted on moderately to severely retarded children indicates that these children tend to learn visual discrimination more slowly than do normal children and more so than do even monkeys.48

In adult life the moderately retarded individuals attain mental age between 4 to 7 years. Most of them require frequent supervision and guidance in many of the social and personal problems.

1.6.4 **Mild Mental Retardation** (IQ 52-67)

Excluding the borderline cases of mental retardation (IQ above 70 and below 85), the mildly mentally retarded group comprises the largest percentage of the population of the mentally retarded (89%). They are slow in the development of walking, talking, feeding themselves and toilet training and approach the low average regarding their physical characteristics. Other handicaps are present in a higher frequency than in the general average population. Their eye-hand co-ordination is retarded, below normal expectancy, though the motor development is relatively normal.

Research regarding the learning ability indicates that this group can organize and discriminate between items in short-term memory. A mild retardate is not identified till after a year or two of regular school experience.

As adults, they attain a mental level equal to that of an average 8-11-year-old child. Social adjustment is comparable to that of an adolescent, though they lack the normal adolescent's imagination and judgment. They profit from systematic training. With early diagnosis and

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educational and parental assistance, this group can adjust socially and master simple academic and occupational skills, arts and crafts. This group is also called 'educable'. They can, with sufficient attention and training, be taught to become capable of sustaining themselves with minimal training.

1.7 STATEMENT OF THE PROBLEM

From the above discussion of mental retardation, it can be seen that diagnosis of mental retardation cannot be made on the basis of any single criterion. But while determining an individual's status of mental development, his mental age, IQ, social maturity, educability and developmental history must be taken into account.

The present worker has undertaken to construct tools to measure intelligence and social maturity of the mentally retarded children between the ages of 5 and 10 years. The purpose of these tools is to help diagnosis and classification of mental retardation. The tools would be useful in institutions for children, especially for the mentally retarded. Most of the schools and institutes in Maharashtra still use tests standardized about 30 years ago, e.g. Kamat's Test of Intelligence, while others use Bhatia's Battery of Performance Tests of Intelligence which is meant for children between the ages of 11 and 16 years. This is found to be so because of the lack of availability of tests
standardized locally for the required purposes. Hence, the present construction and standardization of tools to enable professional workers to assess their students and clients in respect of mental retardation.

1.8 SUMMARY

The study of mental retardation is as important as any other subject in psychology. But this particular field had been least studied till the recent times. The mentally retarded have been neglected for long, but in the last few decades, even in India, there has been an awakening and workers are steering their interests and efforts in the direction of improving the conditions for the retarded. It is, however, essential to understand the phenomenon. To identify the mentally retarded, various scales or tests are used where the retarded individual is seen to perform below average. A mentally sub-normal person performs below average both intellectually and socially. His mental and social development is impaired at the developmental period itself. There are four categories of subnormality and each of them is characterized by certain capacities which helps in the classification problem. As intellectual subnormality is not the sole criterion of mental retardation, IQ and social maturity are considered together for purposes of identification and classification. In Maharashtra, the tests used for assessment of intelligence are either too old or not
suitable for the mentally retarded. In view of this, the need for new tools to assess intelligence and social maturity is keenly felt and these are being constructed and standardized under this programme.