



Audio-visual learning: An effective curriculum for the metaphysical persons

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Abstract

Mental Retardation is a developmental disability which first appears among the children between age group of 1 to 18 years. The intellectual brain function of the children starts from early childhood which can be measured by standard intelligent tests, the results below average point out significant limitations, in daily living skills and adaptive functions.

Mentally retarded persons are also known as Metaphysical persons. The retardation or disability starts from early childhood or adolescence, before the age of 18. In most cases it persists throughout life.

There are four categories of Mental Retardation- Mild, Moderate, Severe and Profound. Every stage of retardation is measured through Intelligent Quotient level. Diagnosis is done as an intellectual functioning level of any individual's reasoning ability determining the Mental Age.

Present sequel emphasized on children between the ages of 15 to 25 years, suffering from Mental Retardation since childhood. The sample of twenty children categorised Moderate by I Q test results, are of Howrah District, West Bengal, who were chosen for the study.

Learning through Audio-Visual methods was an effective way to inculcate adaptive skills among them for their daily life. Such skills included the ability to produce and understand language in terms of communication, home living skills, use of community resources, health, safety, leisure and self-care.

The Audio-Visual learning, an inclusive curriculum developmental program which enhance the selected Moderate Mentally Retarded children to step forward as Mild retarded developing better skill orientation for performing in daily lives.

Keywords: audio, curriculum, development, mental, metaphysical, person, visual

Introduction

Mental retardation is a challenging phenomenon in 21st Century not even to a nation but the entire human race. The concept very often simplified beyond limits still the exact cause and its relevance to the conditions have not been narrated as per its demand is concerned.

The intellectual brain function of the children starts from early childhood which can be measured by standard intelligent tests, the results below average point out significant limitations, in the person's daily living skills and adaptive functions. Mentally retarded persons are also known as Metaphysical persons. The retardation or disability starts from early childhood or adolescence, before the age of 18. In most cases it persists throughout life.

"Mental Retardation" is usually thought of as a condition based on some organic disorder, 85% retardation is known as "Functionally" retarded. The individuals who are between 50% to 70 % IQ level are known to be functionally mental retarded children, categories Mild & Moderate retardation have no evidence of organic disorder or brain pathology. But an organically retarded individual, those who have physiological defects tend to have IQ level lower than 50 %, are known as Severe and Profound mentally retarded. The Mental Retardation refers to subnormal general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behaviour

(Heber 1961:466). The subnormal intellectual functioning is defined as performance on measures of general intelligence (IQ) and adaptive behaviour is defined as the effectiveness

of the individual in adapting to the natural and social environmental demand, of the individual concerned. In actual practice, however, mental retardation tends to get treated as a unidimensional phenomenon related primarily to intellectual functioning and IQ scores remain the principal measure of retardation (Mercer 1973; Langness 1976).

According to Dr. Srinibas Bhattacharya in his book "New Perspectives in Mental Retardation" he mentioned that mental retardation is lack of sensitivity to the individual needs of a growing human being either as a learner or as a member of a family. Education should be humanised and value system should be geared to promote human values. Dr. Sharon Sabsay, Martha Platt, et.al narrated mental retardation and its conditions there of in respect of their social, cultural, linguistic field of life in their book "Social Setting, Stigma and Communicative Competence".

The present sequel has highlighted on the mentally retarded children who are attaining 15 to 25 years of age residing in the district of Howrah, West Bengal, India. The sample population categorised Moderate Mentally Retarded Children. The Audio-Visual learning, as an inclusive curriculum developmental program has been introduced, to bring them from Moderate to Mild Mental Retardation status for better skill orientation in their daily life, enhancing their sensational human nature, fostering social equity and betterment of people at large.

Mental Retardation

In scientific terms mental retardation refers to sub-average intellectual functioning which originates during the

developmental period and is associated with impairment in adaptive behaviour. There are various attempts to define mental retardation, the problem of definitions is still superficial, still remains unsolved. Different definitions have reflected opposing theoretical view of etiologic also. American Association of Mental Deficiency published a detailed manual in 1959 on terminology and classification of mental retardation. In May 1960 the Association has emphasized the developmental concept of adaptive behaviour as the frame of reference. It is assumed that adaptive behaviour is manifested in three fundamental manners –

1> Maturation, 2> Learning and 3> Social adjustment, each of these three factors assumes primary importance during a certain stage of the developmental period.

Doll's (1947), proposed different criteria of mental deficiency and distinguished intellectual retardation from mental deficiency, pointed out an inclusive concept of mental retardation, which are – 1> Social incompetence, 2> Mental sub normality and 3> Developmental arrest and mental sub normality.

According to Heber, an individual's total behavioural adaptation to the environment is influenced by intellectual, personal, social and sensory-motor factors. Bijou S.W defined a retarded individual is one who has a limited repertory of behaviour evolving from interactions of the individual with his surrounding contacts which constitute his history.

Thus, it is very clear and not very difficult to understand that, most definitions of mental retardation are behavioural descriptions of what is generally agreed to be unintelligent behaviour. But presently the concept of mental retardation is undergoing a rapid change. In most parts of the world, the presence of a retarded child at home is no longer a concern to be ashamed of. Now it is regarded almost as a common disease and is taken up with a multidisciplinary and multidimensional concept apart from the physiological and psychological basis, sociological gaining is also prominent. The etiology of mental retardation is no longer taken up on its face value. The present trend is to look at the problem in its entire perspective, relation to family, community and to cultural context also.

Causes & Symptoms

Limitations in adaptive skills, low intelligent quotient are the hallmarks of mental retardation.

Aggression, self-injury and mood disorders are sometimes associated with the disability. The severity of the symptoms and the age at which the first appearance of it is observed, depends upon cause/s. If retardation is caused by chromosomal or other genetic disorder, it is often apparent from infancy. Childhood illness or injuries are also causes for mental retardation, in such cases learning and adaptive skills that were/are may suddenly become difficult or impossible to master. In about 40% of causes, the cause of mental retardation cannot be determined at proper time. Biological and Environmental factors responsible for mental retardation include.

1. Genetic Factors - About 30% causes of mental retardation are caused by hereditary factors. The hereditary genetic abnormality, such as Fragile X Syndrome. Fragile X, a defect in the chromosome which determines sex, is the most common inherited cause of mental retardation. Single gene defects like

PKU and other Inborn Error of Metabolisms. An accident or mutation in genetic development is also a cause for mental retardation. The Down syndrome, Trisomy (21), is another cause of mental retardation.

- 2. Parental Illness & Issues** - Fatal Alcohol Syndrome (FAS) affects the children, caused by the Mother's heavy drimlainer during the first twelve weeks of pregnancy. Mental infections and such illness as glandular disorders, rubella, and toxoplasmosis, cytomegalovirus infection may cause mental retardation. If the Mother suffers from hypertension or blood poisoning (toxaemia), the low oxygen supply or reaching of low oxygen to the foetus brain, causing brain damage and mental retardation. Birth delivery defects that cause physical deformities of the head, brain and nervous system may be one of the causes of mental retardation.
- 3. Childhood Illness and Injuries** - Hyperthyroidism, whooping cough, chicken pox, measles and Hib disease (a bacterial infection) can cause mental retardation. An infection in the brain covering (Meningitis) or an inflammation of the brain itself (Encephalitis) can cause swelling that in turn may cause brain damage and mental retardation.
- 4. Environmental factors** - Ignored or neglected infants who are not provided with the mental and physical stimulants required for normal development may suffer from irreversible learning impairment. Suffer from Malnutrition, unhealthy living conditions; abuse and improper or inadequate medical care are at the highest risk. Exposure to lead or mercury can also cause mental retardation

Diagnosis

Introducing Standard Intelligence Tests to measure the learning abilities and intellectual functioning of the brain of the metaphysical persons. Family Therapy, Audio-Visual learning method/therapy, physiotherapy are the best way for managing the conditions The present study emphasized on the Audio-Visual Learning procedure to manage the mental conditions of the Moderate Mentally Retarded persons and to bring them in Mild Retarded podium through inclusive curriculum system, developing IQ level by the way of audio-visual learning process.

Inclusive curriculum is an effective pattern of curriculum, promoting students learning process, which design the curriculum program, and enhance special attention to the students especially the mentally retarded children. The basic principal of guiding factor is totally changed; inferring to a cluster of ideas, methods and experiences which expressed in practical work. Audio – Visual learning is one of the most important innovative inclusive educational steps, approaching to educate the mentally retarded children for bringing them to normal life.

Inclusive Curriculum

Inclusive curriculum means, to develop and design the schools, classrooms, programs and activities for all students, who attend and are welcome by their neighbourhood schools in age-appropriate, regular classes are supported to learn, contribute and participate together.

The World Declaration on Education for All, adopted in Jomtien, Thailand (1990), sets out an overall vision: universalizing access to education for all, children, youth

and adults, promoting equity. This means being proactive in identifying the barriers that many encounter in accessing educational opportunities and identifying the resources needed to overcome those barriers.

Inclusive education is a process of strengthening the capacity of education system to reach out to all learners especially the metaphysical persons and can thus be understood as a key strategy to achieve effective family and social life. As an overall principle, it should guide all education policies and practices, starting from the fact that education is a basic human right and the foundation for a more just and equal society, fostering challenges with the disabilities as a developmental ability to propagate normal, skill oriented, healthy life.

Audio-Visual Learning

Audio-Visual learning is interactive, multidisciplinary and effective lessons which engage the individuals when it is delivered with audio & visual support. The idea is to provide learners, the ability to connect cognitively with the materials being taught.

Learning through audio-visual method was introduced in 1920 when film technology started. In 1950, digital technology along with advancement emerged in the class room teaching and different media-oriented advancement became increasingly popular in the school as learning tools.

Research has shown that learning is based on perception, when senses gain information from the environment. Learning becomes more effective when two or more senses are being used simultaneously to receive information.

Thus, learning through audio-visual is an important tool to the disabled persons especially the metaphysical. They receive information through sensory motor nerve which directly interacts with their brain by listening and visualizing the exact matter which is narrated, acted, verbally orated and visually projected in front of them. Thereby, learning becomes more effective and easier for them, which inculcate adaptive skills in their daily life.

Intelligent Quotient (IQ) & Mental Retardation

Standardized test that measures the ability of reasoning the exact matter in terms of Mental Age (IQ). Mental retardation is pointed out when IQ is below 70-75%. Adaptive skills are a term that refers to skills needed for daily life. Such skills are the determinant factor of ability to produce and understand language (communication), home living skills, use of community resources, health, safety and self-care.

In general, Mental Retardation, children reach such developmental milestones as walking and talking much later than the children in general category. Symptoms of mental retardation may appear at birth or later in childhood but within the age of 18years. Four categories of retardation are Mild, Moderate, Severe and Profound, mental level of functioning conditions.

Mild Mental Retardation categorised IQ score ranges from 50-70%, while IQ score ranging from 35-55% categorised as Moderately Mental Retarded. The IQ range between 50-55% is a stage of stability from one mental condition to the other.

The present sequel was emphasized on children with moderate mental retardation, whose scoring of IQ was limited between 35-45% of mental age, while their physical age was between 15- 25 years and was very poor in

acquiring communications and home living skills. Lacking in health and safety measures, self-care. Ten parameters were chosen for enhancement of their mental status, developing IQ level, and encompassing retardation from moderate to mild.

The scheduled parameters for detecting Mental Retardation through IQ tests are-

- Alphabet identification through audio-visual method
- Number pointing and numeric notification by visual and auditory help
- Colours, persons, educational amenities, daily life articles identification
- Seeing activities and acting in the same manner, in daily life performances
- Throwing balls in the basket for development of concentration
- Collecting materials, gathering it and keeping in a particular place
- Reading, writing, constructing sentences for communications
- Singing songs through listening the audio for developing performing arts
- Follow orders of the instructor/teacher for enhancement of skills
- Reciprocate with the action, using symbols

The above parameters are very effective, intricate and basic need oriented to strengthen the moderate metaphysical persons, encouraging them to develop their daily life skills. Motivate to learn, live, and self-care. The twenty children were motivated, taught to build up their strength, fostering self-confidence to become mild mentally retarded from moderate formation lasting through the stability conditional period.

Audio-Visual Message Production through the Chart

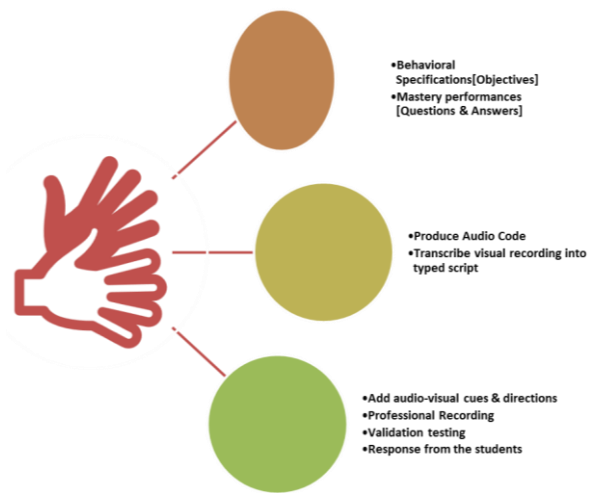


Fig 1

- The above chart exhibits step wise direction of the audio-visual messages to the Moderately Mentally Retarded learners for production, response, sensory action, communication, better activity and skilful orientation for everyday life formation.
- The chart inculcates development of behavioural activities with mastery performances through audio-visual code, transcription of recording, visual typed

code, adding audio- visual cues & directions for enhancement of inbuilt professional approach with

validation testing in accordance to receiving response from the learners.

Table 1: Moderate Mentally Retarded Learners & Their Initial IQ Stage, Scoring.

Serial No	Moderate Mentally Retarded Learners	IQ at Initial Stage Moderately	Standard IQ Level/Scoring (35-55%)	Total scoring % (35-50%)
1	Subject-1	45	10	5
2	Subject-2	43	16	7
3	Subject-3	43	16	7
4	Subject-4	42	17	8
5	Subject-5	42	17	8
6	Subject-6	42	17	8
7	Subject-7	42	17	8
8	Subject-8	42	17	8
9	Subject-9	41	18	9
10	Subject-10	41	18	9
11	Subject-11	41	18	9
12	Subject-12	41	18	9
13	Subject-13	40	19	10
14	Subject-14	40	19	10
15	Subject-15	40	19	10
16	Subject-16	39	20	11
17	Subject-17	39	20	11
18	Subject-18	38	21	12
19	Subject-19	37	22	13
20	Subject-20	36	23	14
Total	20 Learners	814	362	186

The above table shows the exact situation of the Moderately Mentally Retarded learners’ initially at the Audio-Visual Learning program.

- The column 3 exhibits Intelligent Quotient (IQ) level at the initial stage of the learners, which was categorically selected at Moderate Mental Retardation stage, varying from 35 to 55 %.
- Column 4 depicts Standard IQ scoring level, i.e. when a subject score initial IQ, within the selected category

(35-55%) level, including stability range, mentioned 5% of total scoring (35to50%+5% =55%) at the starting time of Audio-Visual program, to reach moderate mental condition to mild.

- Column 5 denotes exact scoring excluding stability stage of the learners’ mental condition of the moderately mentally retarded children. The scoring capacity 35% to 50 %.

Table 2: Chronological IQ Stage of the Moderate Mentally Retarded Learners (1-3Years Time Period)

S.N	Moderate Mentally Retarded Learners	IQ at Initial Stage	IQ at 1 st Year	IQ at 2 nd Year	IQ at 3 rd Year	Total IQ Scoring
1	Subject – 1	45	1.5	2.5	2.9	6.9
2	Subject – 2	43	1.3	1.9	2.5	5.7
3	Subject - 3	43	1.3	2.2	2.8	6.3
4	Subject – 4	42	1.2	1.8	2.1	5.1
5	Subject – 5	42	1.4	1.7	1.9	5.0
6	Subject – 6	42	1.3	1.6	1.8	4.7
7	Subject – 7	42	1.4	1.9	1.9	5.2
8	Subject – 8	42	1.5	1.9	2.1	5.5
9	Subject – 9	41	1.3	1.7	1.9	4.9
10	Subject – 10	41	1.2	1.5	1.7	4.7
11	Subject – 11	41	1.0	1.3	1.5	3.8
12	Subject – 12	41	0.9	1.1	1.4	3.4
13	Subject – 13	40	1.0	1.4	1.6	4.0
14	Subject – 14	40	1.1	1.4	1.7	4.2
15	Subject – 15	40	1.1	1.4	1.7	4.2
16	Subject – 16	39	0.8	0.9	1.2	2.8
17	Subject – 17	39	1.0	1.1	1.3	3.4
18	Subject – 18	38	1.2	1.2	1.5	3.9
19	Subject – 19	37	1.1	1.3	1.6	4.0
20	Subject – 20	36	0.9	1.1	1.4	3.4
	Total	814	23.6	30.9	36.5	91.1

- IQ Scoring 0-3% indicates low observed value.
- Scoring of IQ 3-5% denotes medium observed value/maintaining equilibrium
- IQ Scoring above 5% points out high observed value.

The Chronological IQ stage of the Moderate Mentally Retarded learners showing variations from 1st year to 3rd year time duration.

- The initial stage showing 45% to 36% IQ standard of the learners.
- IQ at 1st year varies from 1.5% to 0.8% development.
- 2nd year showing 0.9% in lower state and 2.5% in higher status of development.
- At the final or 3rd year of the audio-visual learning program, shows highest developmental stage of 2.9% and lowest advancement at 1.4% of the IQ level of the learners.
- According the above table, subject 1, 2, 3, 4, 7&8 exhibits high observed value of the audio-visual learning processes and they scored above 5% of the total scoring value of IQ to reach Mild Mental Retardation stage.
- Subjects 5, 6, 9 to 15 and 17 to 20 depicts medium observed value of the learning through audio-visual method. They score 5% to 3% of the IQ level in the learning process to identified as Mild Retarded learners and maintaining equilibrium as Moderate to Mild Mentally Retarded learners.
- Subject 16 only shows low observed value as per the above table. 2.8% scoring exhibit below IQ scoring level according to the other two levels.

Pie Fig 2

Total IQ Scoring at Initial Stage of the Moderate Mentally Retarded Learners.

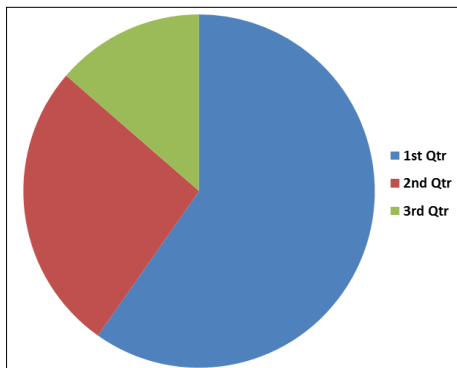


Fig 2

- 1st Qtr identifies total IQ scoring initially.
- 2nd Qtr denotes total Standard IQ scoring including stability stage (35-55%).
- 3rd Qtr depicts total IQ scoring excluding stability stage (35-50%).

1st Qtr IQ scoring of 20 learners occupy 814 total numbers which reaches 60% of the scale point, at initial stage and the mental condition of the Moderate Mentally Retarded learners.

The 2nd Qtr exhibit a total value of 362 Standard IQ Scoring/Level including stability range 35% to 55%. Occupies 27% of the scale point.

3rd Qtr denotes total IQ scoring of 35% to 50% excluding stability range of the learners which points out 14% scale value, of the total 184 numeric number.

Thus, it is evident that, according to above pie diagram initially IQ scoring of the Moderate Mentally Retarded learners is occupying 60%, 27% and 14% of the total

numeric value of 1360, including and excluding stability range.

The audio-visual learning program and its essentiality for the moderate mentally retarded children are required for reaching them to mild retarded condition. The above pie diagram exhibits step wise mental condition, initial IQ level of the learners and their scoring value along with stability range observance.

Pie Fig- 3

Total Chronological IQ Scoring Value of the Moderate Mentally Retarded Learners (1-3 years' Time Period)

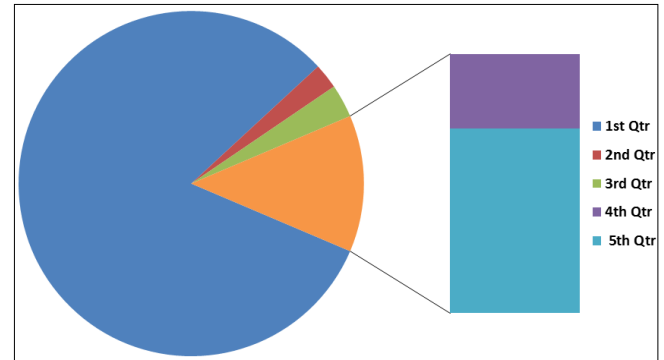


Fig 3

- 1st Qtr denotes total 814, i.e. 82% IQ level of the twenty Moderate Mentally Retarded Children at initial stage of learning through Audio-Visual process.
- 2nd Qtr points out first year developmental stage of the learners. Total scoring value is 23.4, coined out 2% of the IQ advancement.
- 3rd Qtr exhibits 30.9, indicates 3% development of IQ value at second year scoring of IQ, acquiring of daily skills.
- Series scale point 4th Qtr points out value of 36.5 IQ levels, which are proving 4% advancement of Mental Retardation towards Moderate to Mild Mental Retardation.
- Series scale point 5th Qtr depicts 91.1 of IQ development for 9% total scoring of the developmental aspects for daily life skills orientations of the children of Moderate Mentally Retarded.
- The Bar of Pie chart proves co relationship between total chronological IQ scoring and higher acquiring scale of Standard Intelligent Quotient.
- Chronological IQ series scale indicates first year to third year developmental strategies of score value, indicates 2%, 3% and 4% advancement respectively.
- Thus, series scale point 6 evidently pointing out 13% scoring of 127.6 scored IQ value for reaching moderate to mild mental retardation, while first qtr denotes 814 total scored value of IQ and starting stage considered 0% scoring level.
- Thereby, it is proved that, audio-visual learning is an effective, value oriented, scientific program for Mentally Retarded Children for their daily life skill orientation and advancement in Mental conditions.

Column Diagram of Developmental Strategies 1-3 years’ duration and Total Scoring Value of Moderate Mentally Retarded Learners.

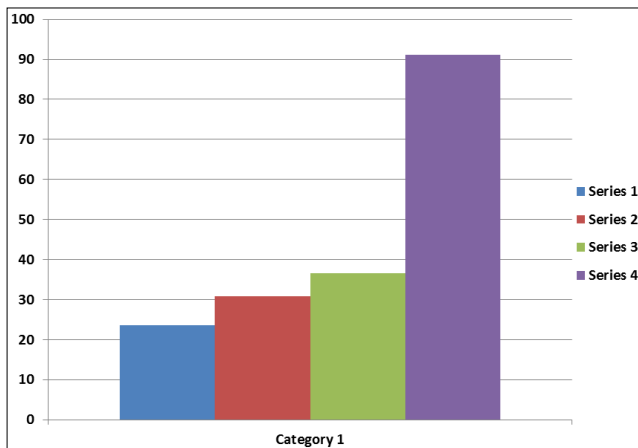


Fig 4

- Series 1 showing first year IQ scoring
- Series 2 exhibits second year IQ scoring
- Series 3 points out third year or final year scoring value
- Series 4 categorises total scoring value of IQ level.

The above column diagram proves developmental strategies of three years audio-visual learning program and its effectiveness on the learners of Moderate Mental Retardation stage in 15 to 25 years age of selected children. Chronological mental uprightness substantiates the cogent relation between audio & visual production and its positive influence in cognitive brain functions among the learners of metaphysical person which impel stimulus senses to activate brain functions for acquiring skills in daily life activities, communications and behavioural changes for betterment of normal life, reaching moderate to mild mental retardation conditions.

Conclusion

The intellectual and behavioural deficits which our society leads to the imposition and labels as “Mentally Retarded” are the prime aspects at present day scenario, which appear to be a social menace. The sequel categorically observed the performances of inadequate and incompetent learners, who are lagging in their social interactions with the non retarded people.

The study proves effects of its utmost endeavour for bringing Moderate Mentally Retarded learners in the state of Mild Mental Retardation stage and to substantiate “Developmentally Disabled”, which are reified by scores on IQ and adaptive behaviour tests.

The audio-visual learning itself is an effective phenomenon through which cognitive brain functions stimulate the learners’ intellectual brain operations by the sensory motor nerve which is the connection between the learners and their environment, marked as the learner’s ability to recognise, receive, reciprocate and send stimuli as well as to comprehend the meaning of stimuli.

Traversing through the present study, which iterates audio-visual learning program and its in-depth implications to the Moderate Mentally Retarded learners, within three years’ time period during which they acquired communication skills for their daily life functioning, behavioural

adaptations for smooth self and community life execution, to bring them from Moderate to Mild Mental Retardation level for daily skilful life performances.

Thereby, learning through Audio-Visual methods was/is an effective way to inculcate adaptive skills among them for their daily life. Such skills include the ability to produce and understand language in terms of communication, home living skills, use of community resources, health, safety, leisure and self-care.

Summary

Audio is a powerful tool for effective and efficient learning phenomenon for the Metaphysical Persons. It serves as facilitative; time-controlled learning method which plays a predominant role as a delivery system of information and controlling agent of interaction. Audio plays a secondary but important role with the visual information design formats. Thus, the audio-visual program is a catalytic design developer to the Metaphysical Person’s as a learner to perceive as the best performance producer.

Proponents of audio-visual learning have been emphasized, the need to develop communications between two retarded persons and with the non- retarded people. The basic abilities of the audio-visual learning program attempts-

- To promote communications skills with the language
- To interpret use of audio-visual instructions, symbols and effective signals
- To employ mental imagery, in solving problems
- To facilitate stimulus cues for stimulating cognitive processing of the brain functioning.
- Identify alphabets through audio-visual learning process
- Number pointing, remembering and numeric notification by visual and auditory help
- To recognise different colours, persons, educational amenities, daily life articles
- To observe activities and acting in the same manner, in daily life performances
- Throwing a ball in the basket for development of concentration
- Collecting materials, gathering it and stacking in a particular place
- Reading, writing, constructing sentences for communication
- Singing songs by listening to the audio developing performing arts
- Follow orders of the instructor/teacher for enhancement of skills
- Reciprocate with the action, using symbols

The research relied upon the above-mentioned points to facilitate the children at Moderately Mental Retardation stage. To bring them from Moderate to Mild Mental Retardation level the three years Audio-Visual Learning program is the most effective phenomenon, while scores on Intelligent Quotient and adaptive behavioural tests are significant variations to propagate them from “Mentally Retarded” to “Developmentally Disabled”.

The developmental quotient has been observed and narrated by the tables, smart chart, pie diagrams and column diagram. Advancement of the learners and the effectiveness of the program are represented scientifically, thereby propagation is demanded authentically.

Chronological mental uprightness substantiates the cogent

relation between audio & visual production, co-relations and its positive influence in cognitive brain functions among the learners at metaphysical state, within 15 to 25 years of age but mental conditions as per IQ tests results from 36% to 45%. The positivity impels stimulus senses to activate brain functions for acquiring skills in daily life activities, communications and behavioural changes for betterment of life, reaching moderate to mild mental retardation conditions.

Thus, it is evincing the certainty of existing plight of the Developmentally Disabled learners through Audio-Visual methods of learning. Effectiveness of the process impels the Moderate Mentally Retarded learners to become Mild Mentally Retarded within three years of stipulated time period. Nevertheless, Audio-Visual learning is one of the most intellectual, effective learning processes for the Metaphysical Persons towards advancement of their future orientation to achieve normalcy in life.

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