

“A COMPARATIVE STUDY OF DEVELOPMENT OF AGILITY IN NORMAL AND DEAF AND DUMB BOYS BETWEEN 8 TO 14 YEARS”

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ABSTRACT

A comparative study of development of Agility in normal and deaf and dumb boys between 8 to 14 years is administered on around 350 students of different schools who were taking formal education. Out of 350 students 175 were selected from normal category and 175 from physically challenged i.e., deaf and dumb category. In each age group 25 boys were selected (25 subjects in normal boys and in each age group i.e., 8, 9, 10, 11, 12, 13 & 14 years totaling to 175; 25 subjects in deaf and dumb in each age group i.e., 8, 9, 10, 11, 12, 13 & 14 years totaling to 175). These subjects were tested initially in Agility and the same subjects were exposed to the same tests after exactly one year without any formal sports training and the development in their Agility was noted. After the statistical treatment of data by utilizing t-test and f-test the following findings were noted: The development in agility is found developing in all the age groups and in all the variables, but it is observed maximum at different ages in different variables.

INTRODUCTION:

Motor development objectives are concerned with making physical movements, useful with as little expenditure of energy as possible. The term motor is derived from the relationship of a nerve or nerve fiber to the one that connects the Central Nervous System with muscles through their convections the movements' results. Effective motor movement can only results if there is harmonious working of the muscular and the nervous system. It helps in keeping a greater distance between fatigue and peak performance. The activities that involve hanging, jumping, dodging, leaping, kicking, bending, throwing will enable a person to perform his daily work much effectively without reaching a point of wearing out, so quickly.

A comprehensive list of components of motor ability for performance of various physical activities (including sports) include muscular strength, muscular endurance, muscular power, cardiovascular endurance (alternatively also known as cardiopulmonary endurance), **agility**, speed, balance, flexibility, reaction time, coordination (eye-foot coordination, eye-hand coordination, whole-body coordination). In addition, traits like simple motor response, reflexes, sensory input and awareness of space and tempo (characteristic speed and rhythm of movement) are also considered important in motor performance- ability especially during the early years of body development.

The need today is to search some extraordinary talent in an individual for the laurels in international sports arena. In this case it becomes obvious that the search should not limit only with the normal. The qualities that an individual possess should be innate and may be nurtured with good scientific platform, deaf dumb being no exception to it. Hence the search to prove the innate qualities of the deaf and dumb and bring them to equal stature with normal is the basic aim of the researcher.

NEED OF THE STUDY:

The population of the normal mass is comparatively more to the deaf dumb resulting the opportunities designed are more for normal mass. But at the same time there is a society always struggling to uplift the physically challenged and trying to give them the best and equal opportunities so that the handicapped ability should not be the hurdle in normal and natural unfolding of an individual.

Considering the inability, which has the opportunity to be converted into compensatory ability for excelling in the sports arena the researcher, felt high need to evaluate the development of Agility among the deaf dumb and compare with the normal, which is a performance prerequisite.

OBJECTIVES OF THE STUDY:

1. To find out, access and analyze the developments taking in Agility among normal boys and that of deaf dumb at particular age group.
2. To understand if any higher or compensatory ability among deaf dumb children is noticed when compared to the normal children.
3. To understand various parameters of coordinative ability in certain age group of certain physical abnormality.
4. To understand scientific base for methods of training physically challenged children.
5. To understand how the society would help its weak counterpart.

SIGNIFICANCE OF THE STUDY:

1. The study may reveal the physical and mental problems of deaf dumb children.
2. The study may also profound a training methodology and loading procedure in Agility training for physically challenged children in specific age group.
3. Results may also be helped to enhance sports terminology communication skills with physically challenged children.
4. Evaluation of development of Agility may fetch platform for establishing training methodology for enhancing performance in specific sports.
5. The comparison of development of Agility will give clear picture of the positive and negative aspects of Agility, which in turn ensure the proper training.

DEFINITION OF THE TERMS:

DEVELOPMENT:

Development is a process of qualitative transformation, which brings about progressive changes towards maturity and functional improvement in the organism of human being.

GROWTH:

Growth is a process anatomical in nature involves structural changes and quantitative to measure.

AGILITY:

Agility is the ability of an individual to change the direction with speed (Seconds), it depends on the whole body coordination.

NORMAL CHILD:

Normal: typical; usual; healthy; according to the rule or standard. If a child is found to be disease free, exhibits proper growth and development according to the age in its physical, mental and social health and status, then he/she may be defined as a normal child.

DEAF AND DUMB:

Deaf: is unable to hear; hearing indistinctly; hard of hearing.

Dumb: is mute; speechless; unable to speak.

8 TO 14 YEARS (CHRONOLOGICAL AGE):

Chronological age is the number of years and days elapsed since birth.

REVIEW OF RELATED LITERATURE:

* In 1973, Constantine and colleagues completed an interesting study which looked at the ability of a child to accelerate movement and to inhibit movement when asked to do so. Their subjects ranged in age from 4 to 9 years of age. They found that 'both' the ability to inhibit movement and to significantly increase movement speed was often moderately related. The ability to move faster or slower was achieved better by older children in the study. In a 1973 study carried out in Cratty's laboratory, found a significant change in a "draw slowly" measure of impulse control between the ages of 5 and 8 years, in contrast to the findings reported above by Bucky et al.

* A group of educationally retarded boys was taken for twelve weeks of judo instruction. Davis and Byrd tested the boys by means of the California Test of Personality, the Wide-Range Achievement Test and the AAHPER Special Fitness Test (i.e., a test specifically intended for use with handicapped children). Subjecting the results to statistical analysis

they found that there were significant changes in total adjustment and in some measures of fitness. One particular case was of special interest. He was completely withdrawn, spoke to no one, showed no emotion and was completely uninterested in life. Before the end of the twelve-week program this boy was assisting the slower learners at judo and was at the end of the experimental period elected captain of the judo team. Davis suggests that “these gains were attributed in part to breaking the well-established repeated failure pattern”.

- * From 1920 to 1930, one of the conclusions Piaget drew from watching his children grow was the conviction that thought sprang from actions, and not from other sources such as language.

- * Newell C. Kephart was a clinical psychologist who, in several books, a series of 19 one-hour films, and several articles, has outlined a theory proposing that motor learning is the basis of all learning.

- * Studies summarized by Bloom have pointed out the difficulty of predicting later intelligence by evaluating the perceptual-motor attributes of young children.

- * Bayley, who in 1968 published a longitudinal study of 54 individuals from birth to 36 years of age, has found that an infant’s abilities can be factored into six separate attributes by the age of 5 months; visual following, social responsiveness, perceptual interest, manual dexterities vocalizations, and object relations.

- * Rutherford found that although the boys had motorically gained significantly, the boys had not. Kephart’s rather carefully designed methods of motor training of neurologically impaired youngsters should prove of value when attempting to improve motor functions.

- * Delacto’s theory is based on a view of neural function which suggests that specific “layers” of the brain mediate discrete motor functions.

- * Minerva selected one from each group (identical twins and fraternal twins) and gave them a six month period of motor training involving a variety of tasks. Minerva concluded that the more complex tasks are modifiable through training, but the more basic locomotors functions are not.

METHODOLOGY:

SAMPLE:

The samples of this study is randomly selected from different schools with their date of birth lying between 1999 to 1993 in normal subjects (boys) and deaf dumb subjects (boys). The selected age groups of the subjects were from 8 to 14 years. In each group 30 subjects were selected initially with a margin of ± 5 . All the selected subjects

were non-sportsman staying either in school hostels or at their residence to ensure the untrained development in motor abilities. In all 350 subjects were tested initially and the same 350 subjects were tested finally after one academic year (12 months). The tests were conducted for two days for four hours on each group of 25 subjects approximately. In all 350 subjects were considered for obtaining the difference between development is evaluated by subtracting the initial test from the final test score. Every subject was allotted with a code and a separate self contained form for test results. The tests were selected in the aspects of development of Agility. The tests are administered individually under standard conditions applicable for specific tests and the time period required between two tests is amply considered.

VARIABLES:

Dependent Variables: (1) Normal boys. (2) Deaf Dumb boys.

Independent Variables: Development of Agility (6 X 10 Mts. Shuttle Run)

Inter-weaning Variable: Age groups (8, 9, 10, 11, 12, 13 & 14)

TOOLS AND MEANS:

The research scholar has used some of the selected Agility tests which are applicable to the selected age group and samples and are universally accepted and established standard tests for assessing development of motor abilities.

Agility test: (1) 6 X 10 Mts. Shuttle Run

PROCEDURE:

The subjects were selected from different schools in normal category (boys) and deaf dumb schools (boys). In all 01 test was selected for evaluating the development of Agility of the subjects between 8 to 14 years. The test was administered with all specified and standard conditions. The conditions of the subjects were observed normal and motivated to take part in the tests. An introductory talk regarding the initial day's workout is assessed for confirmation of tirelessness and recovered state.

STATISTICAL METHODS:

To analyze the collected data the scores are arranged according to the comparison and in sequential order so as to find out the statistical values. The following statistical variables are selected for comparing, analyzing and interpretation of numerical values and basing on which the findings are discussed.

(1) Mean is computed by adding all the scores and then dividing by the number of scores involved. The mean is used in the study to measure the average development.

(2) For testing the hypothesis for the difference between various sample means the t test is used at significance of .05 levels.

(3) For testing the hypothesis for the difference between various sample means the f test is used at significance of .05 levels.

RESULTS AND DISCUSSIONS:

The development in agility is found developing in all the age groups and in all the variables, but it is observed maximum at different ages in different variables.

RESULTS OF THE COMPARISON OF THE DEVELOPMENT OF AGILITY OF BOYS (NORMAL AND DEAF-DUMB) BETWEEN 8 YEARS TO 14 YEARS (6 X 10 MTS. SHUTTLE RUN)

Normal boys:

1. The maximum mean of development of agility in normal boys was found at the age of 8th year, which is -0.53 sec and the minimum at 9th year, which is -0.17 sec. The average mean of development of agility normal boys between 8 to 14 years is found to be -0.36 sec.
2. The standard deviation of development of agility in normal boys is found maximum at the age of 14th year, which is 0.26 and minimum at the age of 9th year, which is 0.08. The average standard deviation of development of agility in normal boys between 8 to 14 years is found to be 0.18.
3. The correlation of development of agility in normal boys between 8 years to 14 years of age groups is found as high as 0.96.

Deaf-dumb boys:

1. The maximum mean of development of agility in deaf-dumb boys was found at the age of 14th year, which is -0.42 sec and the minimum at 8th year, which is -0.17 sec. The average mean of development of agility in deaf-dumb boys between 8 to 14 years is found to be -0.32 sec.
2. The standard deviation of development of agility in deaf-dumb boys is found maximum at the age of 10th year, which is 0.36 and minimum at the age of 9th year, which is 0.15. The average standard deviation of development of agility in deaf-dumb boys between 8 to 14 years is found to be 0.21.
3. The correlation of development of agility in deaf-dumb boys between 8 to 14 years of age groups is found as high as 0.97.

COMPARISON OF BOYS (Normal and deaf-dumb):

The average mean of development of agility of normal boys between 8 to 14 years is -0.36 sec, which is more to -0.32 sec that of the deaf-dumb boys between 8 to 14 years. The difference of mean of development of agility between normal boys and that in the deaf-dumb boys is -0.04 sec, which is insignificant. The maximum mean of development of agility in normal boys is found at the age of 8th year, which is -0.53 sec and that in the deaf-dumb boys it is at the age of 14th year, which is -0.42 sec.

Table No. IV.2: evaluation of significance of development of agility in normal and deaf-dumb (boys) by using t-test and F-test.

BOYS (NORMAL & DEAF-DUMB)	t-Test Results	F-Test Results	COMMENTS
08 NB & DDB	0.498	0.674	Insignificant
09 NB & DDB	0.0003	0.006	Insignificant
10 NB & DDB	0.058	0.0001	Insignificant
11 NB & DDB	0.062	0.429	insignificant
12 NB & DDB	0.182	0.526	Insignificant
13 NB & DDB	0.398	0.967	Insignificant
14 NB & DDB	0.420	0.158	insignificant

* Significant at 0.05 level.

MEAN VALUES AND COMPARISON OF THE CATEGORY OF SUBJECTS: BOYS (N & DD)	6X10 M SHUTTLE INITIAL	6X10 M SHUTTLE FINAL	6X10 SHUTTLE DEVELOPMENT
NORMAL BOYS 08 YEARS	19.1724	18.6404	-0.532
DEAF & DUMB BOYS 08 YEARS	20.5116	20.3412	-0.1704
NORMAL BOYS 09 YEARS	20.0616	19.8832	-0.1784
DEAF & DUMB BOYS 09 YEARS	19.9888	19.678	-0.3108
NORMAL BOYS 10 YEARS	18.9152	18.6292	-0.286
DEAF & DUMB BOYS 10 YEARS	19.6792	19.2672	-0.412
NORMAL BOYS 11 YEARS	18.1732	17.7488	-0.4244
DEAF & DUMB BOYS 11 YEARS	18.8832	18.5612	-0.322
NORMAL BOYS 12 YEARS	17.9448	17.5988	-0.346
DEAF & DUMB BOYS 12 YEARS	19.7056	19.4064	-0.2992
NORMAL BOYS 13 YEARS	18.1896	17.8008	-0.3888
DEAF & DUMB BOYS 13 YEARS	18.9948	18.6208	-0.374
NORMAL BOYS 14 YEARS	17.602	17.1888	-0.4132
DEAF & DUMB BOYS 14 YEARS	17.7636	17.3372	-0.4264

REFERENCES:

1. Sue Watson <http://specialed.about.com/od/multipliedisabilities/amultiple.html> (2006).
2. LECIA J. BARKER, "Alliance for Technology, Learning, and Society Evaluation and Research Group," University of Colorado, UCB 320, Boulder, CO 80309-0320, e-mail:lecia.barker@colorado.edu. This material is based on work supported by the National Science Foundation, (2003) Oxford University Press.
3. PORTMANN, M., "Athlete Long-Term Development," National Coaching Certification Program- Level 4-5. Ottawa: Coaching Association of Canada (1993).
4. (a) GALLAHUE, D. A., "Developmental Physical Education for Today's Elementary School Children," New York: Macmillan (1987). (b) TIHANYI, J., "Notes on Child Development," The Digest. 1 (1982), pp. 1-4. (c) TIHANYI, J., "Long Term Planning for Young Athletes: An Overview of the influences of Growth, Maturation and Development," Laurentian University, Sudbury, Ontario (1990).
5. GILBERT, J.A., "Researchers on the Mental and Physical Development of School Children," Studies from the Yale Psychological Laboratory, (1984), 40-100.
6. ELENOR, M. BIRKETT, "A Comparative Study of the Effects of the Makaton Vocabulary and a Language Stimulation Program On the Communication Abilities of Mentally Handicapped Adults," Degree of M.Litt. Department of English Language, University of Glasgow, (1984).
7. BRYANT J. CRATTY, "Perceptual and Motor Development in Infants and Children," Analysis of Selected Perceptual- Motor Programs," 34 (1979).
8. GROVES, L. "Physical Education for Slow-Learning Girls in North-East Schools with Special Reference to the Effect of Creative Dance on Behavior and Friendship Patterns amongst Adolescent ESN (M) girls," M.Ed. Thesis, Durham University, (1975).
9. KOOLS, JOSEPH, and D. TWEEDIE, "Development of Praxis in Children," Percept. Mot. Skills, 40 (1975), 11-19.
10. DAVIS, B. and BYRD, R.J., "The effects of judo on EMR boys," *Journal of Sports Medicine and Physical Fitness*, XV, Dec. (1975).
11. WERNER, PETER, "Education of Selected Movement Patterns of Pre-school Children," Perceptual Motor Skills, 39 (1974), 795-98.