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INTRODUCTION
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Physical education is the education of and through, movement, that contributes to the growth and development of each child and a programme that gives adequate and proportionate attention to all learning domains—psycho meter, cognitive and affective. The overall goal of general education and physical education is to help the individuals to achieve optimum growth and development.

The broad aim of education is to develop in children, the ability to achieve satisfaction as responsible, contributing citizens of society. To accomplish this goal, physical education had maximized the unique contributions it makes to the education of the individuals, concentrating on educational outcomes that are not likely to be achieved through other subject areas in the total school curriculum.

Physical education is a systematic and progressive programme of the objectives of which are the framework of a programme which gives the direction and focus to curriculum and instruction. A set of objectives provided the children with target objectives to be accomplished during their school career where as it gave a constant and clear direction to the teachers.

Physical education in middle school

In today’s middle school curriculum the physical education programme
provides a continuity of movement experiences for children. These experiences help the children to acquire skill in movement, to understand the structure and concepts of movement, to utilize the process of movement and to employ and to enjoy the products of movement. A good physical education programme helps children to build a foundation for present and future success in all life activities.

In 1800s the Physical education curriculum was primarily corrective in nature with an emphasis on formal exercise. But as our society expanded and changed economically, politically and culturally, the nature of education as well as of physical education also changed. The educational curriculum reflected the values and needs of the democratic system. Thus the nature of physical education became preventive rather than corrective in nature and primarily one of formal exercises. An understanding of basic concepts of disciplines and development of process and using the concepts in a meaningful way are the focus of today. There is more emphasis on the effective aspects and values of education in which the skills or process of values are stressed.

Programmes in the elementary school are often referred to as “movement education” where the focus is on developing concepts and skills of basic the movement. The Elementary school Physical education programme is the foundation of life long movement education. Learning in movement is the unique and primary experience of physical education. To learn about movement, is to learn about the world of movement, the feeling of movement and the significance of movement to oneself. Learning through movement enhances the individual’s appreciation of many related disciplines and aesthetic experiences. This knowledge stimulates the basic, learning processes.
Middle school physical education had been influenced by many trends, organisations and issues over a long period of time. For example, the Kraus-Weber test results caused US citizens to think why children were unfit compared to European children and thus occurred a renewed emphasis on fitness. Hence, more concern was given to physical fitness training for kindergarten, primary and middle school children. The AAHPERD Health Related Physical Fitness Test norms for middle grade children provided measures for evaluating fitness activities for youngsters at this age level.

All children have a basic urge to do or accomplish something, which may be hereditary or environmentally influenced. Basic urges are linked closely to societal influences and could be affected by teachers, parents and peers. These desires provide important direction for developing physical education curriculum and creating a programme that is appropriate to the nature of the child. The teacher should understand how eager the child to be physically fit and to possess a body that is agile and attractive. Programmes in the school should offer an opportunity for self-improvement so that young children could cope with subpar strength, obesity, lack of physical skill and inadequate physical fitness. If a nation to remain strong physically, mentally, spiritually and socially there must be education for fitness.

Teacher’s role

The basic responsibility of the teacher is to direct learning towards target goals. No matter what methodology or teaching strategy, a diagnostic perspective

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3. Ibid p. 2

approach should be super imposed on all teaching process. Once the learning process is offered then comes the evaluation process. At this stage it is important to communicate with parents about the health and fitness status of their child. It is not only important to show the parents the result of the testing but also to tell them what the results mean in terms of their child’s health and fitness status.

Among the facts categorized according to learning domains – the psychomotor domain, cognitive domain and affective domain – the psychomotor domain is the one that most directly affected physical educators.

The first concern in the psychomotor domain is the process evaluation in which the “quality” is assessed or otherwise, assessing whether the child could perform the activity using the correct technique. The next is the product evaluation which is concerned with how far, how accurate, how many times, how much and how fast or otherwise the “quantity” is evaluated. Product evaluation focuses on performances outcomes in terms of measurable increments of what the child can do.

The National concern about the lack of physical fitness in the children is escalating and the physical education teachers must accept this challenge. The physical educators have to focus on the fitness of children and should offer the most comprehensive set of activities for developing fitness in a meaningful and attractive manner. This focus offers the physical educators an opportunity to be seen as a catalyst in changing life styles of children. Children should also participate in a broad selection of activities in order to cultivate an extensive and varied base of skill. Only by enlarging the base of activity the knowledge base of the discipline can be increased. An understanding of requisite knowledge for
effective teaching combined with a wealth of knowledge about motor skills and movement activities are needed for identifying and guiding each child’s developmental progress.

The studies conducted have recognized that maturity range of children in a typical classroom is four to six years. The objectives and activities of the middle school children are organized into three major developmental levels, I, II and III. These levels allow progression for learning based on the maturation and experience of students rather than their age alone. It is the duty of effective teachers to allow progress at different rates. The developmental levels help the teachers to understand that age and grade levels are only rough indications of a child’s maturity and experience. The changes within offer the teachers the flexibility to gear instruction to match closely with the student ability levels. A good attitude toward the need to acquire and maintain physical fitness can be gained best through a good developmental physical education programme. Starting in the primary and then middle grade children should be taught not only the skills of fitness but also the qualities of physical fitness. Some realisation of fitness would be inherent in every activity presented in daily lesson. Provided with a programme planned for maximum participation for all, most children in the middle school should have few deficiencies in fitness qualities. Physical fitness involves the development of the physical qualities needed to enable the individuals to function efficiently in their environment. Physical fitness is not only one of the most important keys to a healthy body but also is the basis of dynamic and creative intellectual activity.5

Recently the research dealing with teaching in physical education has increased dramatically during the past five years. There seems a great concern among the professionals of physical education with the need to enhance the effectiveness of instruction.

The National Children's Physical Fitness study conducted by the U.S. Government and the concern for enhancing health related fitness are the two major trends that have influenced physical fitness of children. As a result two pronged approach to fitness was encouraged in developing fitness and teaching children how to evaluate and develop their fitness levels.

Among the various objectives of physical education the first and the foremost objective is the programme should provide all children with the opportunity to develop maintain the level of physical fitness commensurate with individual needs and also develop an understanding of how to maintain fitness for a lifetime of activity.6

Physical fitness

Physical fitness is one of the goals of education since an appropriate level of fitness is essential to meet the needs of the individual and the society. Physical education can make an important contribution to fitness, which cannot be accomplished by any other curriculum area. Physical fitness is the ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies. It is the ability to last, to bear up, to withstand stress and to preserve under difficult circumstances where an unfit person would quit.7

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7 Daves Sidener, Jacqueline Berkowitz and JudithKis, Elementary Physical Education Methods (New Jersey: Englewood Cliffs: Prentice Hall Inc. 1984 p. 64
Physical fitness is a positive state of well-being influenced by regular, vigorous physical activity, genetic make up and nutritional adequacy.8

A child is able to function in his environment according to the level of physical fitness he possesses. Physical fitness is the condition of the body necessary for a person to carry out daily tasks without undue fatigue yet have enough energy to pursue leisure activities and meet emergency situations required additional exertion. This definition implies that if a person must develop and maintain muscle strength, endurance and cardio-vascular efficiency, he must be free from disease, make compensation of adjustments for chronic physical handicaps and maintain optimum weight. All these factors are interrelated and are all dependent upon physical exercise. They are also basic elements which underlie the capacity for learning motor skills.

Establishing the desire and need in children to maintain fitness is more important than the actual level if fitness established at a given time since the maintenance of an appropriate level of fitness in later years is a long range goal.9

Physical educators must also encourage a positive attitude toward the importance of fitness. The child should understand the values, the need for and the skills related to acquiring and maintaining physical fitness.

Values of physical fitness

A physically fit person possesses the strength and the stamina to perform daily task without undue fatigue and has enough energy left to enjoy leisure time activity and to deal with emergencies. Strength, muscular endurance, flexibility
and cardio-vascular endurance are qualities of fitness that are to be developed through planned progressive activity based on sound programme giving importance to posture and body composition.

Peer status and relationships are also improved for a child who is physically fit. The relationship between physical fitness and motor learning is strong as the qualities of physical fitness such as strength, endurance, power etc. are needed for optimum skill development.  

**Components of physical fitness**

There are a number of components that contribute to the attainment of efficient work habits. Actually these components are basic to all good movement. Some of them contribute more than others to physical fitness. A person may possess a high degree of one and not of another. The fit person attains a degree in most of the components.

It is now common to separate those qualities that are primarily related to the learning of skills from those qualities that are physiological capacities of the body. Aspects of skill learning, co-ordination, balance, speed and agility are considered motor fitness components related to learned neuromuscular control patterns. They do not respond to progressive over loading physiological capacities including muscle strength, muscle endurance, flexibility and cardio respiratory endurance considered physical fitness components. Considering this separation of qualities physical fitness can be defined as the functional capacity
of the various systems of the body that support exercise, specifically muscle strength, muscle endurance, flexibility and cardio respiratory endurance.\(^{11}\)

**Strength**

One of the basic components to success in all movement is strength. Muscular strength is defined as the amount of force that can be exerted by a particular muscle. The strength of a muscle is dependent on its size and quality. Muscles grow in size in relation to general growth, nutrition and amount of exercise. Varying degrees of strength needed in muscles are dependent upon the type of work or activity that is to be done beyond the ordinary daily needs.\(^{12}\)

The development of strength is specific to the muscle or muscles involved in a particular exercise or activity.

**Endurance**

These are two types of endurance muscular and cardio-vascular. Muscular endurance is endurance to the extent to which the individual muscle can continue to contract over a period of time. Cardio-vascular endurance is related to work or contractions of large muscle groups over long period of time.

In order to develop both types of endurance and strength they must be pushed to do a little more or a little harder then they did the time before. The amount of extra efforts needed vary for each child in relation to his or her present status.\(^{13}\)

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\(^{11}\)John M. Dunn Special Physical Education Adapted Individualized Developmental (7th ed) USA: Times Mirror Higher Education Group Inc. 1997 p. 508


\(^{13}\)Ibid p. 209
Agility

Agility is the ability of a person to change direction or body position quickly and regain poise or control to proceed with another movement. Agility is highly dependent upon or inter related with speed, strength, balance and coordination. It is developed through practice and confidence in movement. The acquisition of agility is not only important to success in games and sports requiring quick changes of direction and dodging of objects or other people, but also to safety outside of the play situation. Instruction and opportunities to participate in activities requiring fast start stops and changes of direction should be included in the daily programme.\(^\text{14}\)

Flexibility

Flexibility is the range of movement in a joint. The degree of flexibility determines the extent of extension and flexion of a joint and consequent body action in terms of bending, reaching, twisting and turning. The degree of flexibility is first determined by the nature of joint itself and then by the ligaments and muscles related to joint. Flexibility is very specific to each joint. One may be quite flexible in one area but not in another. Within the limitations of the bone structure and the condition of the ligaments, range of movement can be expanded through exercise of stretching the muscle.

A high degree flexibility not only enables a child to perform some activities more efficiently, but it also provides a safety factor in terms of absorbing sudden shocks or blows around vulnerable joint areas. The knee and ankle joint are prone to sudden jolts in everyday activities.\(^\text{15}\)

\(^\text{14}\)Ibid. 209
Power

Power is the use of strength to apply force in a particular task.\textsuperscript{16}

It is the capacity of the body to release maximum force or muscle contraction in the shortest possible time. Power denotes explosive movements, a release of maximum force at maximum speed. Power is highly dependent upon the elements of speed and strength. Power is important in performance of jumping, riding for distance, throwing for distance, charging an object or opponent, starting a run with a fast take-off or sudden burst of speed, or pulling away from an assailant. It can be improved through gains in strength and practice of the above activities.

Speed

Speed is the ability to move the body quickly.\textsuperscript{17}

Speed is the rapidity with which one repeats successive movements of the same pattern. Great speed in muscle contraction is not always conducive to the greatest efficiency of movement. It seems that there is an optimum speed at which muscles contract with the greatest conservation of energy for the amount of work done.

Success in some activities is highly dependent upon how one can move body parts or the whole body from one place to another. This need is also inherent in some occupations or in the face of imminent dangers. Speed of

\textsuperscript{16}Beverly, Nicholas Moving and Learning The Elementary School Physical Education Experience (3rd Ed.) St. Louis: Mosby Year Book Inc. 1994 p 244
\textsuperscript{17}Ibid p 244
movement can be improved through practice for good techniques and efficiency of movement.

**Balance**

Balance is the ability to maintain a desired position of the body whether in a static or held position or in a dynamic or moving state. It denotes a degree of stability and ease in control of body in specific position.\(^8\)

Balance is an important factor in most of the games, sports, dance and gymnastic activities. Most life and work activities require good balance in order to prevent falls and accidents. The balance can be improved through exposure to and practice of balance activities.

**Co-ordination**

Co-ordination is the ability to integrate muscle movements into an efficient pattern of movement. Co-ordination makes the difference between good performance and poor performance. The efficiency of skill patterns depends upon the inter-relationship of speed, agility, balance and muscle movements into a well coordinated pattern.

Good co-ordination is not essential for good performance in sport and skill games but it is also vital to all daily and vocational tasks where efficient movement and conservation of energy are important. Only a great deal of guided practice of specific skills will produce well co-ordinated movements. Many factors contribute to the development of physical fitness.\(^9\)

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\(^9\)Ibid p. 5
Everyone has some degree of fitness, and can improve upon their present status. Teachers must know how to determine and interpret status before they can set expectations of ultimate attainment.

Although physical fitness had always been considered as an important goal in physical education, a renewed emphasis on fitness occurred in 1950s following the publication of comparative studies of fitness levels of US and European children which were based on the Kraus-Weber Test. This emphasis on fitness had an impact on elementary physical education programme.

The national concern for sub par fitness levels in children made school administrators more aware of the contribution that physical education could make to the growth and development of the children.

Heredity determines physique or basic body build. Intrinsic factors and environment control growth whereas physical exercise stimulates growth of the body tissues, organs and bones and is essential to optimum physical development. During childhood for the proper development of the functional capacity of the heart, lungs and the strength of bones and muscles, physical exercise is important. If these remain under developed during the growing years, the opportunity for optimal development of these organ systems would likely be lost.

A number of studies conducted in the United States showed that there was a lack of fitness among American Children. Hence fitness became easily identified part of each lesson. But no single phase of physical education could be
ignored at the expense of another. Physical education had to be a systematic and progressive programme that should reach out to children from all walks of life.

**Health**

The status of children provides the limits or the extent of the minimum fitness level that we can expect of them. Expecting a child with health problems to achieve a high level of physical fitness is as unrealistic as expecting a racing car without fuel to win a race. The physical education Teacher has two major responsibilities in regard to the health status of each pupil. One is to identify pupils whose health level or habits appear to be below normal and then refer them to the proper authorities for examination and treatment.

The second responsibility is to be acquainted with and understand the health status of each child. This also includes an understanding of the limitations and fitness needs of children who have physical defects that are not remediable such as structural malformations, deafness, partial loss of sights and heart conditions. Modifications of exercise and activities may have to be developed for a child with a particular handicap. The inactivity induced by even a brief confinement in bed results is a depreciation of strength and endurance.

**Assessing physical fitness**

Everyone agrees with the idea of testing or assessing children, to determine their progress and their needs but it is rarely done in middle school physical education classes. Since the components of physical fitness are specific and not necessarily inter-related, there is a need to select a variety of tests to determine specific areas of weakness in individuals. The selections must be
prudent, as the administration of a great number of tests is very time consuming. The results of the tests can be used to diagnose the physical fitness status of each child, to identify, those needing special help; to measure achievement and to aid in planning of program activities.²⁰

In the first and second grades, children do not always exert maximum effort in performance and it is difficult to assess fitness status. Most children at third grade level become extremely interested in testing. Typically, they develop a desire to best their own performance. Test of strength, speed, speed, power and endurance will help to identify the underachievers and will also prove highly motivating. There are very few physical fitness test batteries recommended for use with children below the forth grade. A few tests that may be administered to middle grade children to use as a screening device to identify the underachievers are sit ups, shuttle run, standing broad jump, sea crawl.

Before setting up a proper exercise programme for an individual, the physical fitness appraisal has to be made. After test has been given they must be analysed. The teacher must study them in terms of group and individual status and achievement to ascertain which of the components of fitness were not adequately developed through the activities presented in the regular programme.

In the case of children who fail to meet minimum levels the teacher should talk with each child and make plans for individual improvement.

If a child is unable to achieve much success in tests it is logical to assume

that his or her attitude towards plunging into strenuous exercise programme may be apprehensive or negative. It is possible that the major reason for the poor fitness level is simply a poor attitude toward exercise or even a poor attitude fostered by parents. Motivating the child to desire a high fitness level is essential before any progress can be made. Fitness is very personal and specific and therefore personalized fitness programme must be developed.

Physical educators have a very real responsibility to their students and the community in the area of physical fitness and its role in total individual fitness. Teachers have a dual role in explaining to students and parents alike the overall story of total fitness and the components of physical fitness.21

Taking a deep inspiration from the values of physical fitness and the teacher's role in developing a positive attitude towards accomplishing the physical fitness, the scholar made an attempt to motivate the middle school children by assessing the physical fitness status and make them aware about their own level of fitness.

Hence in the present study an attempt has been made to understand and analyze the status of physical fitness level of middle school children. To know is to understand is to improve; is the maxim which the scholar is likely to follow in the conduct of this study.

1.1 Need of the Study

The present study an attempt has been made to understand and analyse the status of physical fitness level of the middle school children. To know is to

understand and understand is to improve, is the maximum, which the scholar is likely to follow in the conduct of this study.

1.2 Objectives of the Study

Assessment of the physical fitness status of middle grade children in Delhi.

Development of Physical Fitness norms for middle school children.

Assessing the strength and weaknesses in each of the components.

1.3. Statement of the problem

The purpose of the study was to assess the physical fitness status of the middle school grade children in Delhi.

Objectives

Assessment of the physical fitness status of the middle grade children in Delhi.

Development of physical fitness norms for middle grade children.

Assessing the strength and weaknesses in each of the components.

1.4. Definitions and the explanations of the terms

Physical fitness

According to Harison Clarke physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to engage in leisure time pursuits and meet emergency situations.

Movement education

Programme in the middle school level that focus on developing concepts and skills of basic movement are often referred to as ‘movement education’.23

Process

Process is involved with how something is learned and how the learner feels about the learning. Process is usually concerned with long range effects of the learning.24

Product

Product is primarily with the outcome or end result. Product evaluation focuses on performance outcomes in terms of measurable increments of what the child can do.25

Percentiles

A percentile indicates that point at which a certain percentage of scores lies above and a certain percentage falls below. The percentage table does not equal scale units of uniform length. It may be effectively used as a method to show relative standing of individuals in terms of rank. The advantage of using percentile as a norm or standard is the ease of interpretation by both pupil and teacher.26

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1.5. Significance of the Study

The findings of the study are of significance in the following ways.

Assessment of physical fitness level of the middle grade children could help the physical education teachers to know the present status of their children and modify their programme accordingly.

The study would throw light on the possible ways to be adopted for the improvement of the physical fitness level of the middle grade children.

The results of the study would help in creating awareness about physical fitness, among pupils, teachers and parents.

The norms once constructed would have paved the way for future research and improvement of the physical education programme in schools.

1.6. Delimitation

A survey has been conducted in the middle sections of the schools in Delhi and it has found that the average age group is eleven to fifteen years and hence the study is delimited to the age groups of eleven to fifteen.

1.7. Limitations

As the subjects selected for the study were from different schools, factors like diet, daily routine and the like could have affected the results of the study and that could not be controlled. Even though every attempt was made to standardize the testing procedure, variations might have occurred due to the fact that the help of various individuals sought was considered as a limitation of the study.