Chapter I

INTRODUCTION

The modern age of technology and science and of development of arts and letters with the growing knowledge and recognition of the intellectual's role in society has cast its deep imprint on the modern Indian society. There is little doubt that the individual in the contemporary society still lives an institutional life in a traditional set up transmitted to him by his culture, and under various obligations of blood tie, family roles, kinship behaviour, age old convention, ethos and value ideals. And though much of his personality and behaviour is shaped by the cultural heritage, unlike his predecessor of pre twentieth century era, he is not absolutely free from the influence of his modern environment in which new ideas, new outlook and new theories of life are fast developing.¹

Education is the only instrument to affect such social change. But this is a task of great magnitude requiring a gigantic effort. A multi-pronged approach is necessary to achieve this aim considering India's vast

geographical limit, her regional economic imbalances, and frequent national calamities, the diversified cultural ethnic groups with their linguistic and religious differences, and lastly, the rapid rate of population growth and slow rate of economic development in general.

Man confronts unequal conditions of wealth, power and prestige in society. All these are related to the concepts of social status and social class. The concept of social class denotes possession or nonpossession of not only wealth but many other social privileges which can be purchased with money. It is very much possible that social class, social privileges and social status in positive form or in the so called fortunate form became available as a cluster at one common social point. Whether it is tolerable or not to find them in either as a cluster or as a nought is a separate question. But the bare fact is that they do exist as such. Such differences count for the social classes mean differing patterns of expectations and attitudes and differing habits of mind and behaviour that distinguish one man from another in society, and if allowed to be extended, one educand from another or one group of educands from another group of educands in a school. More so the effects of class differences on school children is so consistent and continuing that any effort by school to eliminate it normally proves fruitless. It has been observed that many of the class differences are
acutely subtle and interactable. The result is social stratification. Such class differences affect the educational opportunities of the educands.

To aggravate things social classes with means buy the best possible education for their children while children from low class have to study where education is least expensive never minding the quality of education.

When wealth matters so much in the education of a child, should it mean that upper and middle classes will stay as upper and middle and lower class as constantly lower and be denied social justice and suffer social inequality? Should a child in a free country but belonging to the lower social class have no access to good education just because of his social background? Or, in other words, should social makeup of his society debar him from good education, or to say, should society give him no freedom for good education? The truth is that the idea of social inequality is inconsistent with welfare state or with a democratic society. This is why we find in democratic countries of today that emphasis is laid on equality of opportunity for education whereby all children have the equal opportunity to utilize their intelligence, demonstrate their potentialities and display their aptitudes so that the most appropriate education is provided to them.
Through education man has the freedom today in moving to the higher position in the social structure. In ancient India, no doubt, social class or caste determined the social status of a person. Education did not raise any one's social status. Social class itself, of course, gave the man the particular type of education according to his status in life. Society had its control on the education of a man. His ability, his social status as derived from his parents, his wealth did not appear to have any effect favourably or unfavourably on his education.

Whereas education raises the social position of man, secondary education very often seems to downgrade an educand socially. Secondary school has become a distributive agency of social positions and social privileges through its scheme of selecting only the suitable pupils for its differing courses. To many, who are rejected for courses they aspired for, it confronts with the threat of downward social mobility. Such social demotion is a discontinuity of their social place. Thus social status and social security are further bound with educational achievements of a child or the trend of social mobility is decided by the educational achievements of people.

Moreover, the school culture also affects the future social status of the educand. School culture that can be
talked in terms of rewards and punishments, system of
giving grades (numerical or verbal) and promotion in
proportion to the proficiency shown by a pupil in skills
and knowledge acquired by him produces motivating effect
on him furthering him ahead through school grades, contin-
uing his education longer and, eventually, to moving him
upward in occupational and social status. Sometimes,
school culture, instead of maintaining or enhancing the
freedom of a child for higher social status, is seen in
the case of a conceivably less able pupil discouragingly
pushing him downward academically, occupationally and
socially and thus mitigating his freedom for better social
status and privileges.

Thus, formal education as an institution gives social
efficiency to the child, and such knowledge, technical
skills, occupational proficiency, social behaviour, manners
and graces by which a child finds itself ownself developed to
the maximum degree.  

Planning in India was adopted to result in greater
equality in income and wealth and that benefits of develop-
ment should accrue more and more to the relatively less

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2Vimla Mallick, Socio Cultural Freedom and Education
privileged class specially in terms of economic and educational interest.\textsuperscript{3}

Education and socio-economic status are closely related. Secondary education is a very important stage of education in the educational system of any country. Majority of people will have either lower secondary stage or higher secondary stage as their final educational career. Hence it is a stage which is concerned with the majority of population.

The inequalities in academic achievement because of chronic poverty or economic disparities from which majority of people are suffering does not enable them to avail of the equalization of educational opportunity provided to them. They have low economic status, cultural background and educationally retarded conditions at their homes. The existence of residential differences, difference in educational standards of schools and application of the same yard stick to the rural and urban population of students in educational measurement who lack equal mental opportunity are some of the socio-economic factors which affect academic achievement of the children. Traditional closed social stratification based on caste system is also a

responsible factor which discriminates the academic achievement in the Indian society.  

Like all areas of social life sport has been greatly influenced by the institutionalized division and inequalities that serve to differentiate societies. "All men are created equal" the idea of equality in a democracy has come to be equality of opportunity and this concept is of great interest to education because it underlies the whole process of developing the young. Only as every child has an opportunity to develop his unique and inherent powers and capacities can the fullness of himself be realized and the nation receive the contribution of his life. It is because of socio-economic status that this equality of opportunity may be violated in facilities and equipment as well as in programme.

Health is the normal development and functioning of all organs and systems of the human body which ensure its creative activity under specific historical conditions.


(the social system, work, everyday life, exercise, rest, nutrition etc.). Health is man's main asset, the most important condition of his social and creative activity.\(^6\)

Health does not exist in isolation. It is influenced by a complex of genetic, environmental (macro environment - water, air, food etc., micro environment - occupational environment, socio-economic environment and moral environment) social and economic factors related to each other.\(^7\)

The state of one's health is influenced by hereditary factors, nutrition and environment. The total environment involves work place, school, home, community, and recreational pursuits. A child spends only about one third of the time at school and the rest at home and community. To optimize the child's health, we must be concerned with factors that influence the total environment, not just one part of it. The total environment which influences one's health is greatly affected by the socio-economic factor which has created many distinct classes in the society and


due to this some get the best things which are essential for good health and some get none or are forced to compromise with the minimum.  

Exercise has a definite role in preserving the health of the cardiovascular system and also prolonging the life. Less active or under-exercised individuals have an earlier and greater cardiovascular morbidity and mortality and their cardiac performance under stress is inferior to that of, say, the trained sportsman or a lumberjack. Deterioration which determines the length of life may be hastened or delayed by long term training or exercise.

Merwe and Suzane\(^9\) found that physical fitness is positively related to health status. It is now widely assumed that a high level of fitness will lead to improved cardiac health, but there is surprisingly little direct proof to this hypothesis.

Appropriate physical activity may be a valuable tool in therapeutic regimens for control and amelioration


(rehabilitation) of obesity, coronary heart disease, hypertension, diabetes, musculo-skeletal problems, respiratory diseases, stress and depression anxiety.\textsuperscript{10}

Appleton\textsuperscript{11} found no significant relationship between physical ability and scholastic success. Baker\textsuperscript{12} found positive and significant correlation between physical fitness and academic achievement but it was low. Broekhaff\textsuperscript{13} determined that high physical fitness index boys tended to perform well in their school work.

It has been clearly established that at least minimum levels of physical fitness are essential to scholastic


\textsuperscript{13} Jan Broekhaff, "Relationship Between Physical, Socio-Psychological and Mental Characteristics of Thirteen Year Old Boys," Completed Research in Health, Physical Education and Recreation 9 (1967):91.
achievement. If a child is sickly, lacks such qualities as strength and endurance, complete attention cannot be given to school work. It becomes difficult to concentrate, and absence from school often becomes a problem. A child who is successful in school work is more often than not physically fit and healthy person.\(^1^4\)

Studies conducted at Universities of Oregon, Iowa, Syracuse and West Point, have shown a significant relationship between physical fitness and academic success. David Brace, F.R. Rogers, Clayton Shay, Marcia Hart, and others have done extensive research showing relationships between scholastic and academic success and physical fitness.\(^1^5\)

Blaylock\(^1^6\) correlated school and college ability test scores with each item of Barrow motor ability test and found that none of the correlation coefficients was

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significant ($P > .05$). Hawkers$^{17}$ showed insignificant correlation of motor ability test scores with cumulative grade point average. Jarman$^{18}$ found negative correlation between motor ability and academic achievement.

Typical of research studies confirming the relationship between motor skills and academic achievement is that of G.L. Rarick and Robert Mackee, who studied 20 third graders grouped according to their motor performance. The study showed that the group with high motor proficiency had a greater number who achieved excellent or good ratings in reading, writing and comprehension than the group with low motor efficiency. In another study, Jack Keogh and David Benson experimented with the motor characteristics of the under achieving boys and found that, as individuals, half of the boys exhibited poor motor performance. Humphery found that motor activities were beneficial in developing skills and concepts in reading, mathematics, and science.


He indicates that if an academic skill or concept is practiced during a physical education activity, that skill or concept is learned faster. Humphery further indicates that many advanced academic skills and concepts can be introduced to children at an early age through the use of motor activities as a vehicle for learning and academic achievement. A.H. Ismail, N.C. Kephart, and C.C. Cowell, utilizing motor aptitude tests, found that IQ and academic success could be predicted from these tests, with balance and coordination items the best predictors for estimating achievement.19

Through years of observation and experience with young people in learning situations, educators have become well aware of the direct link between the physical and mental health status of the student and his ability to learn. It is not difficult to recall in one's own experience those days on which because of such conditions as a severe headache, a missed breakfast, or a great disappointment, the ability to concentrate on a particular lesson was lost, thereby negating the benefit of the learning experience.

Arnett\textsuperscript{20} discovered that health and vitality of a student aids him in achieving his academic potential. Marie\textsuperscript{21} found that health problems are associated with the problems in educational achievement. Zimmerman\textsuperscript{22} found significant relationship between academic scores and health factors. Brown et al.\textsuperscript{23} found that health problems were moderately related to academic variables and this relationship is influenced by family socio-economic variables.

Everything strives for self expression,  
Every atom is a candidate for perfection;  
Without a passion for growth life is death.  
The whole universe is busy in building itself,  
The power of individuality makes a grain of mustard into a mountain.  

Dr. Iqbal  
"Secret of the Self"

As individual develops, the power and capacities of man become sharpened and well defined. To quote Iqbal,


his uneasing reward consists in his gradual growth and
self possession, in uniqueness and intensity of activity
as an ego. He quotes the Quranic Verse "Blessed is he who
both made it grow and undone is he who hath corrupted
it."24

(For some years now the term "education" has been
narrowly used to designate the curriculum followed in the
school and the extent of schooling. Now educators have
realized that the general term 'education' had restricted
the outlook and focused attention on routine teaching and
hence they have attempted to give it a broad base and wider
scope and objective. Redden defines education as the deli-
berate and systematic influence, exerted by the mature
person upon the immature, through instruction, discipline
and harmonious development of physical, intellectual,
aesthetic, social and spiritual powers of human being
according to individual and social needs and directed
towards the union of the educand with his creator. Simi-
larly physical education in schools was earlier considered
to be extra curricular activity and was pushed to the back
seats, whereas now it is accepted as co-curricular activity.
Large majority of our students have problems like poor

24 J.S. Walia, Principles and Methods of Education
health, postural defects, over or under weight, defective sense organs etc. Physical education comes as an appropriate sub system of our educational system and tries to identify the problems of a student, attempts to offer remedial suggestions and practical hints for wholesome development. 25

Physical education and sport, as an essential dimension of education and culture must develop the abilities, will power and self discipline of every human being as a fully integrated member of society. The continuity of physical activity and the practice of sports must be ensured throughout life by means of a global, life long and democratized education. At the individual level, physical education and sport contribute to the maintenance and improvement of health, provide a wholesome leisure-time occupation and enable man to overcome the drawbacks of modern living. At the community level, they enrich social relations and develop fair play which is essential not only to sport itself but also to life in society. Every overall education system must assign the requisite place and importance to physical education and sport in

order to establish a balance and strengthen links between physical activities and components of education.\textsuperscript{26}

Due to the demands of the modern world more and more is being required of the individual in the way of mental and emotional stresses and less and less in the way of physical activity. The biological need for exercise is permanent and while man's culture no longer requires it for survival, his biological nature does. Man must choose to engage in some form of strenuous physical movement since his environment no longer forces him to activity. If he does not choose to exercise he faces degenerative effects biologically.\textsuperscript{27}

Among the recognized objectives of physical education are the objectives of developing physical fitness, motor ability, health status. Physical education programme leads to improved physical fitness, motor ability and health which is vital to the education and academic achievement of every boy and girl.\textsuperscript{26}


\textsuperscript{28}Bucher, Foundations of Physical Education and Sport, p.365.
Socio-economic status of a child is very closely related to physical fitness, motor ability, health status and academic achievement. A child with good or high socio-economic status will have access to better education, food and nutrition, health care, environment, physical education facilities and opportunities which will affect his physical fitness, motor ability, health status and academic achievement.

Very strenuous activity requires an appropriate level of fitness. If the skill potential is to be realized resulting in a pleasurable experience, a fitness requirement must be met. Normally, the fitness level improves along with skill level as the activity is practiced. There is parallel requirement in fitness and skill over a period of participation. The judo performer must be fit in order to absorb the falls and he must be skilled in throwing and countering. A dancer without a high level of fitness, including exceptional flexibility cannot express herself creatively.²⁹

developing one's skill level in several of these activities is important because the higher the person's skill level the more likely he is to participate in it and more it will contribute to the development of physical fitness.\textsuperscript{30}

\textit{Motor ability skills are fundamentally universal in nature. Although they do furnish basis for specialized play and work skills, yet they are simple basic skills that are acquired in childhood and in early youth. Through repeated play and movements these basic skills become generalised and can be used for varied sports and to develop the physical fitness.}\textsuperscript{31}

The health benefits associated with regular physical fitness and exercise have not yet been fully defined. Based on what is known it appears that substantial physical and emotional benefits, direct and indirect, are possible. Some of the health implications related with the exercise are: most people feel better when they exercise, physical inactivity can result in decreased physical working


\textsuperscript{31} Barrow, \textit{Man and Movement: Principles of Physical Education}, p.224.
capacity at all ages, with concomitant decreases in physiologic function and health status, physical inactivity is associated with an increased risk of developing obesity and its disease correlates, and physical inactivity is associated with increased risk of coronary heart disease.\(^{32}\)

Scientific evidence indicates that the individual who does hard physical work or who exercises consistently has a more efficient organism, is less susceptible to illness, and will probably live longer. Exercise has a favourable influence not only on the growth process, but on human development as a whole throughout the life and is one of the most important factors to the maintenance of good health and enables the individual to do more work with greater efficiency.

Nutrition, diet, body weight and exercise are all closely related. Inactivity is the most important single factor causing overweight. In highly mechanized sedentary existence, the individual's life must be reorganized, either to regulate food intake to the level of physical activity or to increase physical activity to the level of food intake. Fitness and health are the distances of the organism from the temporary or chronic fatigue. A fit

individual can live a vigorous daily life without distress.\footnote{33}

Out of all the research evidence on man's physical state, one fact seems clear: an individual can advance his fitness level significantly so that over a period of years it correlates favourably with health.\footnote{34}

Physical fitness does and must rest on a basis of good general health. Health is the resultant of many factors and influences, some fully, some partly, some not at all with our personal or collective control. At the bottom lies "constitution" - the "make" as it were, of the individual body, the inborn tendency for it to grow, work and react in a particular way peculiar to itself.\footnote{35}

How you look, how you feel, how efficiently you perform your daily activities, and how healthy you are depends in large measure upon the fitness. It is recognized that regular physical activity is essential for optimal


\footnote{34}Ibid.

health regardless of age, sex, occupation or social class. Achieving and maintaining physical fitness and health is reasonably hard work. It is very well known that health is at stake, there should be provision for regular exercise, preferably sports or other enjoyable physical activity. Inspite of variety of activities, one need to recognize the folly of omitting from broad education those activities which will help you develop the knowledge, attitudes, and skills necessary for keeping your fitness at high level.  

Good health generated by physical fitness is the logical and necessary starting point for the pursuit of excellence in any field. Physical vitality promotes mental vitality and this is essential to academic achievement. Physical fitness makes us work better, look better and feel better.  

Heinz compares physical fitness with the "trunk of a tree that supports the many branches which represent all

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the activities that make life worth living: intellectual life, spiritual life, occupation, love life and social activities. Let something happen to the trunk of the tree that weakens it and all the rest of the tree will wither and finally perish.

Today many young people from a variety of socio-economic backgrounds are seeking higher education. Although some of these youngsters are academically capable they may have limited confidence to pursue their interests, feel inadequate to capitalize on their physical potential, or lack financial resources to attend a university or college.

Awareness of both the physical and mental potential improves a student's educational option. Young people who show promise in athletic ability often have great opportunities to win scholarship. Approaches by educators can be made to help youngsters become more aware of their physical potential. Sometimes youngsters are not aware of their physical potential, even though they may be achieving academically. 39

Associated with the concept that physical fitness is a human quality basic to the meeting of life's problems

is the belief held by some that a physically vigorous and enduring body improves the effectiveness of the individual's mental capabilities. For example, as a result of observing low fitness individuals for many years, Roger maintained that physically unfit boys and girls at all levels of intelligence have greater difficulty in continuing mental effort and remaining mentally alert. He also contended that the potential for learning depends upon both intelligence and physical fitness. This could be interpreted to mean that a person's learning potential for a given level of intelligence is increased or decreased in accordance with his or her level of physical fitness, thus affecting his or her academic achievement accordingly.40

Reports by Gesell41 and the result of other studies indicate that there seems to be very little relationship between malnutrition and motor ability. Children with rickets seem to do about as well on motor tests as do children without rickets. Eventhough the limited data do


not indicate that malnutrition is a significant factor in the development of motor skills, general observations and common sense lead one to believe that if one hopes to have good general health and to do well in physical activities he should be adequately nourished.

D.H. Radler and N.C. Kephart wrote in their authoritative book *Success Through Play* that "motor activity of some kind underlies all behaviour including higher thought processes. In fact behaviour can function no better than do the basic motor abilities upon which it is based."\(^{42}\)

Children who have failed to follow the normal sequence of physical movement in the various stages of their growth and development frequently had learning problems and difficulties in their school work affecting their academic achievement adversely.\(^{43}\)

Achievement centre for children at Purdue University, where much research has been done on children with academic difficulties gives a specially designed programme of motor


activity under skilled leadership. As a result academic and physical improvement are termed miraculous by parents principal and class room teacher. It results in improved report card in every subject and child starts participating in a full schedule of classroom activities. At the centre children are helped to improve academically by taking part in a program of motor activities used as an integral part of a perceptual motor training program.

By the development of desirable activities and the application of health knowledge the students achieve maximum strength, energy, endurance, recuperative power, and sensory activity and they understand and appreciate the value of good health as a means of achieving their greatest productivity, effectiveness, and happiness as individuals.\textsuperscript{44}

Educators, physicians and other health care professionals have long assumed that healthy children learn more effectively and efficiently than children who have health problems.\textsuperscript{45}

\textsuperscript{44}Bucher, \textit{Foundations of Physical Education and Sports}, p.366.

\textsuperscript{45}Brown et al.; \textit{Journal of School Health}, p.21.
Education and health have enjoyed a long close relationship which implies that one needs to be educated in order to develop and protect one's health and one needs abundant health to make full use of one's education. It is a reciprocal - and actual relationship.\textsuperscript{46}

Physical education has value for the total development of the individual, that is, the physical, mental, emotional and social aspects of each individual. These are interrelated, each one complementing the other.\textsuperscript{47}

The evidence to date seems to establish that physical education programme leads to improved physical and social fitness and health is vital to the education and academic achievement of every boy and girl.

This fact has been recognized throughout history by some of the world's most profound thinkers. Socrates stressed that poor health can contribute to grave mistakes in thinking. Comenius noted that "intellectual progress

\textsuperscript{46}Leslie W. Irwin et al., Health in Elementary School (St. Louis: The C.V. Mosby Company, 1966), p.18.

is conditioned at every step by bodily vigor. To attain the best results, physical exercise must accompany and condition mental training." Rousseau observed that "an enfeebled body enervated the mind," and included a rich programme of physical activities for Emile.

Arnold Gesell, Arthur T. Jersild and Jean Piaget found that a child's earliest learning is motor in nature, involving neuromuscular systems and resulting in movement such as running, jumping, reaching and the like, and form the foundation for subsequent learning.

It is an accepted fact that a healthy body and robust physique are prerequisites for the healthy growth of mind and physical education is in the process of change and transformation so that it is in the main stream of academic life. In the changing social order and in the changing demands of the nation, this transformation of physical education finds meaning and purposive implication.

Although it is strongly believed that physical fitness, motor ability, health status and academic achievement are interrelated and have bearing on one another it has not been established scientifically till today. Hence the present study was undertaken.
Statement of the Problem

The purpose of this investigation was to study the interrelationships among physical fitness, motor ability, health status and academic achievement of higher secondary boys belonging to different socio-economic groups.

Delimitations

1. The study was delimited to the schools situated in the urban areas of Greater Gwalior.

2. The study was further delimited to the male students.

Limitations

1. As the subjects for this study were from different religions, casts and backgrounds, certain factors like diet, daily routine, life style, habits etc. which might have affected the results of this study could not be controlled.

2. No special motivational technique was used during the test. Therefore, the differences that might have occurred in performance on physical fitness test and motor ability test due to lack of motivation was recognized as the limitation of the study.

3. Different curricula and grading systems in examination found in the schools from where subjects were selected for the award of percentage of marks obtained in the final
examination was considered as another limitation of the study.

**Hypotheses**

On the basis of literature reviewed, research findings and scholar's own understanding of the problem the following hypotheses were formulated:

1. There will be no significant relationship between physical fitness and health status, physical fitness and academic achievement, motor ability and health status, motor ability and academic achievement and health status and academic achievement of subjects belonging to different socio-economic groups.

2. There will be significant relationship between physical fitness and motor ability of subjects belonging different socio-economic groups.

**Definition and Explanation of Terms**

**Physical Fitness**

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.\(^{48}\)

Karpovich defines physical fitness as the total functional capacity of an individual to perform a given task. The ultimate task of physical fitness is the ability of an individual to carry out a desired task to successful completion without undue fatigue. A person possessing it should meet certain physical requirements in his or her day to day challenges through which he or she passes, otherwise it will be lost.

According to Johnson and Nelson physical fitness includes the elements of muscular strength, circulorespiratory endurance, flexibility and freedom from obesity.

For the purpose of the study physical fitness is represented by the index obtained after administering six different test items included in the AAHPERD Youth Fitness Test.

Motor Ability

Motor ability is the present acquired and innate ability to perform motor skills of a general or fundamental


nature, exclusive of highly specialized sports and gymnastic techniques.\textsuperscript{51,52,53}

For the purpose of this study motor ability refers to one's level of ability in a wide range of activities which has integrated composite of such individual traits as muscular strength, muscular endurance, muscular power, speed, agility, body balance, reaction time and coordination (arm, eye and foot eye).\textsuperscript{54,55}

Health Status

The term health status is used when speaking about the level of health of individuals and societies. Health

\begin{itemize}
  \item \textsuperscript{51} H.M. Barrow and Rosemary McGee, \textit{A Practical Approach to Measurement in Physical Education} (Philadelphia: Lea and Febiger, 1979), p.117.
  \item \textsuperscript{53} Johnson and Nelson, \textit{Practical Measurements for Evaluation in Physical Education}, p.354.
  \item \textsuperscript{54} Clarke, \textit{Application of Measurement to Health and Physical Education}, p.227.
  \item \textsuperscript{55} Johnson and Nelson, \textit{Practical Measurements for Evaluation in Physical Education}, p.354.
\end{itemize}
is not a static condition, rather it fluctuates continually in quality from conception to birth to death. Research scientists at present are trying to draw up a numerical scale to measure health status on which the figure 10 will indicate a perfect state of health; 9, 8 and 7 will make successive worsening states and zero will be equivalent to death. The search for a single global indicator for health status continues.\(^{56,57}\)

Clarke\(^{58}\) refers to health status as systematic efforts to assess pupil health through use of teacher observations, health histories, medical and dental examinations and screening tests, especially of vision, hearing and nutritional status.

Health status in this study refers to nutritional status which is obtained by applying Pelidesi's\(^{59}\) formula


\(^{57}\) Park and Park, Text Book of Preventive and Social Medicine, p. 19.

\(^{58}\) Clarke, Application of Measurement to Health and Physical Education, p. 51.

mentioned below:

\[ \text{Pelidesi} = \frac{3}{10} \times \frac{\text{Weight in Grams}}{\text{Sitting Height in Centimeters}} = 100 \text{ percent} \]

The formula makes use of height and weight which are considered to be important correlates of health status and when these two variables, recorded and interpreted, they reflect the patterns of growth and physical state (Health status) of individuals and indicate how the individuals deviate from the average in body size, build and nutritional status. 60

Academic Achievement

Academic achievement refers to the progress a child makes in school as measured by scores on achievement tests, grade point averages, promotion from grade to grade and development of proper attitudes. 61

For the purpose of this study the academic achievement of the student was assessed by % of marks obtained by them in their annual examination.

60 Park and Park, Text Book of Preventive and Social Medicine, p.467.

Socio Economic Status

Socio-economic status in terms of primary conditions and characteristics is determined through vocation, income and wealth, home and its location, education, activities and associations.62

For the purpose of this study socio-economic status is the status that an individual gets in his society by virtue of meeting certain norms of job, income, caste, education, possession of consumer articles etc. indicative of his ranking in the hierarchy of social scale and economic level.63

Significance of the Study

Education should cater to the all round development of the individuals through disciplines evolved in the course of mankind's long quest for usable knowledge, cultural understanding and intellectual power and no individual should be deprived of it because of caste, colour, creed and socio-economic status.


In a school all the children of one class are exposed to one curriculum and similar type of cocurricular activities but they differ in physical fitness, motor ability, health status and academic achievements and have different patterns of interrelationships among these variables and this may be due to the reason that these children belong to different socio-economic strata.

This study may make the following contributions:

1. The study may help the educators to understand the interrelationships of physical fitness, motor ability, health status and academic achievement across different socio-economic strata.

2. There is a great emphasis on class room subjects by both the teachers and the parents at the cost of other very important aspects of education. The result of this study may bring to light the importance of physical and health aspects of the educational system.

   findings of this study may help the education makers in understanding the importance of drafting the balanced curriculum placing equal emphasis on all the subjects.

4. The study may motivate other physical educators to take up similar studies with some other variables and other category of students.