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Changing Trends of Scientific Research in Physical Education

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Abstract

Physical education and sport is integral part of curriculum of the Higher Education system. Physical education forms the basics of a healthy, happy and harmonious life. It helps in the development of a well – balanced, well –integrated and vitally alive human personality. It inculcates the habits of self discipline, self control, toleration and forbearance, fortitude and spirit of sportsmanship, that enable a person to withstand life's setbacks and shocks and brave all risks and hazards with a smiling face and quiet graceful demeanor. This paper reveals the objectives of Physical education and its contribution to general education at every level of education. In modern era, physical education and sport training has become scientific in its nature. For better health of individual and optimal performances of an athlete at tournaments the scientific approach is need of the hour. This can be achieved only by the scientific research in the field of physical education. With scientific research we can make human generations to lead healthy life as well as it helps to assist in coaching, training and analyzing the athletes.

Keywords: Physical Education, Health, Research, Yoga, Happiness, Wellness.

Introduction

Physical education forms the basics of a healthy, happy and harmonious life. It helps in the development of a well – balanced, well –integrated and vitally alive human personality. It inculcates the habits of self discipline, self control, toleration and forbearance, fortitude and spirit of sportsmanship, that enable a person to withstand life's setbacks and shocks and brave all risks and hazards with a smiling face and quiet graceful demeanor. This paper reveals the objectives of Physical education and its contribution to general education at every level of education

Physical education is one of the aspects of education physical education may be defined in different ways. "Physical education is an integral part of the total education process and has as its aim the development of physically, mentally; emotionally and socially fit citizens through the medium of physical activities which have been selected with a view to realizing these outcomes."

"Physical education is the sum of those experiences which come to the individual through movement."

"Physical education is that field of education which deals with big muscle activities and their related responses."

The old concept of physical education as mere drill or series of regulated exercises has been rejected. It includes all forms of physical activities and games which promote the development of the body and mind.

The importance of Physical education as expressed by different eminent personalities is as follows:
Swami Vivekananda-"What India needs today is not the Bhagwad Gita but the football field."
Ryburn-"We need in Indian education a general physical education – we need a conception of education in which physical education takes its rightful place, in which its vital importance is recognized."

The production and dissemination of scholarly knowledge are efforts essential to the field of physical education. This filed includes professional content particular to the utilization of its activities, mostly in educational institutions but by no mean so confined. Further, this filed must include certain portions of such diverse traditional disciplines as anatomy, physiology, physics, chemistry, anthropology, psychology, nutrition, growth and development and sociology. The focus of attention is on the study of man as individual engaging in motor performances. Physical education is also inextricably associated with the well-being of man's total organism, his physical fitness, mental alertness, personal-social adjustment and emotional stability.

The study of physical education does not consist of the application of the disciplines of anatomy, physiology, psychology, sociology and the like to the study of physical activity. On the contrary, physical education, as a discipline in it's own right, utilizes appropriate aspects of these associated discipline. The physical educationist will not become a physiotherapist or an anatomist or psychologist. More ever, the emphasis must frequently

be placed on special areas within each of these fields, areas that receive little or no attention otherwise.

One may well arise the question: where is the border line between physical education and associated disciplines? No simple definitive statement is possible, but examples may be given to illustrate the region of demarcation. eg. What causes oxygen debt is physiology; the role of oxygen debt in various physical performances is physical education. The study of the skeletal maturity is anthropology; a consideration of the nature, extent and significance of skeletal and body maturity for physical activity of boys and girls of the same sex and age is physical education. The origin and attachment s of muscles are functional of anatomy; the identification of the muscles involve in various physical performance is physical education. How the individual learns / behave is a function of psychology; how this knowledge can be applied to complex motor performances is physical education.

Research Area in Physical Education and Sports:

- Sports Pedagogy
- Sports Psychology
- Biomechanics.
- Sports Medicine.
- Exercise Physiology.
- Motor learning & Development
- Information Technology
- Sports Training

- Sports Pedagogy: Pedagogy is a teaching method. Different pedagogy's in sports are anchored to different levels of yelling. The method of sports movement todemonstrate, to teach, to coach for the better acquisition of skill and to perfume better in the competition. The Sport Pedagogy Network has been established to provide a forum for education and sport come together. 'Sport Pedagogy' focuses on learning in, about and through sport/physical activity in a range of contexts including the school, community and family. It includes physical education, coaching science/studies, and relevant aspects of sport policy. The purpose of this Network is to share research expertise in order to develop new knowledge and understandings that can improve the experiences of participants wherever they engage in sport and physical activity. The system has a particular interest in stimulating research collaborations across national boundaries and developing strong consortium.

  Core Dimensions

  i. **Knowledge in context.**
  Physical education/sport knowledge is always context-bound. What is viewed as valuable or appropriate sport knowledge to be taught coached or learned is contingent upon a range of historical, political, economic and social factors that must be analysed and understood.

  ii. **Learners and learning.**
  Participants in sport, whether in physical education programmes or through

leisure activities in the community, are diverse, embodied learners. At the core of sport pedagogy, therefore, is learning theory and understanding the needs of diverse learners.

iii. **Teachers/teaching and coaches/coaching.**

The development of effective career-long professional learning for teachers and coaches is an essential step towards providing positive sport experiences for participants with diverse needs.

Key research topics are :

- Curriculum in historical, political, economic and social context
- Cross-Cultural Comparisons of PE and Sport
- Diversity, inclusion and exclusion in sport
- Youth disaffection and re-engagement through sport
- Health and body pedagogies
- Body pedagogies
- Ability/disability
- The rights of the child in sport and youth voice
- PE/ sport as settings for formal, informal and non-formal learning
- Innovation in and through sport
- Professional development for teachers and coaches.

- Sports Psychology:The specialized field of sports psychology has developed rapidly in recent years. The importance of a sports psychologist as an integral member of the coaching and health care teams is widely recognized. Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, one-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete's holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice. Increasing numbers of professional teams and athletes look for assistance with the psychological factors of their performance, and there exists a growing body of professional sport psychologists ready to provide support.

  Key research topics are:

  - Motivation
  - Emotions
  - Personality
  - Anxiety
  - Group cohesiveness
  - Self esteem
  - Mental toughness
- Biomechanics: Biomechanics is the study of the structure and function of biological systems by means of the methods of "mechanics." – which is the branch of physics

involving analysis of the actions of forces. Within "mechanics" there are two sub-fields of study: (1) statics, which is the study of systems that are in a state of constant motion either at rest (with no motion) or moving with a constant velocity; and (2) dynamics, which is the study of systems in motion in which acceleration is present, which may involve kinematics (i.e., the study of the motion of bodies with respect to time, displacement, velocity, and speed of movement either in a straight line or in a rotary direction) and kinetics (the study of the forces associated with motion, including forces causing motion and forces resulting from motion).
Biomechanics is therefore not kinesiology (which is often another name for physical education). There are numerous titles of books that are confusing, especially since the titles suggest more than the definition of biomechanics that was stated earlier. Examples include, but are limited to, Fundamentals of Sports Biomechanics, The Mechanics of Athletics, Scientific Principles of Coaching, Biomechanics Analysis of Sport, Biomechanics of Sports Techniques, Biomechanics of Human Motion, and Mechanical Kinesiology.
Key research topics are:

- Angle of joints and movement
- Force and its effect
- Motion
- Pressure

- Sports Medicine: In general terms, the study of sports medicine relates to the application of medical principals to sport, exercise, and physical performance. Studying sports medicine does not always refer to a specific field or degree. In reality, there are numerous fields of study that combine medical science with exercise, and they are generally referred to as sports medicine or exercise science.

  As a general definition, *exercise science* is the scientific study of physiological and biomechanical principals related to the adaptation of the human body to movement and physical activity. Research is one of the main aspects of exercise science, with the scope of integrating the application of scientific principles with sport and exercise.

Key research topics are:

- Injuries
- Rehabilitations
- Treatment
- Prevention

- Exercise Physiology: It is what happens to the body as it exercises a single time, how these changes are brought about, what changes in function occur after repeated bouts of exercise and how these changes come to pass, and finally, what can be done to improve the body's response to exercise and its adaptation to training. It is the description and explanation of functional changes brought on by single (acute) or repeated bouts of exercise (chronic exercise or training), often with the objective of improving the exercise response.
  Key research topics are:

- VO2 Max
- Blood Pressure
- Lactic Acid Tolerance
- Muscles Fibers
- Lungs, Heart Capacity
- Obesity
- Body composition
- Cardiovascular endurance
- Nutriti

- Motor learning & Development:"Motor learning is the process of improving the smoothness and accuracy of movements" or "A motor skill is a skill that regards the ability of an organism to utilize skeletal muscles effectively".It is closely connected with mental abilities, motor abilities, foreknowledge, the cognitive and connativecharacteristics of an individual as well as his familiarity with the theoretical bases of movement technique. Based on Hay's biomechanical studies (1985).
  Key research topics are:

  - Movement analysis
  - Skill Acquisition

Information Technology: The most important piece of equipment that lies at the heart of the whole IT process is the computer. The computer and the software that it runs is an essential element in the new societal paradigm and it is a key to success for the modern physical educationist/ scientist.

Key research topics are:

- Sport Web Site Designing
- Sports Software development
- Fitness Software

- Sports Training: how to prepare the athlete for the competition and to achieve the highest level of performance during competition. Basic of all sports and movement is training. Psychological training, physical training is one of the areas of sports training.

  Key research topics are:

  - Physical fitness – speed, endurance, flexibility, strength and flexibility
  - Volume, intensity, load
  - Adaptation and overtraining (burn out)

Thus the multi dimensional approach is involvedin the physical education researches. The more the sciences involve in the filed the more it grows, the better the performances and researches will emerge.

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