



International Journal of Current Research and Academic Review

ISSN: 2347-3215 Volume 3 Number 6 (June-2015) pp. 291-297

www.ijcrar.com



Policy implementation: The implications QF evolution and the application of modern technology to physical education

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KEYWORDS

QF evolution,
Physical
education,
Speech

A B S T R A C T

Many educators, researchers, teachers, educational administrators, and sports administrators have expressed concern over the present application and implications of modern technology to educational programmes sports technology in Nigeria. This paper is a treatise on the implications of evolution and the application of modern technology to physical education. The paper begins with introduction and proceeds to examine the concepts evolution and technology. The meaning and objectives of physical education were highlighted. Presented also were the modern technology and physical education in traditional setting. Efforts were also made to outline relevance/implication of the evolution to physical education. The application of modern technology to physical education was also discussed and some recommendations were offered.

Introduction

Evolution is the process by which new species are formed from preexisting ones over a period of time (Darwin 1871). An understanding of modern evolutionary theory requires examination of ideas that preceded those of Charles Darwin. And human evolution is going on at present and what is more, biology is in the process of acquiring knowledge, which may permit man to control and to direct this evolution. The leading forces of human evolution are intelligence, ability to use linguistic symbols and the culture which man has developed (Dohzhansky, 1967). That is to

say that human evolution is wholly intelligible only as an outcome of the interaction of biology and social forces.

While technology embraces a variety of practical activities that provide good and services for man's enjoyment and welfare. Put differently Nwoko (1992) stated that technology is the practical method which has enabled us to raise ourselves above the animals and to create not only our habitats, our food supply, our comfort and our means of health, travel and communication, but also our arts-

painting sculpture, music and literature. These are the results of human capability for action; hence physical education is on course.

Physical education is concerned with all the experiences which come to man through movement. It deals with the study and practice of physical activity in all its aspects from earliest time; Physical education has played an important part in man's life. By and large, man has to be master of complex physical skills in order to survive. According to Laoye and Ackland (1981) no individual is able to get through the day without relying on certain skills and basic movements, which have been learned as a result of deliberate effort and practice. They asserted that the huntsman, carpenter, engineer and factory worker all have to lean particular skills in order to carry out their work effectively. And at moment, physical education uses movement to develop physical skills for specific purposes through the application of modern technology.

Concepts of evolution and technology

Evolution usually leads to refining ideas. It is defined as descent with modification, closely related species resembling one another because of the common inheritance since the separation of their ancestors (Darwin, 1971) In encyclopaedia Americana (1995) evolution is the process by which new species are formed from pre-existing ones over a period of time. The evolution of man has been marked by the development of three salient features

1. An increased mental ability
2. Manipulative hands and
3. Speech

Man has entered upon a new phase of evolution, which may be called psycho-social evolution. The progressiveness of evolution,

considering the historical record in its totality, from primordial life, through unicellular and multicellular organism, invertebrate and vertebrate animals to man, one cannot fail to recognize that on the whole organic evolution has been progressive (Avers, 1989).

Technology

The term technology is derived from two Greek words. Techne (art, craft, skill) and logos (word as expressing inward thought or knowledge or reason, study or discourse). Technology therefore means a discourse or study on the arts; a systematic study of techniques or of regular method of making things (Berry, 1983) it involves the knowledge of human technology in doing things. Generally, it is a method of performance, a skilful mode of doing something. Often the term technology is used interchangeably with technique.

UNESCO and ILO (1984) stated that the term technology deals with the application of knowledge in the solution of practical problems of everyday living. They stressed that technology education essentially aims at developing techniques, devices, procedures and the process for doing things. That is that technology aims at getting things done and done efficiently. While Okeke (1990) pointed out that technology include the production and utilization the application of scientific knowledge, skills and guidance through man's creative ability to solve his movement performance problem in an effort to improve/achieve effectiveness and efficiency (Umeakuka, 2002)

Physical education: meaning and objectives

Unlike the modern technology, which is somewhat a new programme, physical education is not new as an area of study. A conjectural guess would leave one with the

fact that physical education is a field of study of the education family. It may perhaps save a lot of imagination to perceive physical education simply as both one of and like, the many other school education courses; one of because it has similar methodology in teaching and instruction.

Physical education uses an action agenda in achieving its set aims and objectives hence its main language is movement. This may be why odigbo (1985) simply stated that physical education is education through the physical. To decode this definition further physical education would mean that worthy experiences and knowledge achieved through the physical activities include Gymnastics, games, athletics, movement education, callisthenics and the likes (Eze, 2001). In some quarters, physical education is said to be movement education. The body has to be moved in various ways to achieve not only the physical health but also mental, moral and social well-being of an individual. An intelligent definition would then be that physical education is a careful planned programme of physical activities with an eye to producing a whole man, that is a man who is generally fit: physical, mentally, socially and psychologically.

On a macroscopic level, the objectives of physical education can be drawn from the physical fitness development objectives, mental development objectives, motor skill development objectives and personal-social development objectives. However, on a less global basis, the objectives of physical education according to keejan (1961) include the following.

- ✓ The development of neuromuscular skill for successful participation a wide variety of games and recreational activities.
- ✓ The development of organic fitness.
- ✓ The development of emotional stability

- ✓ The development of desirable social and personal qualities such as
- ✓ honesty, emotional control, fair play, leadership and self-submission -in
- ✓ play situation.
- ✓ The development of recreational habits and interest, which will carry over
- ✓ into adult life.
- ✓ The development of safety skills.

Modern technology and physical education in traditional setting

Technology involves the application of scientific principles or ideas in creating or refining invention to improve upon life in our society. That is to say that modern technology has brought about positive transformation of human society. There are now better training facilities, sports supplies and more effective nutrition, medication, management and coaching of various sports, which are aspects of physical education programme. The physical education programme is made up of a variety of activities and all of them are based on the fundamental human, movements. Certain criteria should be followed which include.

- ✓ Individuals - The programme should include the level of development, interest and needs of individuals.
- ✓ The nature - The programme of activities should be performed without undue strains. They should be within the scope of individual capabilities.
- ✓ Facilities and equipment - The activities should be those for which the needed facilities and equipment can be easily obtained.
- ✓ Variety - The programme should provide a wide variety of activities for the following groups, which include adults, children and the sick. From the Foregoing, it should become clear that modern technology has harnessed the

individuals' level of development, interest and their needs, and helped a lot in the production and utilization of sports facilities and equipment that improve the efficiency of teaching of physical education.

Modern Technology has the following relationship with physical education.

The development of skills necessary for identification effective exploitation of physical education activities for man's benefit.

- ✓ The development of attitude for effective participation management, control and manipulation of the physical education Sports environment for the good of the physical educators, athletes, official and society.
- ✓ The development of knowledge and skills for sustainable of our sports development objective
- ✓ The development of knowledge and skills for creating wealth

Research in science and technology is therefore the basis upon which Physical Education programme and Sports transformation can be built. Appropriate technologies are therefore needed to push sports functions to higher frontiers. The wide disparity in functions or sports development between the developed and less-developed countries is basically as a result of differences in their levels of technology. For example, Nigerian team losing woefully in the Senior World Cup soccer competitions and also in the case of Nigerian athletes who have to be in Europe in order to play in the world cup or Olympic medals. Relevance / implications of the Evolution to Physical Education

Physical Education/sports has served various purposes for different nations and at different times and evolution, which usually leads to

refining ideas, has the following implications to it.

- i. Development of the brain - the development of brainpower, of intelligence was the decisive force in the evolutionary process, which culminated in the appearance of the species to which we belong. Natural selection has brought about the evolutionary trend towards increasing brainpower because brainpower confers enormous adaptive advantages on its possessors,
- ii. Human skeleton - The human skeleton and particularly the skull underwent many changes during the evolutionary transition from ape-like ancestors to modern man.

At first sight' some of these changes may appear fortuitous and without meaning but it is most important Washburn (1951) regarded the achievement of erect posture and of efficient bipedal locomotion a critically important stage of human evolution. To be able to walk, and to run on ground, instead of climbing on tree branches, our ancestors had to modify their pelvis bones and the musculature attached thereto as well as their thigh, leg and muscles.

iii Man is in the process of the acquisition of knowledge which many permit him to control his own future evolution.

Iv Human diversity- man inhabits all parts of the world and climes. He is consequently exposed to great variety of environments.

v The Humanity of man- it is only man that uses words to express concepts or to designate categories of objects or acts. (Coon, 1954)

The application of modern technology to physical education

Man is the locus of technology and that technology is meant for man not man for technology. It is at the service of man. That

is why Nwoko (1992) asserts that technology embraces a variety of practical activities that provide goods and services for man's use enjoyment and welfare.

Modern technology education, essentially aims at developing techniques, devices, procedures and process for doing things. Obviously, theoretical and scientific studies and related skill training are required. These components will vary according to the level of education and the nature of occupation and career being considered. In other words, while science is concerned with knowing, aims at getting things done and done efficiently, (UNESCO AND ILO, 1984).

Sports which is embedded in physical Education programme has brought about positive transformation of human society. It is clear today that the spectacular performance of the modern athlete is attributable to better enabling sports environment, which is the product of modern technology. There are now better training facilities, equipment, sports supplies and more effective medication, management, coaching than ever (Ojeme, 1999)

In consonance with the forgoing, Ojeme (1999) quoting Eoy et al (1978) that sports technology denotes:

- a The material equipment
- b Physical skills
- c Body of knowledge, needed for conducting competition and for providing technical improvement in the level of competition.

They further classified sports technology into intrinsic and extrinsic. The intrinsic technologies of sports are the inherent requirements for the conduct of a sport. That is to say that the physical skill or motor skill of sports and equipment required for a particular *competition giving example* with illustration, they pointed out that *intrinsic technology of sports (soccer) include:*

- a The equipment such as balls, field of play, game, uniform or jerseys, playing shoes.
- b The repertoire of motor skills and,
- c Game rules

That the *extrinsic technology of soccer will include:*

- a Extended physical or material facilities like the stadium, press facilities, dressing rooms, floodlight etc.
- b Technical skills possessed by coaches.
- c Spectators competence,
- d Stadium managers .
- (e) Team physicians etc

By and large, the goal of sports technology should be to enhance the attainment of the highest standard of human performance by athletics. It provides the means and the environment to bring out the best motor performance from every human being.

In another perspective as asserted by Ojeme (1999) that sports technology involves processes and products that enhance sports development including the following:

- a The material aspect of sports:-
 - Sports facilities
 - Sports equipment
 - Sports goods
 - Human .component
 - Coaches
 - Sports managers / administrators
 - Sports teachers
 - Sports scholars
 - Sports information managers
 - Athletes
 - Sports medical personnel
 - Maintenance crew

In all of these areas, the watchword should be self-reliance. Given the all inclusive nature of

physical education programme and sports technology, it Means that the attainment of our national goals and aspirations in physical education and sports can become a reality if we are sufficiently advanced in physical education programme and sports technology and make it affordable for the service of sports.

Recommendations

In most countries of the world physical Education has been given a pride of place because of the realization of its importance in the growth and well being of any nation. We must look for ways to enhance physical Education programmes and sports technology in our country. To this extent, the author recommends that:

1. Identification of needs - it is necessary to identify our technological needs in physical Education and sports. There should be a nationwide survey to establish the actual status of physical Education and sports technology development in Nigeria.
2. Cultural and Bilateral Exchange programme - As a short-term measure, the country could sign bilateral agreements with selected nations in this area. This would enable the training of selected professionals abroad that will on back home become the agents of change. On the other hand, more efforts are given in bringing technical personnel to our country to impact the technological knowledge of training our people in Nigeria.
3. Enabling Environment - The government should ensure the prevalence of an enabling environment and home in terms of provision of sports facilities, equipment and other work tools.
4. Investment incentives - it is also recommended that incentives (financial and otherwise) should be given to physical

Education teachers, coaches and players/athletes in order to reduce their exodus from the classroom and to abroad. There must also be investment in the sports sector in the area of manufacturing mass production of sports equipment, which will in turn reduce the cost of procurement.

5. Encouragement of research - Funding in the interest of the sports" technology development and acquisition process in order to increase productivity especially in design, produce, install and maintain sports facilities and equipment such as tartan tracks, score boards, turf surfaces, swimming pool etc. and human development.

Conclusion

It is the position of this paper that all is not well with the application of modern technology to physical Education in Nigeria. Physical Education is precondition for the technological and sports industrial development of the nation. From earliest times, Physical Education has played an important part in man's life. Man has to be a master of complex Physical skills in order to survive.

Finally, it is contented that a successful technology of sports and Education programme will enhance-the national economic and social well being of Nigeria and Nigerians.

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