Scientific Research in Physical Education through Public Educational Policies

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Abstract

In this document search that scientific research is produced in physical education through public educational policies. Part of the knowledge of the status of the scientificity of physical education and scientific research that has been developed in this regard. It also supports normative support that also strengthens scientific research in physical education (international, national and state). It is concluded that it is necessary to link scientific research in physical education and public education policies to generate scientific production in physical education and can solve current social problems, For example in the educational area, social, health (obesity, bullying)... invest more in preventing.

Key Words: Scientific research, physical education, public educational policies, health, quality

Introduction

Mexico is one of the countries that invest little in educational research (compared to developed countries). Also there is no culture to do research, and if research is done, it is not used. In physical education the research that is given priority is sports and not education; also those who enter to study the specialty give more value to practical than research.

Eisenberg (2007) in his state of knowledge of physical education mentions that pedagogical research in physical education is limited: Do not contribute to the construction of knowledge and the amount of research in the field is still very restricted.

Normative support promotes scientific research in physical education, however the rates of obesity and violence in our country and Jalisco show that there is no impact of the current normative framework in the promotion of scientific research in physical education, so it is necessary to look for alternative solutions from a scientific basis.

Physical education has not persuaded, and has not been convincing to education and society. I know that it is a challenge to carry out social research, educational research and above all in physical education. However I also know that in this historical moment that our country and Jalisco specifically lives, it requires.

The impact that this work seeks in:

- In the political. Contribute strategies to public educational policies to strengthen scientific research in physical education.
- In the educational. Provide alternative solutions to existing problems and the production of scientific knowledge in physical education.
- In the humanistic social aspect. The health problems that affect us today (obesity...). They are problematic that from the production of research projects in physical education can be solved. This under a humanist approach where values are promoted.

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In the economic aspect, that these projects are applied from physical education in prevention even in correction. The impact will be reflected in the production of new knowledge and / or training processes, and in the resolution of educational, social, health problems ...

The central problem to solve is: How to promote scientific research in physical education from public educational policies?

Objectives

- Generate scientific research in physical education through public educational policies.
- To know the status of physical education in scientific research.
- To know the legal grounds that support scientific research in physical education.

The structure of this document is divided into three sections: the first deals with the problems of the scientificity of physical education and the scientific research that has been carried out in this regard; Subsequently, normative support is presented at the international, national and state levels; And finally, a proposal is made to generate scientific research in physical education through public educational policies.

Problems of the Science of Physical Education

First it is important to consider physical education and then the problems to generate research: "There is a strong social and academic tradition by which physical education has a low educational status, Kirtk, Arnold, Rivera and Trigueros, Blázquez, (cited in Lopez Pastor 2005); Even in some countries physical education has come out of school hours, becoming an out-of-school sports activity".

The problems detected in physical education to generate scientific research, considering Oña (2002) are:

- Object of study. Polysemy of terms (gymnastics, sport, physical education ... 
- Scientific distance. The studies are far from the principles of scientific knowledge its method.
- Marginalization of the institutions that corresponds in the educational, research and professional.
- Professional craftsmanship. The teaching work of its professionals has been based on particular experiences or the author of fashion, instead of do so on the rigor of scientific knowledge and the application of its technologies.

Bolivar (1991) also mentions that physical education is today, despite our theoretical efforts and our interests for its scientificity, a predominant technical instrumental knowledge, which can only transcend its technological dominance, becoming a powerful means of education when enrolling And articulate to pedagogical knowledge, more precisely, to a specific pedagogical project.

In this sense Rodriguez, Navarro and Linares (1994, cited by Vaquero, 2001), argue that it is urgent to overcome it, on the one hand, to place ourselves on an equal footing in scientific knowledge, and on the other, to unify the diversity of approaches In the discipline as a consequence of this unresolved problem and that conditions that the professionals of the field develop practices apart from any theoretical study (laws, postulates and principles), maximum aspiration of all science and discipline that busily seeks universal explanations of phenomena Natural and social. From the traditional theory of science, the problem that Physical Education has to solve is the real existence of a phenomenon that is constituted as an object of study, and from here structure its methods and approaches.

Scientific Research in Physical Education

There are lines of action to develop scientific research in physical education, already established, to solve the educational, social, health problems and for the construction of knowledge through the systematization of these investigations. Rodriguez P. (2010) believes that we intuit that Physical Education is a scientific discipline that deals with the field of study of the human movement as an educational agent. In this way, we think it wise to take into account the meeting point established between the sciences of Physical Activity and Education pointed out by Vicente Pedraza (1988 cited by Rodriguez, 2010), where education marks a clear line of determination between what Which is Physical Education as a science and the rest of scientific disciplines that study human movement.
It also indicates that in the light of such reflections we allow ourselves to affirm that Physical Education is a science in itself, situated within the so-called Educational Sciences which, given its specific character, could assume a certain independence from the rest of the sciences (Popper, 1983, Ortega Gómez, 1989, Cecchini, 1996, Parlebas, 1997). In addition Rodríguez mentions that the approach made towards the object of the study of Physical Education has brought us together in a clear duality:

- Tendencies that center their studies in the human motricidad of strict form, under a conception centered in the body like machine (scientific production linked to the sciences of the Physical Activity and the Sport).
- Trends that place their work and object of study in the movement as an educational phenomenon (scientific production linked to Physical Education).

Rodríguez (2010), makes a classification that establishes the areas of physical education:

- Pedagogy Physics: biomechanics, kinesiology, kinantropometry and anatomy.
- Cultural: sports sciences, sport sociology, anthropology, sport history.
- Physiological: physiology, biochemistry, physiology of effort.
- Educational: specific physical education, specific psychology, didactics.

The scientific production and the lines of investigation more representative in Physical Education that establish Rodríguez are the following:

1. - Scope: School Physical Education as a curricular subject. The lines of research that have been developed in this area belong to the two existing areas of knowledge, the most significant being:
   - Development of the curriculum of the area of Physical Education.
   - Teacher training.
   - Methodology of teaching in Physical Education.
   - Attitudes, interests and motivations of students.
   - Development of didactic materials.
   - The study of gender in Physical Education.

2. - Scope: School sports and sport for all. The lines of research within this area are equally shared by both. Existing knowledge areas, the most significant being:
   - Initiation to sports practice.
   - Motivation towards the practice of physical activity and sport.
   - Sociological characteristics of sports facilities.
   - Planning and development of activity programs.
   - Environmental impact of physical-sport activities.
   - Impact on health and quality of life of the practice of activities Physical-sports.

3. - Scope: Competition sports. The research lines within this area belong primarily to the physical activity and sports sciences, being linked as a priority to the Physical Education and Sports area, although the treatment of school sports has a very significant intervention from the area of Didactics of The Body Expression. The most significant lines are:
   - Specific problem of school sports.
   - Promotion and organization of sports competitions in the school environment.
   - Problems specific to university sports.
   - Competition-oriented initiation.
   - Sports teaching.
   - The impact of sports competition on health in childhood and in adolescence.

4. - Scope: Management and organization of the physical-sport activities.

   The research lines within this area belong to the Physical Education and Sports Sciences, in the Physical Education and Sports area. The most significant lines are:
• Management styles and sports management.
• Attitudes and motivations of the users.
• Sports practice habits of the population.
• Adherence, continuity and abandonment of physical-sport practice.
• Leisure activities and recreation of the population.
• Sports recreational offer.

5. Scope: Study of the human motricity from the physical and physiological perspective. The research lines within this area belong in their entirety to the Physical Activity and Sport Sciences within the area of Physical and Sports Education:

• Anatomy of human movement.
• Biomechanical and kinesiological studies of movement.
• Physiology of physical activity and sport.
• Biochemistry of human movement.
• Anatomo-physiological studies oriented to the body morphotype.
• Anthropometric analysis and effects of physical exercise on these variables.

Cagigal J (1996) mentions that the doctoral theses in physical education, possibly to the recent incorporation of our discipline to the world of the scientific investigation, are framed within 2 blocks:

1. Life sciences: motor development, biomechanics. Pathology, metabolism. Nutrition, anthropometry, exercise physiology
2. Education sciences: teacher training, school performance, Cecchini (1996, cited in Romero, 2007), before the epistemological conflict between the sciences of the education and the sciences of the movement (of the sport), tries to delimit the field of knowledge of the PE, considering its specificity and the evolution of the body of Knowledge, depending on where the attention is polarized. It states that:

• The PE, being education and developing in an educational context, is within the sciences of education.
• It attends to its own specificity (differentiating itself against the sports sciences and general didactics), so that it conforms its own object of study around the education of the person through the corporal development and the possibilities of movement.
• From its autonomy and independence with respect to other scientific disciplines, it generates its own theories about the educational processes of the PE, from the aims and objectives, contents, methods and evaluation, to the didactic strategies. The educational possibilities offered by PE are the object of study that, through the research methods and procedures generate theories that allow obtaining models of action, that make possible the reflection and the proposal of Best educational practices.
• The delimitation of a field of study of its own should not prevent the investigation of physical education can exist an interdisciplinary support or work. At times, it would be of great interest to complement and contribute knowledge to the benefit of a certain social fact that needs a greater level of understanding and interpretation.

• Cecchini (1996) also mentions that when we focus on the research of the didactics of physical education we intend to generate theories to understand the complexity that characterize:

• Teaching and learning processes in school contexts through physical education.
• Better training and training of teachers to develop their professional practice in schools.
• Professional development, improvement of teaching practice and curriculum innovation in physical education.

Oña (2002) mentions that these early scientific attempts are isolated and colonized from other sciences; Physical activity has not until recently been considered as an area of knowledge with its own scientific entity. The fact that the first centers of training and study, and that its professionals have long been medical or military, and more recently teachers, are very significant of this situation of marginality or collateral.
When we treat a phenomenon from any scientific perspective, from physics to psychology, it is necessary that the phenomenon studied and the procedure followed fulfill the following distinctive principles and common to all scientific activity (Óña, Martínez, Moreno & Ruiz, 1999):

1. **Intersubjectivity**: Scientific knowledge has to develop in a cognitive framework far from human subjectivity, therefore, it must be a shared, objective knowledge.

2. **Specialization**: The problems that the science treats must be defined in the most concrete, specific and narrow way possible, making the object of each science, its topics and themes in highly differentiated elements, unmistakable with others. In this way science is separated from other knowledge of Universalist purposes, such as the philosophical, which seeks to study in a global, inseparable way, phenomena. The requirement of delimitation, of the specificity of scientific problems, increases the number of scientific areas and specialties over time.

3. **Operativization**: The differentiated and specific delimitation of a scientific problem must, in addition, allow the components of this problem to be operative, which implies that they are elements on which can be carried out logical-mathematical operations of transformation. For this, in the first place they will have, as Chalmers (1987) indicates, that to be defined with precision and clarity, what supposes fundamentally their possibility of measurement.

4. **Functional Relationships**: The operationalization of the components of a scientific problem will allow us to establish functional cause-effect relationships between the different elements of the problem studied. Science does not explain phenomena through fixed essences with universal value in themselves, but with relative and functional value according to the concrete context of the study.

5. **Control**: To be sure of the functional cause-effect relationship between the independent variable and the dependent variable, it is necessary to control the phenomenon's occurrence conditions. The functional relativity of science implies that the phenomenon can vary depending on the environment where it unfolds.

**Legal Support**

Some documents that provide normative support for generating and promoting scientific research, and scientific research in physical education are presented at three levels: international, national, and state.

**International**:

1. **UN (1979)** International Fund for the Development of Physical Education and Sport (FIDEPS); Promotion of study, research and experimentation in all aspects of physical education and sport (scientific, educational, physical, medical, social, economic, infrastructure and facilities, etc.)

2. **World Declaration on Education for All in Thailand (1990)**: to undertake joint activities: (i) training of senior staff such as planners, administrators, trainers, researchers, etc., (iii) research.

3. **The report of the Meeting of the Network of National Policies on Active Living OMS (1998)** indicates the interest in the development of physical activity in schools and the research needs to be developed. Some of the lessons learned for the successful formulation and implementation of active life policies and programs: a sound scientific basis for support for policies and programs of action.

4. **World Manifesto of Physical Education (2000)**. The International Federation of Physical Education (IFPE) states the need for a science of support. In chapter XI, "Physical Education and the Need for a Sustaining Science" concludes with Art. 12. Physical Education, as an essential field of action for the people, needs that all the organisms and institutions that consider it as main object, Continue developing events and studies that allow a scientific support for the action of the professionals involved in it.

5. **UNESCO (2012)** Global Meeting on Education for All. Paris. Reforms: these reforms should cover policies, innovation, curricula, professional development, research, evaluation and pedagogically effective use of information and communication technologies (ICT).

6. **UNESCO (2012)** Amended Statutes of the Intergovernmental Committee for Physical Education and Sport (IGCPES): to assist research on issues relating to physical education and sport, to the collection, analysis and publication of scientific works and other documents On physical education and sport, on the improvement of programs and the training of persons responsible in this field, and on the organization of specialist exchanges and, where appropriate, meetings.
7. MINEPS (2013) the 5th. International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport. Need to undertake new research, evidence-based policies and knowledge sharing processes at national, regional and international levels.


NATIONAL

1. National Education Program vision 2025 (2001). Policy number four states: Evaluation and research in the educational and institutional management fields will be strongly promoted, in order to know the state of national education, explain its progress and limitations, to support the planning and making processes Of decisions, and to be accountable to the society on the destiny of the resources and the results that are obtained with its exercise.

2. Curriculum of the Bachelor in physical education. In the Bachelor's Degree in Physical Education (2002), in the criteria and orientation for the organization of academic activities no. 7 states: through different activities that show that the path of science is accessible and that it is related to the real and immediate world of nature and society; It is necessary to ensure that students are analytical and critical users of research products; Accustom them to their studies, during their work and continuous training, to apply the criteria and instruments of inquiry.

3. Alliance for the Quality of Education. (2008). Points out that priority processes in the professionalization of teachers and educational authorities aim at, among other things, ensuring that those who teach our children are properly trained, improving the quality of teaching staff in the Normal Schools and the performance Of the students.

4. General Law of Physical Culture and Sport (2013). To promote the development of physical activity, physical culture and sport, as an important means in the preservation of health and prevention of diseases.

5. National Development Plan (2013). In axis 3, "Equal opportunities", Goal 9 "Raising educational quality", strategy 9.2 states that teachers' capacities for teaching, research, knowledge diffusion and use of new technologies should be strengthened by aligning them With the national objectives of raising the quality of education, stimulating learning, strengthening students' ethical values and transmitting knowledge and skills to work, mainly. To this end, specific actions will be designed to strengthen the initial training of teachers; 3.5 make scientific, technological and innovation development pillars for sustainable economic and social progress. That the Plan, in its Axis 3, objective 12 "Promote the integral education of people throughout the educational system", points out that education, in order to be complete, must deal with the skills to learn, apply and develop knowledge, Appreciation for ethical values, civics, history, art and culture, languages and the practice of sport.

6. In the sectoral program of education 2013-2018 mentioned in objective 6. Promote scientific and technological education as an essential element for Mexico's transformation into a knowledge society "a nation can progress when it is able to understand its situation and its environment, and from this to create knowledge and take advantage for their economic and social development in a sustainable way. Moving towards a knowledge society involves developing a collective consciousness of the principles that originate and explain the fundamental aspects of life and, consequently, have the capacity to innovate"

7. Political Constitution of the United Mexican States (2016). II. The criterion that would guide such education would be based on the results of scientific progress, struggle against ignorance and its effects, easements, fanaticisms and prejudices.

State

The State Education Law in Jalisco (1997), which establishes the following: a) Encouraging the acquisition of scientific and cultural knowledge, through generating the development of interest in research, b) Promoting scientific research and innovation And technology oriented to seek the attention of social needs, increased production and sustainable development of Jalisco, c) Seek excellence in educational quality, d) Education will be humanitarian, while contributing to the best human coexistence, E) To permanently promote research that serves as a basis for educational innovation; and f) Organize and promote research that serves as a basis for educational updating.
1. Law of Education of the State of Jalisco (2014) article 7- II. To promote the acquisition of scientific and cultural knowledge, the development of learning capacity, the interest and methodology of research and critical reflection.

**Proposal to Generate Scientific Research through Public Educational Policies**

Physical education must be equitable, quality and ensure the greatest coverage, as it is a fundamental right for all. The equity that must be developed is the inclusion of culture, sex, religion, economy, etc., as well as contributing to a better quality of life, to the development of the integral of the human being, generating from the scientific research of the physical education. Currently, a series of social and health problems are generated, such as obesity, bullying, addictions,... which demand a solution. An alternative to solve it is the physical education of quality and the scientific research that realizes it.

This process is legally supported to be carried out, however it is necessary to work more on it and it is necessary to establish a process from the public educational policies to have greater educational impact and in society. In this way, it will fulfill the objective of solving existing public problems and raising the quality of education in physical education. Murillo (2007, cited in Amador, 2008), points out that education policies are essentially elaborated through a dialogue between the different actors, as well as the demands and pressures of society, and the educational reality itself. A low presence of some of these three basic actors generates distortions with serious consequences. Education policies play a central role today; their development consists of three phases: design, operation and results. The failures of educational policies are due to design errors to the big decisions that are made, rather than to the operators themselves. Most of the educational policies in Mexico have been crossed by different political reforms and some structural changes. Hence the importance of promoting the link between academia and public policies, so that these structural changes are advantageous for the education system. The current role of education policies corresponds to public policies and management, as they together provide a complementary overview of the education system. (Nieto, 2014).

According to Latapí (1996), therefore, an educational policy requires an extraordinary capacity for critical analysis and synthesis: to have up-to-date knowledge in many natural and human sciences and to derive from them decisions about the factors that may favor certain learning and, thus improving education. Riveros, (2014) proposes to see the construction of meaning of educational policy from the corporeity of the actors involved in bringing politics to practice. Not only from individuals at the highest levels of government, but also from teachers and other school actors who, through their practices, construct the meanings of politics, by adapting them to the contexts of the school. Conception of the construction of meaning from the corporeity gives us a new perspective that allows to understand the educational policy as a process of construction and reconstruction of meaning and not as an object designed by governmental or legislative elites.

Also, Merino (2013), a public policy can be defined as a deliberate intervention of the State to correct or modify a social or economic situation that has been recognized as a problem. In practice, public policies are designed, implemented, evaluated and restructured at the same time. For analytical purposes, their conception as an articulated cycle helps to identify as accurately as possible the obstacles they could face during their lifetime, in search of The results that justify them. The cycle of politics understood as a process composed of at least four moments: the selection of an "input theory", which is indispensable for selecting the public problems that will eventually be the reason for a previously adopted rationality); The design of a "road map", based on the definition of the selected problem and the planning of the action to be followed (including a defined argumentation and an analysis of the restrictions that public policy will face);

The action itself, which is here called "the battlefield", which in turn is subject to the conditions of the implementation in which the implementation of the public policy already designed; And finally, the evaluation, through which the results of each of the actions undertaken must be estimated, in accordance with the objectives and established processes. Parsons (2007) it raises the stages of the public policies: Problems, Definition of the problem, Identification of answers / alternative solutions, Evaluation of options, Selection of the options of public policies and Implementation evaluation.
In addition, Amador (2008) mentions that it is urgent to have an evaluation system that allows monitoring and issuing a series of recommendations that directly impact society through educational public policies, programs and policies. Evaluations should allow us to design and construct policies that are consistent with the reality that in each place, municipality and state are presented.

Conclusion

The challenge is to generate scientific research in physical education through public educational policies. For this I make some proposals to:

1. Physical education.
   - Possessing itself as a necessary area within public educational policies.
   - Quality physical education is a right that every individual possesses, so it must be carried out and scientific research in physical education can strengthen it from public educational policies.

2. Scientific research in physical education.
   - That educational, social, health problems ... be solved from scientific research. For example in the educational process research action to solve problems and ethnography for scientific production in physical education.
   - That the investigations carried out be considered, since they establish the tendencies, principles, areas, lines of action and theories that serve as the basis for new research.
   - That the established normative foundations related to scientific research in physical education be applied.

3. Public educational policies in physical education.
   - There must be teachers from the detection of problems in public policies to their evaluation and monitoring.
   - Public educational policies must be linked to scientific research in physical education to solve existing problems and produce scientific knowledge in physical education based on three areas: technical (practical), scientific (scientific knowledge) and philosophical (centered on values).
   - Public policies can be done from the state to educational institutions, but I also propose that it can also be strengthened from scientific research in physical education from schools to the state.
   - That the normative foundations related to scientific research in physical education should be evaluated and followed up.
   - It is necessary to link scientific research in physical education and public education policies, to generate scientific production in physical education and solve current social problems, for example in the educational, social, health (obesity, bullying) area... Invest more in preventing.
   - If public policies seek to solve social problems, scientific research in physical education offers the answers on how to solve these problems. Act in prevention rather than correction.
   - Values are a fundamental part of this whole process.

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