

Club Sports Conundrum
Part II

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In Part I of this series, we established the problem (s):

- Excessive annual volumes of same sport technical-tactical practice
- Insufficient physical preparatory foundations and coaching qualification standards
- Incongruent process of long term athlete development
- Lack of sports physiology academic curricula in CONUS
- Only the most gifted athletes being the exclusive survivors/beneficiaries of the flawed system

The solutions to these problems are as multi-faceted as the nature of the problems themselves; however, a common enemy exists in every one of them: ignorance.

In the spirit of Victor Hugo's "*An invasion of armies can be resisted, but not an idea whose time has come.*" we will discuss what is necessary to accomplish resolution; beginning with the "*idea*" of education.

It is first necessary that academia devote more time and resources towards the study of sport physiology. The corporate level of curricula in the US collegiate and certifying organizational setting, pertaining to sports training in any way, is largely encapsulated by exercise science/physiology; not sport science/physiology. This makes for a backwards situation in which the proverbial cart is placed before the horse.

In order to prepare athletes for sports one must inarguably first and foremost possess a comprehensive understanding of the physiology of that sport. Only then may the knowledge of exercise physiology prove itself useful. Professors and students alike must become more informed as to the scientific structure of each sport discipline from the standpoint of biodynamic and bioenergetic demands.

Biodynamics, as it pertains to sport training, is constituted by all movement related sciences (physics, biomechanics, kinetics, kinematics...). Bioenergetics is characterized by the sciences that concern the processes of adaptation, mobilization of muscle work, and life in general (biology, physiology, biochemistry, endocrinology...)

It is illogical to consider preparing an athlete in the technical-tactical or physical regimes without a working knowledge of Biodynamics and Bioenergetics as they pertain to sport.

An individual in possession of this knowledge clearly understands that the process of athlete development must be delicately handled and viewed in a long term context. The general theme of a multi-year outline and a single annual outline are very similar, however. In this way, the training process works from general to specific.

Regardless if the athlete is pre-adolescent, an NFL player in late January, or an Olympic champion initiating the beginning of a quadrennial, the training is optimally initiated with a higher volume of non-specific work in order to broaden the foundation required to reach, or at the very least recuperate from the previous year's, high level special physical preparatory training and competition calendar.

Regarding the club/pre-high school age athlete, it is critical that the bulk of their annual training is constituted by general physical preparatory training coupled with volumes of special physical preparatory and technical-tactical training that gradually increase year after year.

Multi-sport participation is valuable at this stage; however, not at the expense of poor technical coaching. Efficient technical movements (kicking, throwing, passing, catching, batting, swimming, tackling, sprinting, jumping, and cutting, decelerating...) must be properly instructed and carefully dosed over time; by the day, week, month, and so on.

The knowledge required to properly instruct and dose the training of these skill sets can only be fully acquired through the study and practice of scientific sport training research, and high level coaching, that has been directed towards these specific domains. This type of comprehensive investigation has, on the whole, yet to be accomplished in the continental United States due to the fact that the US is host to the most diverse gene pool in the world; not the highest level of coaching; and it is primarily because of its sheer volume of gifted athletes that the US is able to accomplish the athletic success that it has on a global scale over time.

Grossly unqualified physical educators and sport coaches are products of a system that is not considered to be flawed by our nation's legislature; otherwise, physical education wouldn't be disappearing in our schools and more sports people would be exposed for their incompetence. This comes as no surprise to the global community of specialists, however, because it is irrational to assume that a policy maker amidst a hierarchical system (hence a constituent of the Peter Principle who has thus been promoted to their individual level of incompetence) is capable of identifying a problem beyond their small scope of remaining skill.

This same logic may be applied to the paradigm of professional, Olympic, collegiate, high school, and pre-high school coaching. Under what rules of logic is a general manager, athletic director, or principle qualified to assess the skill set of a physical educator, technical-tactical, or physical preparation coach? Furthermore, given the current state of educational affairs, what *IS* the skill set of the physical educator, technical-tactical, and physical preparation coach?

Economically, collegiate professors are largely bound by the financing they are able to gather in the politically viable fields of study (a wildly subjective concept if there ever was one); as they pertain to health and exercise. In this way, an abundance of resources are dedicated towards the study of diabetes, cardiac pathology, obesity, corporate wellness, and basic exercise for general fitness. The question remains: to what degree do such curricula pertain to what is required to ensure long term athlete development, general physical, special physical and technical-tactical preparation?

From a physical education standpoint, curricula are far more concentrated on the logistical management of groups of youngsters and how to organize a school year's worth of sport games versus the comprehensive study of sport biodynamics and bioenergetics and long term athlete development.

Historically, the field of scientific sport training investigation has been dominated by the past, as well as present, communist/socialist regimes of the Soviet/Eastern Bloc nations and China. Perhaps the most interesting aspect of these entities, from a sport training and western point of view, is that the state devotes substantial interest and resources towards athletics. A concept largely motivated by using athletics as a political weapon.

The lengths towards which such nations have gone to create highly specialized sport science curricula is unmatched amidst the global community. For this reason, a great deal of the most valuable literary sources related towards sport training in general is published by overseas authors.

It is irrational to think that an American collegiate university study on “12 college students” can compare in utility to decade’s worth of research on hundreds and thousands of national and international class athletes.

Correspondingly, the vast majority of the most truly knowledgeable coaches and physical educators in the United States have, in one way or another, been influenced by overseas research.

To this end, it is necessary to question the skill set of the coaches and physical educators influencing the development, health status, and future of athletes competing at every level of sport; not the least of which is the club sport level.

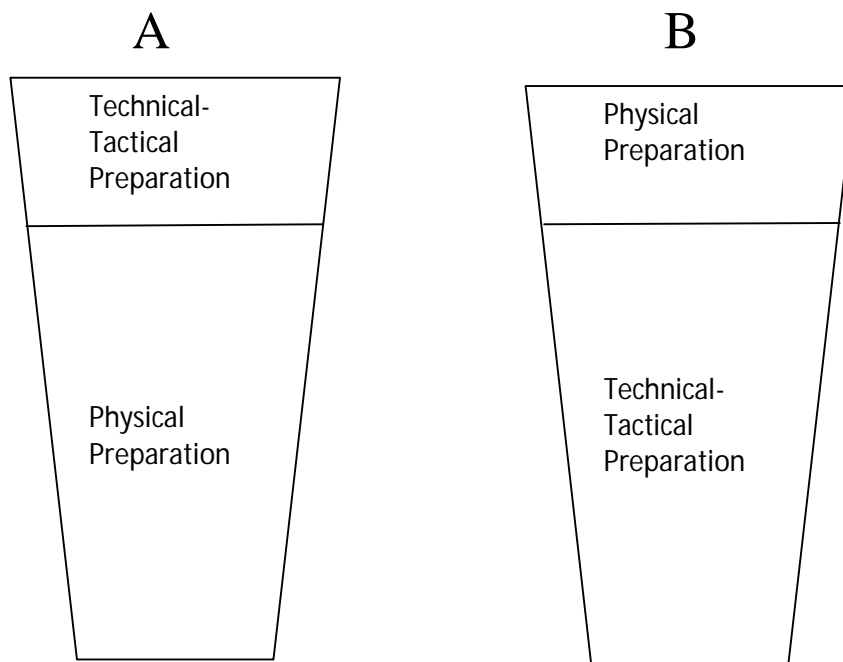
Program management serves a decisive role in the care of athletes. This constitutes the management of all aspects of the sport training process:

- Psychological
- Technical-Tactical
- Physical
- Recovery/Regeneration

Currently, however, these fields are divided and, thus, the process of athlete development is compartmentalized. Rarely, at the club and high school level, are specialists from each field working under the same roof or managed by a single individual or department who possesses an expert understanding of all fields. This generates a lack of communication and often a list of conflicting demands; most notably between the physical and technical-tactical preparation staffs.

As it was discussed in Part I of this series, energetic resources are finite. For this reason, one cannot segregate the physical toll of technical-tactical and physical preparation training into separate categories. They are, after all, much more similar than they are different in their demands- an abundance of one demands that the other be reduced; and vice versa.

The late Canadian speed coach Charlie Francis most accurately described the premise of this situation using a glass of water illustration:



Particularly in regards to CNS intensive components (speed, power, strength training) the capacity to perform CNS work in total is finite. Charlie's example uses a glass of water as being synonymous with an athlete's CNS capacity (their gas tank if you will). Thus, the amounts of each intensive component must be carefully regulated in consideration of the whole.

Figure A represents an abundance of physical preparation training volume and Figure B represents an abundance of technical-tactical training volume. In both cases, provided that each aspect of the training load possesses CNS intensive demands, the remainder of capacity is limited and thus may only be filled with a comparatively much smaller volume of the other quality or an overflow will occur. In the case of sports training, an overflow equates to an overworked athlete who is much more susceptible to injury and performance decrease.

For this reason, the program must be unified and the sport training process, as a whole as well as in its separate parts, must be managed and organized by one individual, or department, with an understanding of the collective. In this way, each aspect of preparation will, like a successful medical remedy, be optimally dosed and serve to accomplish the highest results at the least expense of time and energy.

Each young athlete requires varying degrees of emphasis regarding physical and technical-tactical preparation. The further away from the competition calendar and the younger the biological age of the athlete, the greater the ratio must favor higher volumes of general physical preparation. In this way, as the competition calendar approaches, or as the athlete's physical preparation increases, their technical-tactical potential will be more optimally fortified via their increased physical outputs as they relate to their sport.

It is not sufficient to address physical preparatory measures alone, however; and in the absence of technical-tactical training because the development of sport skill requires the harmonious development of all qualities. Thus, at any given time, an optimal ratio must exist between the volume of physical and technical-tactical training.

The degree to which technical-tactical and physical preparation training must be dosed is ultimately individual to each athlete. At the club and team sport level, it then becomes necessary to construct training strategies that correspond to the physical preparation level of groups of athletes; a task which if attempted to solve by classifying athletes according to chronological age is doomed to fail because chronological and biological age cannot responsibly be viewed in parallel. For this reason, the formulation of teams according to chronological age, as is currently done in club sports, is erroneous.

Consider two 14 year old female volleyball players:

- One is the human equivalent of 'Bambi' at 6'01" and a gangly 115lbs. Her long lever system far outshines her current level of musculature, speed, strength, and power potential. Her vertical jump is only 10", she lacks balance, and she is slow to redirect herself with any degree of speed.
- The other is a shorter more muscle bound and powerful 5'6" 120lbs. She vertically jumps 24", is well balanced, explosive, and changes her direction very quickly.

The taller athlete surely has a frame that looks attractive to coaches; however, the defining characteristics lie in the physical preparation. In her case, her existing level of physical preparation is significantly underdeveloped and it is this area of her development that must receive priority in order to most significantly advance her sport skill potential. Her lack of supportive musculature and strength renders her that much more susceptible to repetitive stress injury specific to the demands of volleyball practice.

The shorter athlete, while currently not possessing impressive height, has a sufficient level of physical preparation for her age. For this reason, she will benefit more greatly from a comparatively higher volume

of technical-tactical practice, because she is more structurally prepared for it, as this will have a more profound impact on advancing her sport skill.

In our current club sport model, however, both girls, due to their chronological age, will be placed on a team with girls their same age. While the teams may be distinguished according to skill level, the training load often remains the same. If athletes of different ability are presented with the same training load one thing is certain...the results won't be.

Physical preparation (general and special) must be accurately assessed as it relates to sport demands and corresponding training plans, including technical-tactical work, can only be constructed after this data has been collected. It is the special physical preparation of the athletes that must serve as the classifying mechanism for creating teams and training loads because it is this aspect of physical preparation that has the highest correspondence to sport playing ability.

At Juggernaut Training Systems we offer physical preparation training and sports training program management consultation. Training athletes and coaches alike is our business.