

PREFACE

There are many reasons for writing a book. The two of us are bound together in friendship, mutual trust, and respect because of our reverence for truth, education, and ethics. We believe that baseball players, and in particular pitchers, deserve effective and sound coaching. Baseball is a sport that is steeped in beliefs, many bordering on mysticism while others reek of misinformation. Other individuals in baseball offer coaching advice and sport analyses in the form of infomercials founded on false premises. One of their strongest motives is profit. With these forces at work in baseball coaching, parents who foot the bills for a son's "*special*" training; colleges that spend state, student, and donated monies on players' scholarships and sporting opportunities; and professional organizations that pay extraordinary amounts with the view to being "*winner*s", all deserve that their monies buy better than folk-tale ridden coaching explanations and erroneous practices. This book is an attempt to present known facts and practices with the intention of combating the very weak coaching knowledge and effectiveness in baseball pitching. This singular purpose is what drew us together to produce this volume.

The content of this book is more expansive and extensive than other baseball books. Human performance, and pitching in particular, does not involve activities that can be described in a few simple terms or factors. A good coach needs to understand the functioning of the human brain, body, and mechanics; the aerodynamics of a ball in flight; and the procedures that can be used to produce the best human performance possible when throwing a baseball in a particular manner at a defined target. We believe it more valuable to write as much as possible on the topic of pitching coaching than it is by fragmenting it into smaller books or popular articles.

It is unfortunate that exercise physiology has gained the strongest foothold in sport and exercise science. Most college departments associated with human movement studies, feature more units of study and laboratory experiences in exercise physiology and its prerequisite sciences (e.g., anatomy, general physiology, biochemistry, etc.) than most other sport sciences (biomechanics, motor learning, sport psychology) combined. When a sport is only viewed through one scientific perspective, the truth about performance will never be known. That is because an exercising human concomitantly employs psychological, biomechanical, and physiological factors in any movement. There is no human exercise where these three basic movement sciences do not occur together, although how each one is emphasized and used varies between exercise endeavors. That most writings on improving baseball pitching have focused on physiological factors is understandable but regrettable, because it has led to incomplete and therefore, erroneous practices. Our attempt to cover all the applied science bases of pitching performance should be evaluated against the understanding that an analysis of a "*whole*" pitcher is better than one of only discussing a player as a collection of muscles and blood. Exercise physiology is important, but no more so than biomechanics, physics, and psychology. Unless the activities of a pitcher are interpreted from the three major fields of sport science, a correct evaluation and prescription will not be made for any pitcher. The complexity and extent of the sections of this book are meant to give the coach sufficient background to make balanced and correct decisions about the performances of pitchers so they or their sponsors will "*get their money's worth*".

Unfortunately, some aspects of sport science are not included in this book. There would be great value in discussing the growth and development differences between pre-pubertal children, post-pubertal adolescents, and mature adults and explaining how those differences modify what is known about psychology, physiology, and biomechanics. A decision was made not to include growth and development here. The book is already very extensive and to add yet another long section would make it completely unwieldy while taxing the patience and energies of the authors

probably too much and overwhelming most readers. Although we have done our best to present content extensively, we do not claim the evidence-based knowledge of this book is all that needs to be known to be a successful baseball pitcher or pitching coach. It should go a very long way to helping individuals to achieve prominence in those two vocations but it is not all that one requires for complete success.

Since multiple sport sciences are presented, there is likely to be considerable topic repetition throughout the book. For example, strength, power, and speed can be viewed from a biomechanical and a physiological viewpoint. Consequently, those topics will be repeated but from the viewpoint of the actual scientific discipline being discussed. Repetition of topics occurs frequently throughout the book as do cross-references to topics and principles.

The book is divided into parts, every one focusing on a scientific or practical discipline. The basic unit of the book is the topic. We chose that name to break away from the more common term "*chapter*". Topics are not chapters in a story. They are considerations of defined topics that can stand alone based on their knowledge and explanatory content.

One thing this book does not have is content recipes. You will not find prescriptions of how many jump squats to perform, how to think of delivering a curveball, activities to use to motivate players, etc. We believe that individualizing the coaching of pitching is a fundamental need for effective coaching. To satisfy that belief, this book presents most of the building-block knowledge that a coach needs to make informed decisions about actual activity content for each pitcher. With that approach, each pitcher should improve along his coach-recommended and justified path that has included him in the decision-making process. Armed with extensive knowledge that looks at a pitcher with a "*full-picture concept*", including his mechanics, psychology, and physical state, a player should be stimulated to improve in more than a very restricted domain. The extra areas of knowledge that are unique to this publication should promote the expansion of considerations for programming the coaching of pitchers as well as looking for more avenues to develop a player's full potential.

There are many avenues available for markedly increasing baseball pitching performances. The sooner those opportunities are exploited, the quicker players will be able to reap the benefits they deserve from playing baseball.

Good luck and wise thinking about your coaching.

Dick Mills and Brent Rushall