20th Edition

Foundations of Physical Education, Exercise Science, and Sport

Jennifer L. Walton-Fisette
Kent State University

Deborah A. Wuest
Ithaca College

Mc Graw Hill

FOUNDATIONS OF PHYSICAL EDUCATION, EXERCISE SCIENCE, AND SPORT, TWENTIETH EDITION

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 LCR 24 23 22 21 20

ISBN 978-1-260-25391-7 (bound edition)
MHID 1-260-25391-0 (bound edition)
ISBN 978-1-260-80771-4 (loose-leaf edition)
MHID 1-260-80771-1 (loose-leaf edition)

Portfolio Manager: *Katie Stevens*
Product Developers: *Erika Lo, Amy Oline*
Marketing Manager: *Meredith Leo*
Content Project Managers: *Lisa Bruflodt, Katie Reuter*
Buyer: *Susan K. Culbertson*
Designer: *Egzon Shaqiri*
Content Licensing Specialist: *Brianna Kirschbaum*
Cover Image: *FiledIMAGE/Shutterstock*
Compositor: *Aptara®, Inc.*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Names: Walton-Fisette, Jennifer L., 1978- author. | Wuest, Deborah A., author.
Title: Foundations of physical education, exercise science, and sport / Jennifer L. Walton-Fisette, Kent State University, Deborah A. Wuest, Ithaca College.
Description: 20th edition. | New York, NY : McGraw-Hill Education, [2021] | Includes index.
Identifiers: LCCN 2019029121 (print) | LCCN 2019029122 (ebook) | ISBN 9781260253917 (hardcover) | ISBN 9781260807714 (spiral bound) | ISBN 9781260575590 (hardcover) | ISBN 9781260807738 (ebook) | ISBN 9781260807806 (ebook other)
Subjects: LCSH: Physical education and training. | Sports. | Physical education and training–Vocational guidance. | Sports–Vocational guidance.
Classification: LCC GV341 .W85 2021 (print) | LCC GV341 (ebook) | DDC 796.07–dc23
LC record available at https://lccn.loc.gov/2019029121
LC ebook record available at https://lccn.loc.gov/2019029122

mheducation.com/highered

Brief Contents

Contents

PREFACE

Was physical education or anatomy and physiology one of your favorite classes? Were you a high school athlete or did you play a club sport? Are you interested in fitness, physical activity, and sport? Most importantly, are you considering a career in a human movement field such as a physical education teacher, exercise specialist, personal trainer, or sport administrator? Then this text is for you! Come join us on this educational journey to learn about physical activity, physical education, and sport. We will provide you with the most up-to-date information while recognizing that the dynamic field of kinesiology and its disciplines are ever changing in this fast-paced, technology-driven society in which we live.

We challenge students from the beginning of their careers to commit to ongoing development and growth as professionals in their disciplines. Students are encouraged to be advocates for physical activity and quality physical education, to value diversity and appreciate its many forms, and to work toward making opportunities to participate in physical activity available to all people throughout their lifespan. We hope that, as young leaders, they will work collaboratively with other dedicated professionals to address the issues facing us, the challenges ahead, and the realization of physical education, exercise science, and sport's potential to positively contribute to the lives of all people.

ORGANIZATION

The 15 chapters of this book are organized into 4 parts. Part I provides students with an orientation to the field of kinesiology along with the field's disciplines. Chapter 1 focuses on the meaning and scope of contemporary physical education, exercise science, and sport. Emphasis is placed on understanding the scope of the disciplines and committing to professional development. In Chapter 2, students are introduced to the philosophy, goals, and objectives of physical education, exercise science, and sport. The last chapter in this part, Chapter 3, discusses the health and physical activity levels in our society, particularly in relation to the changing demographics, wellness movement, and fitness and physical activity movement.

In Part II, the historical foundations of the field and an overview of some of the disciplines are presented. The historical foundations are covered in Chapter 4, including our heritage from other countries and the significant influences on the growth of the field in the United States. In Chapter 5, an overview of motor behavior is provided. Chapter 6, biomechanics, is written by Dr. Deborah King, Ithaca College. Chapter 7 with its focus on exercise physiology and fitness follows. In Chapter 8, an overview of sport sociology is presented, and Chapter 9 provides information on sport and exercise psychology.

Chapter 10 focuses on physical education pedagogy and provides information on curriculum, teaching, and assessment.

Part III, which consists of four chapters, addresses professional considerations and career opportunities, including enhancing professional marketability. Chapter 11 focuses on professional development, including professional responsibilities, ethics, and certification. This edition includes information on social media and its use in networking and securing an internship and/or job. Chapter 12, on teaching and coaching careers, shows how opportunities for these careers have broadened from the school setting and school-age population to nonschool settings and people of all ages. In Chapter 13, employment opportunities for professionals interested in fitness- and health-related careers are discussed. Careers in sport management, sport communication, performance, and other sport-related careers are described in Chapter 14.

Part IV explores how professionals can be leaders and advocates and looks ahead to the future. The final chapter, Chapter 15, addresses two key professional responsibilities: leadership and advocacy. The textbook closes with a discussion of current and future trends.

Highlights of This Edition

The 20th edition of *Foundations of Physical Education, Exercise Science, and Sport* continues its dual emphasis on providing students with an overview of disciplinary knowledge and encouraging them to explore the expanding career opportunities. This edition reflects the dynamic nature of the field today and is designed for use in introductory and foundations courses. Specifically, the most significant change in this edition is an explicit emphasis placed on social justice, diversity, and cultural humility. These concepts and issues have been a component of the text for some time; however, we have created social justice boxes in each chapter to highlight the salient social issues that are concerning and prevalent related to the chapter focus. We believe, as physical education, exercise science, and sport professionals, that students and future professionals need to be educated about issues related to social justice and social inequalities.

The text continues its focus on the role of physical education, exercise science, and sport professionals in promoting lifespan participation in physical activity for all people. This text emphasizes the need for culturally competent professionals to work with our increasingly diverse population. The responsibility of professionals to serve as advocates for historically underserved populations is stressed; this work is essential if our goal of lifespan involvement in physical activity is to be achieved.

Updated information and statistics are used to help students stay abreast of developments in the field. Additional key changes to this edition are highlighted below:

- A focus on current trends has been included in each chapter. Salient factors and issues related to each chapter that are currently hot topics are discussed.
- Expanded emphasis on social justice and the importance of professionals to infuse this theme within their professional practice.
- Updated information on using social media to network and advance one's career is included.
- New end-of-chapter Discussion Questions are added to this edition and can be used by instructors to engage students' critical thinking skills in the classroom.
- Several chapters have been restructured based on government reports and policies that have significant applications for professional practice, such as *National Physical Activity 2018 Plan, Physical Activity Guidelines for Americans, 2015 Dietary Guidelines and MyPlate Recommendations, Gender and Race Report Card in Sports, SHAPE America Physical Education National Standards*, and *Every Student Succeeds Act*.
- Because the future of physical education, exercise, and sport is closely related to the issues and challenges of today, this edition combines these topics in one final chapter. This final chapter closes the textbook with an emphasis on leadership and advocacy and discusses future trends.

We hope that readers will gain knowledge and inspiration through the topics and issues discussed in this text. We hope that they will aspire to be future leaders and agents of change as physical education, exercise science, and sport professionals.

Successful Features

The following pedagogical aids have been incorporated into this textbook:

Instructional Objectives. At the beginning of each chapter, the instructional objectives and competencies to be achieved by the students are listed. This identifies for the students the points that will be highlighted. Attainment of the objectives indicates the fulfillment of the chapter's intent.

Summaries. Each chapter ends with a brief review of the material covered, assisting the students in understanding and retaining the most salient points.

Discussion Questions. At the end of each chapter, discussion questions are provided to stimulate critical thinking. Students are encouraged to share their perspectives with their classmates and to explore different solutions to the problems and issues presented.

Internet Resources. Each chapter includes a *Get Connected box*, which lists Internet sites that provide up-to-date information about relevant topics. The self-assessment exercises include activities that draw on these Internet resources.

Self-Assessment Activities. Self-assessment activities are presented at the end of each chapter to enable students to check their comprehension of the chapter material. More activities using technology resources and tools are included.

References. Each chapter provides up-to-date references to allow students to gain further information about the subjects discussed in the chapter.

Photographs. Carefully chosen photographs, many new, have been used throughout the text to enhance the presentation of material and to illustrate key points.

Writing Style. Foundations of Physical Education, Exercise Science, and Sport has been written in a style that students find readable and that provides them with important insights into the foundations and the roles of physical education, exercise science, and sport in the world today. Students will find substantial information about the career and professional opportunities that exist for knowledgeable, dedicated, and well-prepared professionals committed to the promotion of lifespan involvement in physical activity for all people.

The twentieth edition of *Foundations of Physical Education, Exercise Science, and Sport* is now available online with Connect, McGraw-Hill Education's integrated assignment and assessment platform. Connect also offers SmartBook® 2.0 for the new edition, which is an adaptive reading experience proven to improve grades and help students study more effectively. All the title's website and ancillary content is also available through Connect, including:

- An Instructor's Manual for each chapter.
- A full Test Bank of multiple-choice questions that test students on central concepts and ideas in each chapter.
- Lecture Slides for instructor use in class.

Test Builder in Connect

Available within Connect, Test Builder is a cloud-based tool that enables instructors to format tests that can be printed or administered within a LMS. Test Builder offers a modern, streamlined interface for easy content configuration that matches course needs, without requiring a download.

Test Builder allows you to:

- access all test bank content from a particular title.
- easily pinpoint the most relevant content through robust filtering options.
- manipulate the order of questions or scramble questions and/or answers.
- pin questions to a specific location within a test.
- determine your preferred treatment of algorithmic questions.

- choose the layout and spacing.
- add instructions and configure default settings.

Test Builder provides a secure interface for better protection of content and allows for just-in-time updates to flow directly into assessments.

Acknowledgments and Dedications

The authors extend their appreciation to Dr. Deborah King, Ithaca College, for authoring Chapter 6. We also thank the reviewers for their thoughtful feedback. The reviewers of this edition include:

Elizabeth Ash
Morehead State University

David Perron
Bryan College

Victor Romano
Catawba College

Barbara Tyree
Valparaiso University

This textbook would not have been possible without the outstanding professionals at McGraw-Hill who contributed in many ways to the completion of this project. We also extend our appreciation to our development editor, Amy Oline, for her patience and attention to detail, especially with the new online system!

In closing, the authors would like to acknowledge the people who helped support them throughout this endeavor.

Jennifer L. Walton-Fisette. This edition is lovingly dedicated to my wife, Theresa, and my children, Quinn and Harper, who have brought so much joy, love, and happiness to my life. I am truly grateful for their continued support of my professional endeavors. I also want to dedicate this edition to Bill and Marie Chaplin for their unwavering support and unconditional love over the past two decades. This book is also dedicated to my coauthor, Deb, who has been a great mentor and friend for many years. Her work ethic, attention to detail, ability to wax poetic justice out of a salient concept, and thoroughness in staying on top of the latest research and trends have allowed this Foundations text to be a success for decades. I continue to learn so much from her and feel grateful that I get a first-hand experience of her brilliance, humbleness, and caring heart.

Deborah Wuest. This edition is dedicated to my daughter, Meriber, who inspires me with her passion for the world's beautiful game—soccer or football as known globally. This book is also dedicated to my early-morning writing companions—my cats Jake, Rosie, Mia, Mira, Magic, and Casper and my dogs, Ally Goose and Bella. They were great company and, in their honor, a portion of the proceeds of this edition will be donated to the SPCA. Most importantly, a special thank you to my co-author, Jen. Jen continues to impress me with her enthusiasm for life, her commitment to the field, and her ongoing advocacy for social justice. I am honored to have Jen's leadership shape this edition, as she emerges as one of the leaders in the field. I value our longstanding professional relationship and personal friendship.

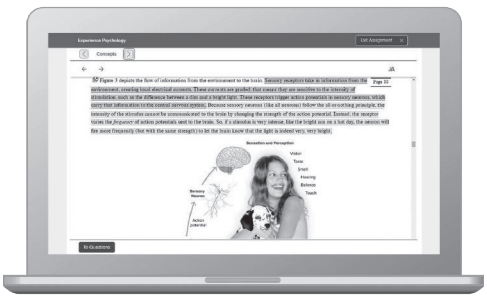
FOR INSTRUCTORS

You're in the driver's seat.

Want to build your own course? No problem. Prefer to use our turnkey, prebuilt course? Easy. Want to make changes throughout the semester? Sure. And you'll save time with Connect's auto-grading too.

65%

Less Time Grading



Laptop: McGraw-Hill; Woman/dog: George Doyle/Getty Images

They'll thank you for it.

Adaptive study resources like SmartBook® 2.0 help your students be better prepared in less time. You can transform your class time from dull definitions to dynamic debates. Find out more about the powerful personalized learning experience available in SmartBook 2.0 at **www.mheducation.com/highered/connect/smartbook**

Make it simple, make it affordable.

Connect makes it easy with seamless integration using any of the major Learning Management Systems—Blackboard®, Canvas, and D2L, among others—to let you organize your course in one convenient location. Give your students access to digital materials at a discount with our inclusive access program. Ask your McGraw-Hill representative for more information.

Padlock: Jobalou/Getty Images

Solutions for your challenges.

A product isn't a solution. Real solutions are affordable, reliable, and come with training and ongoing support when you need it and how you want it. Our Customer Experience Group can also help you troubleshoot tech problems—although Connect's 99% uptime means you might not need to call them. See for yourself at **status.mheducation.com**

Checkmark: Jobalou/Getty Images

SUPPORT AT every step

FOR STUDENTS

Effective, efficient studying.

Connect helps you be more productive with your study time and get better grades using tools like SmartBook 2.0, which highlights key concepts and creates a personalized study plan. Connect sets you up for success, so you walk into class with confidence and walk out with better grades.

Study anytime, anywhere.

Download the free ReadAnywhere app and access your online eBook or SmartBook 2.0 assignments when it's convenient, even if you're offline. And since the app automatically syncs with your eBook and SmartBook 2.0 assignments in Connect, all of your work is available every time you open it. Find out more at **www.mheducation.com/readanywhere**

"I really liked this app—it made it easy to study when you don't have your textbook in front of you."

- Jordan Cunningham, Eastern Washington University

Calendar: owattaphotos/Getty Images

No surprises.

The Connect Calendar and Reports tools keep you on track with the work you need to get done and your assignment scores. Life gets busy; Connect tools help you keep learning through it all.

Learning for everyone.

McGraw-Hill works directly with Accessibility Services Departments and faculty to meet the learning needs of all students. Please contact your Accessibility Services office and ask them to email accessibility@mheducation.com, or visit **www.mheducation.com/about/accessibility** for more information.

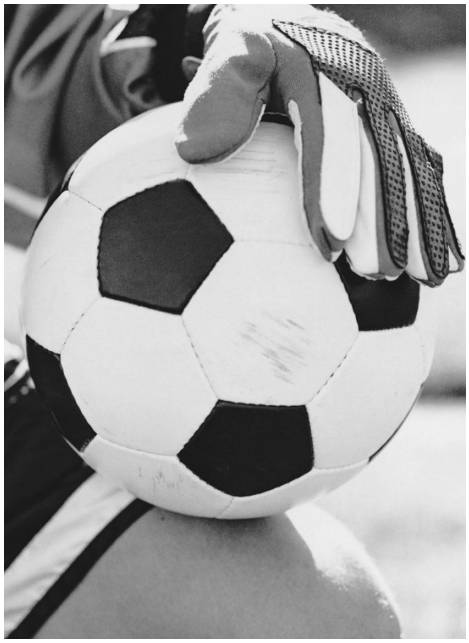
Top: Jenner Images/Getty Images, Left: Hero Images/Getty Images, Right: Hero Images/Getty Images

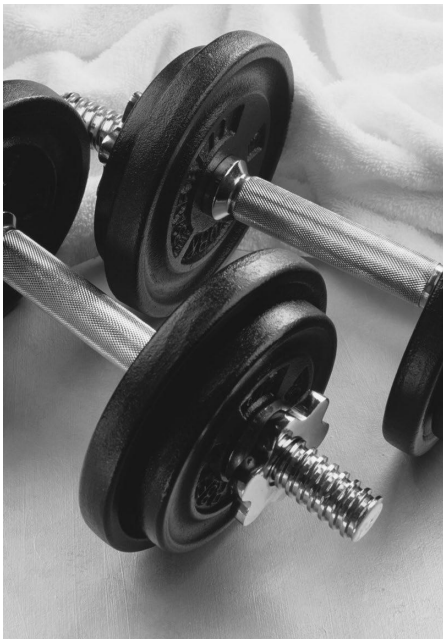
About the Authors

Jennifer L. Walton-Fisette is an associate professor of Physical Education Teacher Education in the School of Teaching, Learning, and Curriculum Studies and director of educator preparation at Kent State University. Before taking this position in 2008, she taught physical education and health in Rhode Island. She obtained her B.S. in physical education from Rhode Island College, her M.S. in sport pedagogy from Ithaca College, and her Ed.D. in Physical Education Teacher Education from the University of Massachusetts-Amherst. Her teaching responsibilities include: Secondary Physical Education Content; Inquiry into Professional Practice; Development and Analysis of Game Performance; Introduction to Physical Education, Fitness, and Sport; Analysis of Motor Skills; Curriculum Development; and Forms of Inquiry, a doctoral course. Her scholarship throughout her career has explored the critical examination of girls' lived experiences and embodied identities within physical education and physical activity through student voice, assessment, and curriculum development. She is currently exploring how sociocultural issues and social justice are addressed and implemented in PETE programs locally, nationally, and internationally.

Deborah A. Wuest is a professor in the Department of Health Promotion and Physical Education at Ithaca College, New York. She received her B.S. degree in physical education from SUNY Cortland, her M.S. degree in physical education from Indiana University, and her Ed.D. in Human Movement from Boston University. Deborah has over 45 years of teaching experience, has twice received Ithaca College's Charles C. Dana Award for Teaching Excellence, and most recently honored with the Ithaca College Faculty Excellence Award. Deborah teaches courses in the foundations of physical education, foundations of health sciences, stress management, coaching and computer applications in health and physical education. She has co-authored textbooks on foundations of physical education, exercise science, and sport; secondary methods in physical education, and humanism in coaching. Deborah is the Managing Editor of the Apps section on PECentral.

Anthony Saint James/Getty Images


Anthony Saint James/Getty Images


Mitch Hrdlicka/Getty Images

I Nature and Scope of Physical Education, Exercise Science, and Sport

Part I introduces the reader to physical education, exercise science, and sport. The first chapter sets the stage for the reader by providing definitions and an introduction to the specialized areas of study within physical education, exercise science, and sport. Chapter 1 concludes with a discussion of how to grow as a professional in physical education, exercise science, and sport. Chapter 2 includes the influences of various philosophies on programs and provides the reader with information about the objectives and assessment of physical education, exercise science, and sport. Chapter 3 describes the contribution of physical education, exercise science, and sport to society and health, and the critical role of professionals delivering services to people of all ages.

Physical education, exercise science, and sport are representative of the growing and expanding field of kinesiology. The growth of this field is reflected in the expanding knowledge base and the development of specialized areas of study. The expansion of physical education, exercise science, and sport has created a diversity of career options for professionals.

Polka Dot Images/Getty Images

CHAPTER 1

MEANING AND SCOPE

OBJECTIVES

After reading this chapter, students should be able to—

- Discuss the nature of contemporary physical education, exercise science, and sport, and show how it has evolved over the past five decades.
- Define the following specialized areas of study: sport philosophy, sport history, sport sociology, sport and physical activity psychology, motor development, motor learning, biomechanics, exercise physiology, sports medicine/athletic training, physical education pedagogy, adapted physical activity/physical education, and sport management.
- Describe how the disciplines are interdisciplinary to the professions of physical education, exercise science, and sport relative to the field of kinesiology.
- Explain the relationship of physical education, exercise science, and sport to allied fields of study.
- Describe the different types of research reports and their application to physical education, exercise science, and sport.
- Identify social media resources that can inform the practice within the field of physical education, exercise science, and sport.

This is one of the most exciting, dynamic times in the history of physical education, exercise science, and sport. Unfolding before us is the vision of lifetime involvement in physical activity for all people. This powerful vision is compelling for physical educators, exercise scientists, and sport leaders who have the potential to put it into action, which can influence the well-being and quality of life of people of all ages.

Contemporary physical education, exercise science, and sport have evolved from a common heritage—the traditional program of physical education designed to prepare teachers to serve children and youth in the school setting. Since the 1960s, the foundation, scope, and focus of our programs have grown and changed tremendously. As physical education expanded, new disciplines of study—exercise science and sport—emerged. As the knowledge base comprising this multidimensional field grew, specialized areas of study evolved and exciting new career opportunities began to appear for qualified professionals. Today

SOCIAL JUSTICE

Defining Social Justice: Professionals who are committed to social justice strive to provide opportunities for equality, to ensure access and to show sensitivity to those that are marginalized and less fortunate by challenging injustice and valuing diversity.

Talking Points

- Physical activity initiatives and opportunities need to be provided to all individuals regardless of one's social identity and status [e.g., gender identity, race, sexual identity, (dis)ability, socioeconomic status, and age] if we want to increase physical activity levels and decrease chronic and hypokinetic diseases.
- All aspects of human movement need to be advocated for and supported rather than placing emphasis on judging and critiquing the level or type of an activity over others (e.g., playing a sport is better than walking or doing yoga).
- Emphasis needs to be placed on the interrelatedness of the disciplines and allied fields instead of the disciplines operating as silos or in competition with one another.
- Establishing a critical perspective through scientific-based research will allow professionals to make informed decisions that influence their clients, players, employees, or students.

physical education, exercise science, and sport professionals serve people of all ages in a diversity of settings within a new and reformed field of study, kinesiology.

Providing an overview of the entire field of kinesiology is, quite admittedly, a challenge as it is expanding and changing rapidly. This virtual explosion of knowledge has led to the development of new areas of study that are highly specialized and discrete and yet, at the same time, highly interrelated and vitally connected. Thus in this text, we will refer to kinesiology with a specific emphasis placed on and within the disciplines of physical education, exercise science, and sport.

We now know that leading a physically active lifestyle can help prevent disease and positively contribute to health and well-being throughout the lifespan. If the health of our nation is to improve, physical education, exercise science, and sport professionals must make certain that all people have access to programs, regardless of their age, race, ethnicity, gender, gender identity, sexual identity, ability/disability status, income, educational level, or geographic location. This is a challenge that awaits you as future professionals.

Career opportunities in physical education, exercise science, and sport range from teaching in the school setting to instructing in nonschool settings, such as leading group exercise classes in a community or corporate fitness setting.

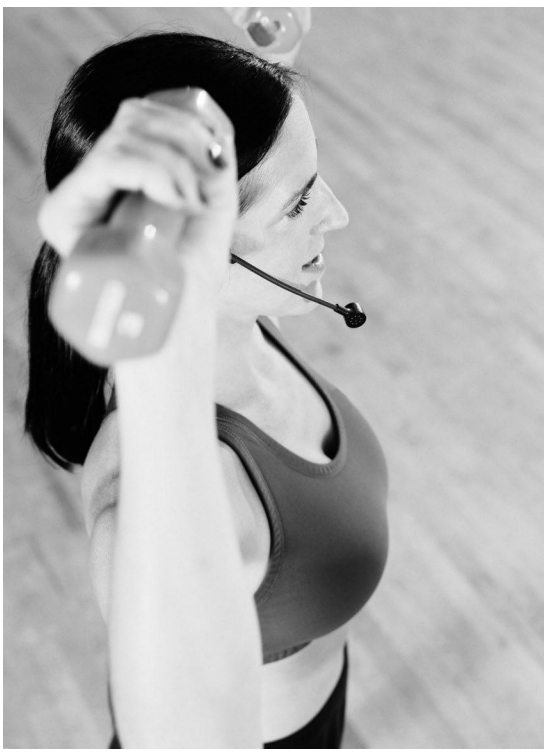
Hero/Corbis/Glow Images

Physical educators, exercise scientists, and sport leaders need to know how to read scientific and practitioner-based research. As the field continues to grow and change, this knowledge base will inform your professional practice and provide a clearer picture of all individuals across the lifespan within today's society. As we enter the next decade

in the twenty-first century, new and more exciting opportunities and challenges await us.

CONTEMPORARY PHYSICAL EDUCATION, EXERCISE SCIENCE, AND SPORT PROGRAMS

The proliferation of physical education, exercise science, and sport programs during the last five decades has been remarkable. Programs have expanded from the traditional school setting to community, home, worksite, commercial, and medical settings. School-community partnerships bring sport instruction and fitness programs to adults in the community and offer increased opportunities for youth involvement. Community recreation programs offer a great variety of instruction and sport activities for people of all ages and abilities, such as tennis, golf, bowling, softball, yoga, and martial arts clubs.



Ryan McVay/Getty Images

Health club membership is booming. Today, over 61 million people belong to a health club, compared with only 20.7 million in 1990.[1] Adults seeking the convenience of working out at home boosted the sales of home exercise equipment to $3.6 billion a year and is projected to reach 4.4 billion by 2024.[2] Walkers, joggers, bikers, and swimmers join the millions who meet the daily recommendation of including 30 minutes of physical activity into their lives.

Corporations offer employees comprehensive onsite health promotion programs, encompassing a wide range of fitness activities as well as cardiac rehabilitation and nutritional counseling. Many worksites offer smoking cessation, stress management, and occupational safety courses to their employees, who find it convenient to fit these health-enhancing opportunities into their busy schedules. Hospitals sponsor cardiac rehabilitation programs and increasingly offer fitness programs to community members. Sports medicine clinics treat injured sport and fitness participants of all ages, no longer limiting their practice to the elite adult athlete.

People of all ages are seeking out sport opportunities in many different settings. Youth sports involve more than 45.7 million children a year.[3] Almost 8 million athletes participate in interscholastic sports and over 611,000 participate in intercollegiate sports.[4–7] Sport events such as AAU

People of all ages enjoy athletic competition.

Courtesy of Sarah Rich

basketball and travel teams, Senior Games, running events, Tough Mudders, and master's swimming competitions involve millions of adults in sport competitions. Community recreational leagues for basketball, softball, soccer, and volleyball provide increased opportunities for participation. Sport events such as the Super Bowl, the Olympics, the World Cup, and the National Collegiate Athletic Association basketball tournament capture the enthusiasm of millions of spectators. Girls and women are participating in sports and physical activities in record numbers.

School physical education programs focus on promotion of lifespan involvement in physical activity. Students learn the skills, knowledge, and attitudes that will enable them to participate in various physical activities throughout their lives. At the collegiate level, young adults enroll in courses in CrossFit or tennis, work out at fitness centers, join wellness and fitness classes, and take part in recreational sports programs. Intercollegiate athletic programs for men and women continue to expand, involving more participants and attracting greater interest from the public.

People are engaging in physical activity in record numbers. There is increased public recognition that being active is good for your health. Several national reports, such as the 2016 National Physical Activity Plan,[8] *Healthy People 2020*,[9] and *The Physical Activity Guidelines*[10] present overwhelming evidence that people of all ages can improve their health and quality of life by including moderate amounts of physical activity in their daily lives. Although most people know that physical activity is good for them and participation in physical education, exercise science, and sport programs is at an all-time high, a closer look at the participation by children, adolescents, and adults reveals much cause for concern.

Despite the documented health benefits of physical activity, 80% of adults do not meet the recommended amount of aerobic and muscle-strengthening

mylife photos/Alamy Stock Photo

Maria Taglienti-Molinari/Getty Images

physical activity.[11] Young children and adolescents are more active than adults are, but their activity levels decrease with age. Only 27% of high schoolers met the recommendation for aerobic capacity and muscle-strengthening activity.[12] In today's society, many children and youth are inactive, unfit, and overweight, placing them at increased risk to develop many chronic diseases.

Further examination of health status and physical activity patterns in the United States reveals health disparities and fitness inequities among different population groups. Age, socioeconomic status, race, ethnicity, gender, educational attainment, and geographic location were found to influence physical activity levels. Inactivity is greatest among women, minorities, the economically and educationally disadvantaged, people with disabilities, and the aged.[9] These populations have less access to services and face other barriers to the adoption and maintenance of physically active lifestyles. Their limited opportunities for physical activity adversely affect their health, their quality of life, and, ultimately, their lifespan.

Involvement in physical activity should begin at an early age and continue throughout one's life. School physical education programs are the primary avenue for helping children and youth learn the skills, knowledge, and attitudes to lead a healthy, physically active lifestyle. Health policy reports recognize the important contribution physical education can make to health and call for daily, high-quality physical education for all students K–12.[9] Unfortunately, the number of children and youth participating in daily physical education programs has declined. Daily participation in physical education by high school students decreased from 42% in 1991 to 25% in 1995 and rose slightly to 29% in 2013.[12,13] Many lifelong habits (e.g., drug and alcohol abuse, smoking/vaping, lack of physical activity) and many diseases (e.g., type 2 diabetes, heart disease) have their roots in childhood. That is why it is important to develop positive health habits early in life. Over 50 million students are enrolled in public and private elementary and secondary schools in the United States and are projected to reach 56.5 million by the 2025–2026 academic year, with a slight increase in public schools and a significant decrease in private schools.[14] Imagine the health benefits if each of these students had access to daily quality physical education pre-K–12. Increasing the number of children and youth that have the opportunity to participate in quality physical education programs on a daily basis is an important priority.

The main challenges facing professionals are increasing the level of physical activity by people across the nation and addressing inequities in physical activity opportunities. As physical education, exercise science, and sport professionals, we must make a greater commitment to reach out to these populations and involve them in our programs. We must address the specific barriers that inhibit the adoption and maintenance of physical activity by different population groups, utilize new approaches that are sensitive to the needs of increasingly diverse populations, and improve access by developing quality public programs in schools, recreation centers, worksites, and health care settings. All people have the right to good health and the opportunity to be physically active throughout their lifespan.

As you begin your professional career, make a commitment to service. Commit yourself to creating opportunities for all people—regardless of age, income, education, race, ethnicity, gender, sexual identity, geographic location, or ability—to enjoy and to benefit from lifespan participation in physical activity.

Physical Education, Exercise Science, and Sport Defined

Physical education, exercise science, and sport share a common focus—human movement or, more generally, physical activity. Yet, each discipline offers a unique approach as to how human movement and physical activity are learned, enhanced, or achieved. Each of these disciplines is defined in this section as well as in the Definitions of Terms box on page 9.

Physical education is an educational process that uses physical activity as a means to help individuals acquire skills, fitness, knowledge, and attitudes that contribute to their optimal development

HEALTHY PEOPLE 2020—PHYSICAL ACTIVITY OBJECTIVES

- PA-1: Reduce the proportion of adults who engage in no leisure-time physical activity.
- PA-2: Increase the proportion of adults who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity.
- PA-3: Increase the proportion of adolescents who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity.
- PA-4: Increase the proportion of the Nation's public and private schools that require daily physical education for all students.
- PA-5: Increase the proportion of adolescents who participate in daily school physical education.
- PA-6: Increase regularly scheduled elementary school recess in the United States.
- PA-7: Increase the proportion of school districts that require or recommend elementary school recess for an appropriate period of time.
- PA-8: Increase the proportion of children and adolescents who do not exceed recommended limits for screen time.
- PA-9: Increase the number of States with licensing regulations for physical activity provided in childcare.
- PA-10: Increase the proportion of the Nation's public and private schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours (that is, before and after the school day, on weekends, and during summer and other vacations).
- PA-11: Increase the proportion of physician office visits that include counseling or education related to physical activity.
- PA-12: (Developmental) Increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs.
- PA-13: (Developmental) Increase the proportion of trips made by walking.
- PA-14: (Developmental) Increase the proportion of trips made by bicycling.
- PA-15: (Developmental) Increase legislative policies for the built environment that enhance access to and availability of physical activity opportunities.

Source: US Department of Health and Human Services. *Healthy People 2020: Improving the Health of Americans*. Washington, D.C.: US Government Printing Office, 2010.

and well-being. In this definition, the term *education* refers to the ongoing process of learning that occurs throughout our lifespan. Education, just like physical education, takes place in a variety of settings and is not limited to a specific age group. Homeschooling, continuing education through distance learning, worksite health promotion programs, and preschools are just some of the expanded settings for education and physical education programs. Teachers today may be called instructors, leaders, directors, or facilitators. Today's students span the age range, from the very young exploring movement skills in a preschool program to the older adults learning how to play golf through a community recreation program.

Most physical education programs today are based on a developmental model. This model purports that physical education, through the use of carefully structured physical activity, contributes to the development of the whole person. Physical education includes the acquisition and refinement of motor skills, the development and maintenance of fitness for optimal health and well-being, the attainment of knowledge about physical activities, and the fostering of positive attitudes conducive to lifelong learning and lifespan participation.

Exercise physiologists study the body's short- and long-term adaptations to exercise.

Mauro Grigollo/Getty Images

Within the last five decades, there has been an increase in the scholarly study of physical education. Research continues to expand our knowledge with respect to the preparation of physical education teachers, teacher effectiveness, teaching methods, and improvement of student learning; it also provides us with new insights on coaches' and athletes' behaviors.

Exercise science is the scientific analysis of exercise or, more inclusively, physical activity. To study physical activity, exercise scientists draw upon scientific methods and theories from many different disciplines, such as biology, biochemistry, physics, and psychology. The application of science to the study of physical activity led to rapid expansion of the knowledge base of exercise science. As the knowledge base of exercise science grew, so did our understanding of the effects of physical activity on various systems of the body. The significant role that physical activity plays in preventing disease and promoting health became clearer. Exercise's value as a therapeutic modality in the treatment of disease and the rehabilitation of injuries became better known.

Exercise science is a very broad area of study, encompassing many different aspects of physical activity. Through research, scholars gain new insights into how people's movements develop and change across their lifespan and further expand their understanding of how people learn motor skills. Analysis of the performance of motor skills using biomechanics leads to improvement in skill efficiency and effectiveness. Researchers' exploration of the limits and capacities of performers has enabled athletes of all abilities to perform at higher levels of achievement. The psychological effects of physical activity on well-being and strategies to enhance adherence to exercise and rehabilitation programs are some other areas of study within exercise science.

Sports are highly organized, competitive physical activities governed by rules. Rules standardize the competition and conditions so that individuals can compete fairly and achieve specified goals. Sports provide meaningful opportunities to demonstrate one's competence and to challenge one's limits. Competition can occur against an opponent or oneself.

People of all ages and abilities engage in sports for enjoyment, personal satisfaction, and the opportunity to attain victory and/or obtain rewards. The level of competition ranges from recreational sport to elite sport. When sport is highly developed, governing bodies regulate sport and oversee its management. *Athletics* refers to highly organized, competitive sports engaged in by skillful participants. At this level, coaches play a significant role, athletes are highly skilled, specially trained officials ensure the fairness of the competition, records are kept, events are promoted through the media, and spectators assume an important role. Sports occupy a prominent position in our society.

Since the early 1970s, there has been an enormous interest in the scholarly study of sport. These sport studies have focused on the significant role of sport in our society, its tremendous impact on our culture, and its effects on the millions of people who play sports and the millions more who watch and read about them. Scholars study the philosophical, historical, sociological, and psychological dimensions of the sport experience. Examples of areas of investigation include sport ethics, the influence of significant historical events on the sport experience, the inequities in sport opportunities for minorities, and the control of anxiety by athletes during performance. Other researchers have directed their attention to investigating the management of sport and its promotion. The growing popularity of sport and its prominent role in our society makes sport a vital area of study.

DEFINITION OF TERMS

- Exercise—physical activity done for the purpose of getting fit that increases energy expenditure above baseline levels. Exercise is planned, structured, and repetitive. The duration, frequency, and intensity of exercise can be measured.
- Physical Activity—bodily movement produced by the contraction of the skeletal muscles that substantially increase energy expenditure above baseline level. A broad term, it encompasses exercise, sport, dance, active games, activities of daily living, and active occupational tasks.
- Physical Education—subject matter taught in schools that provides K–12 students with opportunities to learn, and have meaningful content and appropriate instruction. Quality physical-education programs focus on increasing physical competence, health-related fitness, self-responsibility, and enjoyment of physical activity for all students so that they can be physically active for a lifetime.
- Physical Fitness—capacity of people to perform physical activities; set of attributes that allow individuals to carry out daily tasks without undue fatigue and have the energy to participate in a variety of physical activities; state of well-being associated with low risk of premature health problems.
- Sport—well-established, officially governed competitive physical activities in which participants are motivated by internal and external rewards.

Sources: Adapted from the President's Council on Fitness, Sports, and Nutrition. Definitions: Health, fitness, and physical activity. 2013 (www.fitness.gov); US Department of Health and Human Services. *Healthy People 2020* (www.healthypeople.gov); National Association for Sport and Physical Education. *Moving into the Future: National Standards for Physical Education* (2nd ed.). Reston, Va.: Author, 2004; and Coakley, J. *Sport in Society: Issues and Controversies* (10th ed.). New York, 2009, McGraw-Hill.

The realm of physical education, exercise science, and sport today embraces many different programs, diverse settings, and people of all ages. This recent growth of physical education, exercise science, and sport has been accompanied by an increased interest in its scholarly study. This research has led to the development of specialized areas of knowledge. The subsequent increase in the breadth and depth of knowledge provides a foundation for professional practice. The expansion of physical education, exercise science, and sport has led to a tremendous growth of career opportunities for enthusiastic and committed professionals.

Physical Education, Exercise Science, and Sport

Corbin[15] defines a *field* as a "combination of a well-established discipline and one or more professions that deliver a social service" and are "focused on common goals." Disciplinarians engage in research and scholarly endeavors to advance a knowledge base. This knowledge serves as a foundation for the professionals who deliver services to people.[15] Professionals use this knowledge and their skills to design and deliver programs to meet the unique and changing needs of the people they serve. As we continue to grow and become increasingly specialized, we must keep sight of our common focus on physical activity. Both the professional and disciplinary dimensions of the field enrich our understanding and ability to promote lifespan involvement in regular physical activity for all people.

The Profession

Physical education, exercise science, and sport can be described with reference to their status as a profession. A *profession* is an occupation requiring specialized training in an intellectual field of study that is dedicated to the betterment of society through service to others. Professionals provide services to others through the application of knowledge and skills to improve people's well-being.

Physical educators, exercise scientists, and sport leaders possess a bachelor's degree and frequently pursue advanced study via graduate programs in the field. Their professional preparation programs include extensive study in the theoretical aspects of the field, skill and content knowledge development, and often practical experiences that allow them to apply their knowledge and use their skills under the guidance of qualified professionals. Additional requirements and certifications may be necessary to engage in professional practice.

Today there is increased recognition by society of the valuable contribution professionals in our field make to the lives of others. Our commitment to promoting lifespan physical activity for all members of society benefits the health of the nation. The expansion of physical education, exercise science, and sport programs to different settings and the involvement of people of all ages in our programs offer professionals increased opportunities to serve others and enhance their well-being.

The emergence of new professional opportunities has created a need for highly qualified professionals who possess a high level of skill, an appreciation and understanding of the needs of an increasingly diverse population, and a sound grasp of the knowledge of physical education, exercise science, and sport. Throughout the remainder of this text, the term *professionals* will be used in place of "physical educators, exercise scientists, and sport leaders."

More and more individuals with disabilities are engaging in sports. Here athletes are playing quad rugby.

Image Source/Getty Images

The Academic Discipline

In the 1960s, the field of physical education advanced its status as an academic discipline. Henry[16] defines an *academic discipline* as

> an organized body of knowledge collectively embraced in a formal course of learning. The acquisition of such knowledge is assumed to be an adequate and worthy objective as such, without any demonstration or requirement of practical application. The content is theoretical and scholarly as distinguished from technical and professional.

An academic discipline has a focus, a conceptual framework that provides structure for the field, a unique scope in comparison to other fields, and distinct scholarly methods and modes of inquiry leading to the advancement of knowledge and deeper understanding. This body of knowledge is worthy of study for its own sake and does not need to have any immediate application to professional practice. Traditional academic disciplines include biology, psychology, philosophy, history, and mathematics.

The seminal point in the development of the discipline movement occurred in 1964 when Franklin Henry called for the "organization and study of the academic discipline herein called physical education."[16] His clarion call came at a time when forces in society were exerting pressure for educational reform, improved educational standards, and greater academic rigor in the preparation of teachers. Then, physical education teacher preparation programs focused on the application of knowledge and endured criticism for their lack of academic rigor, their emphasis on the learning of job-related skills, and their focus on activity-based courses, such as basketball or badminton.

Henry's call for an academic discipline stimulated greater scholarly activity by academicians at colleges and universities. Developing technologies, theoretical knowledge, and methods of scientific inquiry from other disciplines were directed to the study of physical education and increasingly to

People of all ages are frequenting fitness centers and health clubs. Many work out on a regular basis. Regular physical activity contributes to good health and overall quality of life.

John Foxx/Getty Images

Athletic trainer helping athlete with rehabilitation.

Photodisc/Alamy Stock Photo

exercise and sport. The proliferation of research and generation of scholarship led to the development of specialized areas of study, commonly called *disciplines*.

Disciplines within Physical Education, Exercise Science, and Sport

The field of kinesiology has evolved into a variety of disciplines (see Table 1-1), many of which fall under the broader professional umbrellas of physical education, exercise science, and sport. The interdisciplinary nature of physical education, exercise science, and sport is evident from the disciplines identified and described in this section. Theories, principles, scientific methods, and modes of inquiry from many other academic disciplines were used by researchers and scholars in the development of these specialized areas of study. Knowledge and research methods from the hard sciences of biology, chemistry, physics, anatomy, physiology, and mathematics strongly influenced the development of the disciplines of exercise physiology and sport biomechanics. Psychology, sociology, history, and philosophy, often called the social sciences, formed the foundation for the development of sport and physical activity psychology, motor development, motor learning, sport sociology, sport history, and sport philosophy. The rehabilitation sciences, particularly physical therapy, exerted an important influence on the development of sports medicine, athletic training, and adapted physical activity. Educational research significantly affected the development of physical education pedagogy. In the discipline of sport management, the influence of management, law, communication, and marketing is evident.

The growth of these disciplines broadens the scope of the field of kinesiology. Equally important, the interdependence between these growing areas offers us valuable knowledge and greater insight as we move toward the accomplishment of our goals. The disciplines are briefly described below.

Exercise physiology is the study of the effects of various physical demands, particularly exercise, on the structure and function of the body. The exercise physiologist is concerned with both short-term (acute) and long-term (chronic) adaptations of the various systems of the body to exercise. The effects of different exercise programs on the muscular and cardiovascular systems, the immune system, and the health status of different population groups such as children and the aged are just some areas of study within the field. Clinical exercise testing, design of rehabilitation programs for postcardiac patients, and planning of exercise programs to prevent cardiovascular disease are among the responsibilities of exercise physiologists. (See Chapter 7.)

TABLE 1-1 Career Opportunities within the Disciplines of Physical Education, Exercise Science, and Sport

Exercise Physiology	Personal trainers, fitness directors, strength and conditioning specialists, group exercise instructor, cardiac and pulmonary rehabilitation specialists, and higher education faculty, physical therapists, and occupational therapists with advanced degrees.
Sport Medicine/Athletic Training	Sports medicine physician, athletic trainer, exercise physiologist, kinesiotherapist, physical therapist, nursing, doctor of osteopathy and nutrition/dietetics.
Sport Biomechanics	Lab technician in gait analysis and strength and flexibility; researcher, designer, and tester of sport companies, interfaces, and athletes; higher education faculty (most require an advanced degree).
Sport Philosophy	Coach, sport journalist, and advanced degrees could lead to becoming a lawyer and higher education faculty.
Sport History	Sport historian, higher education faculty (advanced degree required).
Sport and Physical Activity Psychology	Academic, clinical, applied with sport teams and individuals participating in physical activity (advanced degree required).
Motor Development	Physical/adapted physical education teacher, coach, rehabilitation specialist.
Motor Learning	Physical/adapted physical education teacher, coach, rehabilitation specialist.
Sport Sociology	Coach, journalist, higher education faculty (advanced degree required).
Physical Education Pedagogy	Physical education teacher, coach.
Adapted Physical Activity/ Physical Education	Physical/adapted physical education teacher, coach, adapted physical activity director.
Sport Management	Account or event coordinator/director, media and public relations specialist, sales representative, sport facility operations manager, sports marking director, sports information director, sport agent.

Sports medicine/athletic training is concerned with the prevention, treatment, and rehabilitation of sports-related injuries. Athletic trainers' responsibilities are broader than just administering treatment to the injured athlete on the playing field. From the standpoint of prevention, the athletic trainer works with the coach to design conditioning programs for various phases of the season, to correctly fit protective equipment, and to promote the welfare of the athlete, such as counseling the athlete about proper nutrition. With respect to treatment and rehabilitation, the athletic trainer assesses injuries when they occur, administers first aid, works collaboratively with the physician to design a rehabilitation program, provides treatment, and oversees the athlete's rehabilitation. (See Chapter 13.)

Sport biomechanics applies the methods of physics and mechanics to the study of human motion and the motion of sport objects (e.g., a baseball or javelin). Biomechanists study the effect of various forces and laws (e.g., Newton's laws of motion) on the body and sport objects. The musculoskeletal system and the production of force, leverage, and stability are examined with respect to human movement and sport object motion (e.g., spinning across the circle to throw a discus). Analysis of movements with respect to efficiency and effectiveness is used to help individuals improve their performance. (See Chapter 6.)

Sport philosophy examines sport from many different perspectives. Sport philosophy encompasses the study of the nature of reality, the structure of

Biomechanists analyze the mechanical aspects of athletes' skill performance in order to help them improve.

Source: SSGT, Jason M. Carter, USMC/DoD Media.

knowledge in sport, ethical and moral questions, and the aesthetics of movement. Sport philosophers critically examine the meaning of sport for all participants involved and enjoin us to question our beliefs and assumptions about sport. Sport philosophers engage in systematic reflection, use logic as a tool to advance knowledge and arrive at decisions, and seek to understand the relationship between the mind and the body. Sport philosophers debate questions of ethics, morals, and values. (See Chapter 2.)

Sport history is the critical examination of the past, with a focus on events, people, and trends that influenced the development and direction of the field. History is concerned with the who, what, when, where, how, and why of sport.[17] These facts, when placed in the social context of the time, help us better understand the present and gain insight regarding the future. (See Chapter 4.)

Sport and physical activity psychology uses principles and scientific methods from psychology to study human behavior in sport.[17] Sport psychologists help athletes improve their "mental game," that is, develop and effectively apply skills and strategies that will enhance their performance. Achievement motivation, regulation of anxiety, self-confidence, rehabilitation adherence, cohesion, and leadership are among the topics studied by sport psychologists. Recently, physical activity psychology has attracted greater attention from researchers. Physical activity psychology is concerned with exercise addiction, adherence, and other psychological issues affecting the well-being of people who are physically active. (See Chapter 9.)

Motor development studies the factors that influence the development of abilities essential to movement. The motor development specialist uses longitudinal studies (i.e., studies that take place over a span of many years) to analyze the interaction of genetic and environmental factors that affect the ability of individuals to perform motor skills throughout their lifespan. The role of early movement experiences, heredity, and maturation on children's development of motor skills is an important focus of study. Professionals use theories of development to design appropriate movement

Sport psychologists help athletes achieve optimal levels of performance.
Karl Weatherly/Getty Images

experiences for people of all ages and abilities. (See Chapter 5.)

Motor learning is the study of changes in motor behavior that are primarily the result of practice and experience. The effect of the content, frequency, and timing of feedback on skill learning is a critical area of study. Motor learning is concerned with the stages an individual progresses through in moving from a beginner to a highly skilled performer. The most effective conditions for practicing skills, the use of reinforcement to enhance learning, and how to use information from the environment to modify performance are investigated by motor learning specialists. Motor control, intimately related to motor learning, is concerned with the neurophysiological and behavioral processes affecting the control of skilled movements. (See Chapter 5.)

Sport sociology is the study of the role of sport in society, its impact on participants in sport, and the relationship between sport and other societal institutions. Sport sociologists examine the influence of gender, race, and socioeconomic status on participation in sports and, more recently, physical activity. Drug abuse by athletes, aggression and violence, the effect of the media on sport, and player–coach relationships interest sport sociologists. The experiences of the millions of children involved in youth sport has also drawn the attention of sport sociologists. (See Chapter 8.)

Physical education pedagogy can be defined broadly to include the study of teaching and learning in school and nonschool settings. Physical education pedagogy studies how physical educators and sport leaders provide an effective learning environment, achieve desired learning goals, and assess program outcomes. Physical education pedagogy seeks to determine the characteristics and skills possessed by effective teachers and coaches and how these influence student/athlete activity and student/athlete learning. Curricular development, its implementation, and the preparation of teachers are major foci in physical education pedagogy. (See Chapter 10.)

Adapted physical activity/physical education is concerned with the preparation of teachers and sport leaders to provide programs and services for individuals with disabilities. Specialists modify activities and sport to enable people with different abilities to participate. By federal law, adapted physical educators

Physical education pedagogy studies the behaviors of teachers and coaches, identifying those that contribute to an effective learning environment.

Erik Isakson/Getty Images

Sport sociologists study the behavior of people in sport situations—athletes, coaches, and fans—as well as the impact of sport on the community.

Design Pics/Don Hammond

have a role in designing an individualized educational plan (IEP) for students with disabilities so that they can participate to the fullest extent they are able in school physical education. Advocacy to secure services and leadership to create more opportunities in physical education and sport are important aspects of this field. (See Chapters 10 and 12.)

Sport management encompasses the many managerial aspects of sport. These include personnel management, budgeting, facility management, and programming. Other aspects of sport management are law, policy development, fundraising, and media relations. Knowledge from this area can be used by professionals in many different aspects of the sport enterprise, including interscholastic and intercollegiate sports, professional sports, fitness and health clubs, community sport and recreation programs, and sporting goods sales. (See Chapter 14.)

ALLIED FIELDS

Health, recreation and leisure, and dance are frequently referred to as allied fields. These allied fields share many purposes with physical education, exercise science, and sport, namely the development of the total individual and concern for quality of life. However, the content of the subject matter of the allied fields and the methods used to accomplish their goals may vary from the subject matter and methods of physical education, exercise science, and sport.

Health

Health education concerns itself with the total well-being of the individual, encompassing physical, mental, social, emotional, occupational, and spiritual health. Three areas within health education are health instruction, provision of health services, and environmental health.

Health instruction focuses on teaching the basics of healthy living in many areas, including disease prevention, mental health, nutrition, physical fitness, stress management, and dealing with abuse of drugs and alcohol. Health services is concerned with developing and maintaining a satisfactory level of health for all people through services such as routine eye examinations, cholesterol and blood pressure monitoring, and cancer screening. Environmental health focuses on the development of healthful and safe environments where individuals are not needlessly exposed to hazards such as toxic chemicals and infectious materials.

Americans are becoming increasingly conscious of the instrumental role physical activity plays in one's health-related quality of life. Data supporting the health benefits of participation in appropriate physical activity on a regular basis continue to mount. Accrued benefits of regular physical activity include the prevention of coronary heart disease, hypertension, noninsulin-dependent diabetes mellitus, osteoporosis, obesity, and mental health problems.[9] Other benefits may include the reduction of the incidence of stroke and the maintenance of the functional independence of the elderly.[9] Additionally, it has been found that, on average, individuals who are physically active outlive individuals who are physically inactive.[9] The strong role regular and appropriate physical activity plays in the health and well-being of individuals further confirms the allied nature of health and physical education, exercise science, and sport.

Recreation and Leisure

Another allied field is recreation and leisure. Recreation and leisure are generally thought of as self-chosen activities that provide a means of revitalizing and refreshing one's body and spirit. The spectrum of activities ranges from active to passive and from group to individual in nature.

It is within recreation and leisure opportunities that individuals of all ages can simply play. The notion of play, whether formal or informal, is often lost after early childhood and youth. Ask yourself, when was the last time that you played? How do you feel when you simply play? Most often, individuals have fun and feel a sense of enjoyment when they are free to play, create their own games and activities, and have the opportunity to express themselves through physical movement (or other forms of play).

Schools, communities, and businesses offer a wide range of activities to meet the fitness and leisure needs of individuals. Worksite fitness programs, industrial sport leagues, commercial fitness programs, competitive recreational leagues, instructional clinics, and open facilities for drop-in recreation are increasing in number. During nonschool hours, school facilities are the site for various recreational offerings for people of all ages. Many individuals and families pursue recreational activities independently as well.

Therapeutic recreation focuses on providing a broad range of services for individuals of all ages who have disabilities. Through a diversity of interventions, the individual's quality of life is enhanced, the development of leisure skills is encouraged, and the integration of the individual into community recreational opportunities and life is emphasized.

Recreation and leisure can contribute to the quality of an individual's life. They provide opportunities for individuals to engage in freely chosen activities, including physical activities that will yield beneficial health outcomes, during their leisure time.

Dance

The third allied area is dance. Dance is a popular activity for people of all ages and is both a physical activity and a performing art that gives participants an opportunity for aesthetic expression through movement.

As a form of recreation, dance provides opportunities for enjoyment, self-expression, and relaxation. Dance also can be used as a form of therapy, providing opportunities for individuals to express their thoughts and feelings. It provides a means to cope with the various stresses placed on individuals. Dance is increasingly used as a means to develop fitness.

There are many forms of dance that are enjoyed by individuals—including ballet, ballroom, folk, clog, modern (e.g., salsa and hip-hop), square, and tap. Cultural heritage is reflected in and passed on through dance activities.

Physical activity contributes to health and fitness throughout life. Bicycling is an excellent activity for people of all ages.

Ariel Skelley/Blend Images LLC

Health, recreation and leisure, and dance are allied fields to physical education, exercise science, and sport. The overall focus of these fields of endeavor is the development of the total individual and the enhancement of each person's quality of life. Attainment of these aims involves health promotion, pursuit of worthy leisure-time activities, and creative expression through dance. These experiences, coupled with the movement activities that compose the realm of physical education, exercise science, and sport, offer the potential to enhance the lives of people of all ages. Fulfillment of this potential will depend on the quality of leadership provided by professionals in health, recreation and leisure, dance, physical education, exercise science, and sport.

GROWING AS A PROFESSIONAL IN PHYSICAL EDUCATION, EXERCISE SCIENCE, AND SPORT

As a future professional, it is important that you make a commitment to your discipline that goes well beyond your academic course work and practical experience. You might ask why it is important for professionals with bachelor's and graduate degrees to continue professional development throughout their careers. The primary reason is that our field and your specialized area of study is constantly changing, placing us in a position to continue our knowledge development based on the latest research, both scientific and practitioner-based. Research findings create opportunities for professionals to inform, change, modify, and enhance their practice. If you do not want to be that professional that is deemed "old school," then it is your ethical duty to stay current in the latest research, practice, and technologies to provide your students, clients, and players with the most accurate and effective instruction and practice.

Do you believe everything that you hear and read or do you draw your own conclusions? How do you know what to believe or not to believe (i.e., what is fact and what is falsified interpretation)? In the first part of this text, we are going to educate you on how to read and critique research by guiding you through the 12 Steps to Understanding Research Reports (see box). In the Self-Assessment Activities found at the end of

Adults can use a variety of physical activities to accumulate the recommended 30 minutes a day of moderate-intensity physical activity necessary for health benefits.

Fran Polito/Getty Images

12 STEPS TO UNDERSTANDING RESEARCH REPORTS

Steps	Questions
Step 1—Citation	What is the name of the study, who is the author(s), and where and when was it published? Report the complete reference citation using APA format.
Step 2—Purpose and General Rationale	What was the purpose of the study and how did the author(s) make a case for its importance? Is the study quantitative or qualitative in nature?
Step 3—Fit and Specific Rationale	How does the topic of the study fit into the existing research literature, and how is that information used to make a specific case for the investigation?
Step 4—Participants	Who was studied (give number and characteristics), and how were they selected to participate in the study?
Step 5—Context	Where did the study take place? Describe important characteristics of the environment and setting (e.g., group demographics).
Step 6—Steps in Sequence	In the order performed, what were the major procedural steps in the study? Describe or diagram in a flowchart. Show a sequential order and any important relationships among the steps.
Step 7—Data Collection	What data sources were used (e.g., test scores, questionnaire responses, or frequency counts for a quantitative study or field notes, interview transcripts, photographs, or diaries for a qualitative study), how were the data collected, and what was the role of the author(s) throughout the process?
Step 8—Data Analysis	What form(s) of data analysis was used, and what specific questions was it designed to answer? What statistical operations and computer programs, if any, were employed?
Step 9—Results	What did the author(s) identify as the primary results (products or findings produced by the analysis of data)? In general, "what was going on there?"
Step 10—Conclusions	What did the author(s) assert about how the results in step 9 responded to the purpose(s) established in step 2, and how did the events and experiences of the entire study contribute to that conclusion?
Step 11—Cautions	What cautions does the author(s) raise about the study itself or about interpreting the results? Add here any of your own reservations, particularly those related to methods used to enhance validity and credibility (quantitative) or trustworthiness and believability (qualitative).
Step 12—Discussion and Application	What interesting facts or ideas did you learn from reading the report? Include here anything that was of value in regard to results, research designs and methods, references, data-collection instruments, history, useful arguments, or personal inspiration. How can the information learned be applied to improve professional practice? Or, what were the implications of this study for a practitioner?

Source: Adapted from Locke, L, Silverman, S, and Spirduso, WW. *Reading and Understanding Research*. Thousand Oaks, Calif.: Sage, 2010.

each chapter, a specific activity will be provided that centers on how to find research articles as well as the 12 steps as you learn how to read research reports found in professional journals. We will also emphasize how research can inform professional practice and provide you with opportunities to apply research findings to your future profession.

Reading Research

Before you begin to read research reports, it is important for you to understand research terminology that will provide different perspectives from which you will analyze and critique reports in professional journals. First, it is important to distinguish between scientific and practitioner-based research. *Scientific research* is based on a systematic approach to gathering information that potentially answers an investigated question, whereas *practitioner-based research* focuses on how to apply the information learned within your instruction or area of practice.

Second, research reports are usually based on two paradigms (i.e., types) of research: quantitative and qualitative. *Quantitative research* is based on numbers, primarily the statistical analysis of numeric data that were gathered. Quantitative reports typically describe, correlate, predict, or explain a hypothesis that was posed at the beginning of a study. In contrast to quantitative research, *qualitative research* answers questions through words, images, and sounds. The purpose of this research is to learn more about the social context in which the participants live, which is conducted through the lens and interpretation of the researcher(s).[18] As you read quantitative and qualitative reports, Locke, Silverman, and Spirduso[19] suggest that you attempt to answer five basic questions:

1. What is the report about?
2. How does the study fit into what is already known?
3. How was the study done?
4. What was found?
5. What do the results mean?

Quality research that is scientific and practitioner-based within the quantitative and qualitative paradigms has the potential to provide the reader with new knowledge that can inform the practice of all professionals.

Staying Up to Date with Technology

In today's society, technology influences many aspects of our lives and will play an important role in your professional endeavors. Technology helps professionals stay abreast of new developments in the field, facilitates communication among professionals, and plays a role in professional activities such as teaching, assessment, and research.

Electronic databases such as ProQuest, Academic Search Premier, and SPORTDiscus provide ready access to professional journals. RSS, Really Simple Syndication, lets you subscribe and receive up-to-date information from online newspapers, some electronic journals, and government initiatives. Additionally, professionals can subscribe to updates from the US Department of Health and Human Services (http://www.hhs.gov, click on the icon to subscribe to updates) to get the most current information and decisions on issues such as obesity, morbidity, nutrition, physical activity, and hypokinetic diseases. Smartphone applications can deliver this information directly to your fingertips.

Through the World Wide Web and the Internet, communication with other professionals can occur rapidly. E-mail is one of the most common ways to communicate. Real-time communication between professionals can occur using LinkedIn, instant messaging programs, and other applications, such as FaceTime, Zoom and Skype, let professionals engage in phone and video chat. Live web conferencing programs, such as Adobe Connect, allow professionals to share presentations and multimedia from their desktops and receive feedback from other professionals. Although having such readily available information is convenient, you need to be critical consumers about the information that you get from the World Wide Web and the Internet. To help guide your critical analysis of web pages, see the Critiquing the Web box.

CRITIQUING THE WEB

These are tips for evaluating the quality of content on the web. In recent years, the web has become a rich environment of pages, blogs, wikis, social networking sites, free research services, media, and more. It can be a challenge to figure out which content to trust. This information will help you identify the type of site you are visiting and evaluate its content.

Here are a few general tips for evaluating content on the web. Check that the...

- author has expertise on the topic.
- source of the content is stated, whether original or borrowed, quoted, or imported from elsewhere, and that the content can be independently verified from other sources. This is especially important if you cannot check on the expertise of the author or if the author is not identified.
- level and depth of the information meets your needs.
- site is currently being maintained. Check for posting or editing dates.
- information is up to date.
- links are relevant and appropriate, and in working order.
- site includes contact information.
- top-level domain in the site address is relevant to the focus of the material, e.g., .edu for educational or research materials, .org for profit or nonprofit organizations, .gov for government sources. Note that the top-level domain is not necessarily a primary indicator of site content. For example, some authors post their content on blog or wiki platforms hosted by companies with .com addresses.

Source: Adapted from: http://library.albany.edu/usered/eval/evalweb.

Social media, such as Facebook, Twitter, Ning, and Tapped In (http://www.tappedin.org), lets professionals communicate with each other, form groups around common interests, and readily exchange ideas. Blogging (e.g., Tumblr), the posting of commentary, video, and photos (e.g., Instagram, Pinterest), gives professionals the opportunity to stay cognizant of current trends and issues as well as contribute to the discussion. Wikis, collaboratively built web pages, allow professionals to work together to develop new websites of professional interest. Social bookmarking sites, such as Digg, invite people to bookmark websites of interest, tag them with descriptors, and choose to share them with other people.

Sharing of ideas, best practices, and research is easy and convenient. Websites such as PE Central and PHE America invite professionals to voice their opinions, share lesson plans, and post best practices, while providing a multitude of resources. YouTube provides individuals all over the world with video clips that range from children engaged in daily activity to the latest fitness techniques. Consumers (i.e., you) need to analyze and critique the information to determine what is and is not accurate or appropriate practice.

Continuing your professional development is an important responsibility of professionals. Webinars and podcasts offer the opportunity to stay on top of professional development opportunities. Online courses and degrees allow you to continue your education without having to be physically present in a classroom or educational institution.

There are also many computer applications that help professionals work more efficiently and effectively. Word processing, spreadsheet, and statistical applications facilitate writing and data collection and analysis. Smartphone applications conveniently provide professionals with access to a myriad of programs that help them perform their work. Sample applications include exercise prescription, tracking of client or student performance, and physical activity information.

Current technology, as well as new and emerging technologies, means that it is easier for professionals to remain abreast of developments in the field. Communicating and collaborating with colleagues, sharing ideas and resources, and taking advantage of professional development opportunities are just some of the ways in which technology helps professionals fulfill their responsibilities.

CURRENT TRENDS: MOVING TOWARD THE FUTURE

- The disciplines within the field of kinesiology will continue to be interdisciplinary, yet also align with other areas within the medical, health, and business fields.
- Advanced degrees are increasingly required for many professions within the disciplines.
- The disciplines of exercise physiology, sport medicine/athletic training, and sport management are rapidly expanding.
- Physical activity levels, nationally and worldwide, will continue to decline if access and opportunity are not provided to all individuals.
- Physical activity and health initiatives and policy will begin to make a positive impact on people's longevity and quality of life.
- Empirical research will continue to provide us with valuable information that will allow us to make informed decisions about our health and wellness.

SUMMARY

Contemporary physical education, exercise science, and sport are rapidly changing within the broader field of kinesiology. Physical education is defined as an educational process that uses physical activity as a means to help individuals acquire skills, fitness, knowledge, and attitudes that contribute to their optimal development and well-being. Exercise science is the scientific analysis of exercise or, more inclusively, physical activity. Sport is a highly organized, competitive physical activity governed by rules where the outcome is largely determined by skill and strategy. Rules standardize the competition and conditions so that individuals can compete fairly.

Physical education, exercise science, and sport includes both disciplinary and professional dimensions. The discipline is the body of knowledge of the field. Scholars and researchers engage in activities designed to provide greater scientific understanding and insight. The professional dimension of the field focuses on providing services to people of all ages in many different settings. Professionals use the body of knowledge and specialized skills to meet the unique needs of people and help them improve their health and quality of life. The growth of knowledge in physical education led to that change in the "field" to kinesiology as well as to specialized areas of study, such as sport and physical activity psychology, sport sociology, physical education pedagogy, sport philosophy, sport biomechanics, exercise physiology, motor development, motor learning, adapted physical activity/physical education, sport history, and sport management. Each practitioner should be knowledgeable about these specialized areas of study as well as appreciate their interrelatedness and their contribution to the discipline as a whole.

The field of kinesiology, and specific to this text, the professions of physical education, exercise science, and sport is continuously changing. To grow as a professional, it is important to stay up to date with the latest research, both scientific and practitioner-based, and technological tools. Understanding research reports, learning about research findings, and utilizing the newest technology allow professionals the opportunity to provide best practices and instruction to students, clients, and athletes within physical education, exercise science, and sport programs.

DISCUSSION QUESTIONS

1. More and more individuals of all ages engage in physical activity, yet the number of overweight, obese, and unhealthy individuals continues to rise. Discuss how professionals in physical education, exercise science, and sport can continue to educate and find ways to engage people in physical activity in an attempt to combat the poor health issues that plague individuals of all ages.
2. In this text, we have named kinesiology as the "field" and refer to physical education, exercise science, and sport as professions within this field. In today's society, should kinesiology be considered the field? Is there a different name that should be considered for the field of human movement and physical activity? Or, should there be multiple fields? Explain your reasoning behind your decision. What factors can you use to support your stance?
3. Of the disciplines, which one most closely aligns with your desired profession? Why have you chosen to go into that profession?

GET CONNECTED

Newsletters, RSS feeds, and podcasts are just some of the ways to stay abreast of current news, research, and developments related to physical education, exercise science, and sport.

US Department of Health and Human Services–this site offers access to RSS feeds, podcasts, videos, and newsletters related to health. There are instructions on the site explaining how to watch, listen, or subscribe to a wide variety of information on health and physical activity.

https://www.hhs.gov/

American College of Sports Medicine–ACSM Fit Society electronic newsletter for the general public, focusing on popular health, sport, nutrition, and fitness topics.

https://www.acsm.org/ > Fit Society Page > sign up to subscribe.

PHE America Newsletter–sponsored by PHE America, this website offers a monthly newsletter and articles on a variety of topics, primarily related to the teaching of physical education and the promotion of active lifestyles. It also offers a directory of e-mailing lists and newsgroups for sport sciences, athletic training, wellness, and health.

http://www.pheamerica.org/

SELF-ASSESSMENT ACTIVITIES

These activities are designed to help you determine if you have mastered the materials and competencies presented in this chapter.

1. Without consulting your text, describe the disciplines of the field of kinesiology. Discuss how these areas are interrelated. Use examples to illustrate why it is important to be knowledgeable about the various specialized areas within the discipline.
2. Compare and contrast the definitions of exercise, physical activity, physical education, physical fitness, and sport. Describe how they are interrelated and whether one supersedes the others.
3. Refer to the 12 Steps to Understanding Research Reports box. Search for two scientific journals in which you can find research articles that focus on contemporary physical education, exercise science, and

sport or one of the disciplines. Within these journals, you must be able to identify at least one original research article. This means that the authors of the article conducted the research study and are not referencing or analyzing data found in other research articles.

4. The Get Connected box lists resources for physical education, exercise science, and sport. Subscribe to a newsletter. Discuss the benefits the Internet offers to professionals in the field. For the semester, keep copies of your resources and summarize what you have learned at the end of the semester.

REFERENCES

1. The International Health, Racquet & Sportsclub Association. (2018). *2018 IHRSA health club consumer report.* Retrieved from https://www.ihrsa.org/publications/the-2018-ihrsa-health-club-consumer-report/
2. Esticat Research. (2017). *U. S. fitness equipment market revenue will reach 4.4 billion by 2024.* Retrieved from https://www.esticastresearch.com/
3. Engage Sports. (2016). Youth sport statistics and trends [Blog post]. Retrieved from http://www.engagesports.com/blog/post/1488/youth-sports-participation-statistics-and-trends
4. National Federation of State High School Associations. (2017). *2016–2017 high school athletics participation survey.* Retrieved from http://www.nfhs.org
5. National Collegiate Athletic Association. (2016). *2015–2016 NCAA, 2016 member report.* Retrieved from http://www.ncaa.org
6. National Association of Intercollegiate Athletics. (2018). *About the NAIA.* Retrieved from http://www.naia.org
7. National Junior College Athletic Association. (2016). *Marketing.* Retrieved from http://www.njcaa.org/marketing.cfm
8. National Physical Activity Plan. (2016). Retrieved from http://www.physicalactivityplan.org/index.html
9. US Department of Health and Human Services. (2010). *Healthy people 2020: Improving the health of Americans*. Retrieved from http://www.healthypeople.gov
10. Office of Disease Prevention and Health Promotion. (2018). *2018 physical activity guidelines.* Retrieved from https://health.gov/paguidelines/
11. Centers for Disease Control and Prevention. (2016). *FastStats for exercise or physical activity.* Retrieved from http://www.cdc.gov/nchs/fastats/exercise.htm
12. Centers for Disease Control and Prevention. (2017). *Youth risk behavior survey.* Retrieved from http://www.cdc.gov/healthyschools/physicalactivity/facts.htm
13. SHAPE America. (2016). *Shape of the nation report for 2016.* Retrieved from https://www.shapeamerica.org//advocacy/son/2016/upload/Shape-of-the-Nation-2016_web.pdf
14. National Center for Educational Statistics. (2016). *Fast facts enrollment trends 2016.* Retrieved from http://nces.ed.gov
15. Corbin, C. B. (1993). The field of physical education—common goals, not common roles. *Journal of Physical Education, Recreation & Dance, 64*(1), 79, 84–87.
16. Henry, F. M. (1964). Physical education: an academic discipline. *Journal of Health, Physical Education, and Recreation, 37*(7), 32–33.
17. Charles, J. M. (1996). Scholarship reconceptualized: the connectedness of kinesiology. *Quest 48,* 152–164.
18. Rossman, G. B. & Rallis, S. F. (2011). *Learning in the field: An introduction to qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.
19. Locke, L. F., Silverman, S. J., & Spirduso, W. W. *Reading and understanding research* (3rd ed.). Thousand Oaks, CA: Sage.

Polka Dot Images/Getty Images

CHAPTER 2

Philosophy, Goals, and Objectives

OBJECTIVES

After reading this chapter, students should be able to—

- Discuss key concepts of philosophy and their application to the disciplines within physical education, exercise science, and sport.
- Begin to develop a professional philosophy.
- Describe potential goals and objectives that can be developed within physical education, exercise science, and sport.
- Describe the cognitive, affective/social, and psychomotor learning domains and apply these domains to the different disciplines.
- Describe the purposes and the importance of assessment in physical education, exercise science, and sport.

Professionals in physical education, exercise science, and sport face the challenge of preparing children, youth, and adults—with a wide range of abilities and a multitude of needs, and from increasingly diverse backgrounds—to engage in a physically active and healthy lifestyle. To provide instruction and practice that can enhance the number of individuals that are physical movers for a lifetime, it is important for you to develop a professional philosophy that reflects your experiences and beliefs within your discipline.

Your professional philosophy creates a framework (i.e., a way of thinking, a perspective) in which you formulate the goals and objectives of your program. As professionals, we must define the goals and objectives of our programs based on the context in which we work, whether in a corporate fitness center, cardiac rehabilitation program, or a community sports program. Clearly defined goals and objectives are essential if physical education, exercise science, and sport programs are designed to foster optimal human development, enhance health, and enrich the quality of life of individuals across the lifespan.

SOCIAL JUSTICE

Talking Points

- Our professional philosophy is influenced by our social identity and personal experiences. Professionals, regardless of their philosophy, will need to be inclusive and sensitive to the wide variety of identities and experiences of the people with whom they work.
- Professionals within the field of kinesiology need to develop goals and objectives specific to each student, player, or client to best meet their goals and needs, while taking into consideration their circumstances, access, and environment.
- Professionals should have the ability to meet all the diverse learning needs of their students, players, or clients to create optimal opportunities for them to succeed.

Within this chapter we will discuss the major philosophies; the philosophy of sport and physical activity; the goals and objectives of physical education, exercise science, and sport; the cognitive, affective/social, and psychomotor domains; and the implementation of assessment within instruction and practice.

PHILOSOPHY

For some people, the term *philosophy* conjures up visions of an individual sitting in the ivory towers of a university, pondering seemingly unanswerable questions. Or it may call up the image of an individual sitting atop a rock next to the bank of a stream, looking at the water rippling by and contemplating the meaning of life. What is your perspective about philosophy? How does philosophy play a factor in your personal life and professional life?

What Is Philosophy?

Philosophy, derived from the Greek word *philosophia*, means "the love of wisdom."[1] Philosophers pursue the truth through the systematic investigation of reality, knowledge, meanings, and values. Philosophy is a system of values by which one lives and works. Your system of beliefs and values guides your conduct in both your personal life and professional life. Philosophy helps individuals address the problems that confront them through the use of critical thinking, logical analysis, and reflective appraisal.

Questions that reflect the concerns of philosophers include the following:

- What is the role of human beings on this earth?
- What are the origin and nature of the universe?
- What constitutes good and evil, right and wrong?
- What constitutes truth?
- Is there a God?
- What relationship exists between mind and body or matter?

Are there additional questions you have philosophized about that are not listed? What were they? What brought you to philosophize about such topics? Throughout the remainder of the philosophy section, consider how these philosophies can relate to your personal life and future professional career.

Branches of Philosophy

Philosophy's branches of study are generally divided into four domains: metaphysics, epistemology, logic, and axiology. *Metaphysics* seeks to address the ultimate nature of reality, that is, what is real and exists. Speculative in its approach, metaphysics may be used to understand the relationship between mind and body or the essential meaning of sport.

What does it mean to be a "good sport"?
Brand X Pictures/PunchStock

Epistemology is the branch of philosophy concerned with examining the nature of knowledge. It uses critical, analytical methods to examine the structure of knowledge, its origin, and its limits. This approach can help us define the nature of the discipline (i.e., body of knowledge) of physical education, exercise science, and sport.

Logic focuses on the examination of ideas in an orderly and systematic way. Logic uses a critical approach to study how ideas relate to each other and applies sound and reasoned judgment to decision making. Logic can help members of our field design sound research approaches or organize facts to document the contribution of physical activity to well-being.

Axiology examines the nature of values. Two extensions of axiology are ethics and aesthetics. *Ethics* is concerned with issues of right and wrong, responsibility, and standards of conduct. Speculative in nature, ethics examines moral values. Moral reasoning helps people determine what the right thing to do is in a given situation or circumstance. The development of character, the nature of fair play, and issues of justice are just a few of the ethical concerns of physical education, exercise science, and sport. *Aesthetics* is the study of the nature of beauty and art. The beauty of skilled movement and artistic expression through dance enable us to see movement as an art form.

These branches represent different aspects of philosophy. In developing a comprehensive philosophy for a discipline, such as physical education, exercise science, or sport, each of these areas is addressed. The Branches of Philosophy box highlights the focus of each branch, provides a typical general question that may be posed, and shows how these questions may be framed within the context of physical education, exercise science, and sport.

Major Philosophies

The six major philosophies that have been typically described with respect to their impact on physical education, exercise science, or sport are idealism, realism, pragmatism, naturalism, existentialism, and humanism. Although space precludes an extensive discussion of each philosophy, a brief overview of the basic tenets of each is provided, with suggestions of how they can potentially influence professionals in their work.

Idealism

As a philosophy, *idealism* emphasizes the mind as central to understanding and the critical role that reasoning plays in arriving at the truth. Under this philosophy, values and ideals are held in high regard and are considered to be universal and absolute. Values and ideals do not change, regardless of circumstances.

Professionals who follow the tenets of idealism would emphasize the development of character, the importance of values, and the application of reasoning in their work. A youth sport coach who

BRANCHES OF PHILOSOPHY

Branch	Focus	General Questions	Physical Education, Exercise Science, and Sport Questions
Metaphysics	Nature of reality	What is the meaning of existence? What is real?	What experiences in a physical education program will better enable the individual to meet the challenges of the real world?
Epistemology	Nature of knowledge and methods of obtaining knowledge	What is true?	What is the validity of the knowledge pertaining to physical activity and its influence on the development of the individual?
Logic	Systematic and orderly reasoning	What is the method of reasoning that will lead to the truth?	What process should a researcher use to determine the value of physical education to program participants?
Axiology	Aims and values of society	How do we determine what has value, and on what criteria is this judgment based?	What is the value of physical education programs to the individual?
Ethics	Issues of conduct, right and wrong	What is the highest standard of behavior each person should strive to attain?	How can sport be utilized to develop ethics?
Aesthetics	Nature of beauty and art	What is beauty?	Why are skilled performers' movements beautiful to view?

espoused the philosophy of idealism would promote the development of character and the ideals of sportspersonship among the athletes on her team over winning. A fitness leader who believed in the philosophy of idealism would place a high value on serving as a role model to her clients. A cardiac rehabilitation specialist who followed the tenets of idealism would solicit from his cardiac patient, a former runner, the meaning running held for him, understand the patient's desire to return to running, and work with the patient to develop a realistic rehabilitation program to accomplish this goal.

Realism

The philosophy of *realism* emphasizes the use of the scientific method to arrive at the truth. Reasoning and understanding the natural laws of nature are features of this philosophy. The total development of the person is important, and physical activity has an important role in this endeavor.

An exercise physiologist who subscribed to the philosophy of realism would carefully evaluate the scientific evidence in order to better understand the contribution of different types of physical activity to health. Physical educators who believed in realism would incorporate frequent assessment procedures

Philosophy influences athletes' attitudes toward winning and helps them interpret the meaning of success.

Fuse/Getty Images

into their classes, so that their students would have a means to monitor their progress toward attainment of their goals. In accordance with this philosophical approach, coaches would select training techniques based on the scientific evidence of their effectiveness, and would use a systematic, progressive approach in designing practices.

Pragmatism

According to the philosophy of *pragmatism*, experiences—not ideals or realities—are the basis of truth. Because individuals experience different situations, reality differs from person to person. Thus, within this philosophical approach, whatever works in a given situation at a given time is seen as successful. Although pragmatists see truth as variable and rightness as individually determined, they emphasize social responsibility. Pragmatists emphasize problem solving, consideration of individuals' needs and interests, development of individuals' social skills, and cooperation.

A pragmatist conducting a community fitness program for older adults would design the program to meet their needs and interests. A college recreational sports director would be sure to include a variety of different activities in the program offerings, so that the students would be able to choose activities that were personally meaningful and enjoyable. A corporate worksite health promotion specialist who believed in the pragmatic approach may choose to incorporate Project Adventure problem-solving activities into a special program for middle managers; after the completion of the activities, she would ask them to share their perceptions of their experiences while she facilitated the discussion.

Naturalism

The belief that life is governed by the laws of nature is central to the philosophy of *naturalism*. Naturalism emphasizes the importance of considering each individual's level of growth and development

in learning, and designing experiences that are congruent to the individual's needs. Self-direction, individualized learning, and competition against oneself are important in this approach. Play and outdoor activities provide beneficial opportunities for exploration and problem solving as a means of personal growth and learning.

Physical educators who believe in the philosophy of naturalism would use developmentally appropriate physical activities with their students at all levels of instruction, and individualized learning would be emphasized. Fitness leaders who adhere to the tenets of naturalism would encourage their program's participants to take advantage of opportunities to engage in outdoor pursuits during their leisure time as a means of incorporating physical activity into their lifestyle.

Existentialism

According to the *existentialist* philosophy, reality is determined by individuals' experiences. An individual's experiences and choices create a uniquely personal worldview and affect their perception of reality. Existentialism emphasizes the freedom of individuals to think as they choose and to make choices, but stresses that they must accept the consequences of their actions. Creativity, individuality, self-responsibility, and self-awareness are important aspects of this philosophy; learning experiences should reflect these attributes.

Under the existentialist philosophy, a sport psychologist would encourage an athlete to carefully reflect upon his experiences in order to identify the thoughts that led to poor performances. The sport psychologist would offer the athlete a variety of options to deal with these issues, allowing the athlete to choose among the alternatives. A coach who advocated for an existentialist philosophy would emphasize the athlete's responsibility in adhering to the established code of conduct. The coach may allow some individuality in dress, but would emphasize the athlete's responsibility in adhering to training rules. A physical educator would allow students to select from a variety of activities within the program, promoting reflection and individual responsibility for learning.

Humanism

A *humanistic* philosophy emphasizes the development of the full potential of each individual. Personal growth, self-actualization, and the development of values are central tenets of this philosophy. Treating students as individuals, valuing the dignity of each person, enhancing self-esteem, fostering personal and social development, and promoting self-responsibility are hallmarks of this approach. Within the realm of physical education, exercise science, and sport, humanism encourages a greater emphasis on meeting individual needs, and recognizes that one type of program is not suited for all individuals. The feelings, needs, goals, capabilities, and limitations of individuals should be carefully considered in conducting programs. For example, in corporate fitness, programs are designed to meet the needs of individual clients, assumption of responsibility for one's own health and fitness is stressed, and a holistic approach to health is emphasized.

Collectively, the beliefs and tenets of the traditional philosophies of idealism, realism, pragmatism, naturalism, existentialism, and humanism have influenced physical education, exercise science, and sport programs.

Modern Educational Philosophy

Today's educational philosophy reflects several influences. Most schools today follow an educational philosophy based on many of the beliefs advocated by John Dewey. John Dewey is recognized as the leader of the progressive education movement, and his ideas were influential in shaping American education.

Dewey's ideas of *progressive education* reflect a pragmatic orientation. Progressives believed that education was the avenue to improving the social conditions of society. Dewey's approach of "learning by doing" significantly changed the nature of American education. This child-centered approach to learning emphasized children taking an active role in their learning, as opposed to being passive recipients of knowledge conveyed to them by the teacher.[2]

CENTRAL BELIEFS UNDERLYING TRADITIONAL PHILOSOPHIES

Idealism	The mind interprets events and creates reality; truth and values are absolute and universally shared.
Realism	The physical world is the real world and it is governed by nature; science reveals the truth.
Pragmatism	Reality is determined by an individual's life experiences; the individual learns the truth through experiences.
Naturalism	Reality and life are governed by the laws of nature; the individual is more important than society.
Existentialism	Reality is based on human existence; individual experiences determine what is true.
Humanism	Reality and life consider humans to be of primary importance; personal growth, self-actualization, and the development of values are emphasized.

Dewey also believed in the unity of the mind and the body. Educational activities were viewed as contributing to the development of the total person, not just the mind. The tenets of progressive education lent support to the inclusion of physical education in the school curriculum. Physical activity developed the physical goals of education, as well as contributing to its intellectual and social goals. This philosophy of education through the physical was to become one of the most important influences on twentieth-century physical education.[2]

The Mind-Body Relationship

What is the relationship between the mind and the body? Are they separate, independent entities? Or are the mind and body a unified, interdependent, dynamic organism? Philosophers have long debated these questions, resulting in varying answers and perspectives.

The belief that the mind and the body are separate entities is termed *dualism*. Dualism views the mind and the body as independent, with either the mind or the body being superior. Usually, dualists emphasize the superiority of the mind over the body, relegating the body to an inferior role. The reduction or elimination of school physical education programs in order to increase time for more "academic" pursuits reflects the emphasis on development of the mind at the expense of development of the body. There are other times in physical education, exercise science, and sport programs when the emphasis is placed solely on the development of the body. When the development of the body is

Some sports, such as the martial arts, emphasize the development of the mind and spirit as well as the body.
Dave and Les Jacobs/Blend Images LLC

emphasized under this philosophical approach, this is referred to as *education of the physical*. Because the mind and the body are separate entities, educating or developing the body has no effect on the mind.

In contrast to the dualist approach, *monism* views the mind and the body as a fused, unified entity. Because the mind and the body are viewed as a unified whole, neither one can be subservient to the other; physical activity is as important as intellectual activity. From this philosophic perspective, physical education is as important as the rest of the courses in the educational curriculum. When physical education, exercise science, and sport adopt this philosophical approach, physical activity is seen as a medium for the development of the total person. This approach of *education through the physical* is the most dominant force in contemporary physical education.

The monist, holistic approach is central to our mission of promoting lifespan participation in physical activity. Achievement of lifespan participation requires that professionals embrace the developmental approach to physical activity—that is, design physical activity programs to promote fitness and motor skills and to instill in participants an appreciation for the contribution of physical activity to one's total well-being.

Philosophy of Sport and Physical Activity

Sport philosophy emerged as a specialized area of study in the mid-1960s and 1970s. The definition, scope, and areas of study are discussed in this section.

Definition and Scope

Sport philosophy is the systematic and reflective study of the truth, meanings, and actions of sport. Sport philosophers use logic and reasoning to gain a broader understanding of how sport contributes to our lives, and to analyze the principles that guide our professional practices and actions. Sport philosophers study the values connected with sport, examine the relationship between the mind and body, and debate ethical dilemmas. They call upon us as professionals to critically reflect upon our beliefs and assumptions about sport and challenge us to use our insight and knowledge for the well-being of others.

Areas of Study

As sport philosophy became more organized and sophisticated, philosophers undertook the investigation of a wider array of topics. Some of the questions sport philosophers may investigate include:

- What are the ethical implications of genetic engineering and its potential use in elite sport?
- How does culture influence the meaning derived from participating in sport?
- Why do some athletes risk permanent disability by continuing to participate in sport when injured?
- Why do adults persist in emphasizing winning in sport when children want to emphasize the fun elements associated with play?
- What is the relationship among play, work, and sport?
- How does athletic ability influence the meaning of sport for the participant? Are the values derived from participation in sport different for athletes of different abilities?
- How can opportunities to participate in physical activity be made more just and equitable?

The philosophies of physical activity and sport help us understand the meaning of movement and involvement to participants. This knowledge can help professionals make decisions and develop guidelines that will lead to a more positive experience for those involved. Sport philosophy offers us a systematic, reasoned approach to examining our beliefs, exploring the connections and relationships between our personal values, critically reflecting on societal values, and aligning our actions according to the goals and aims to be achieved.

Your Professional Philosophy

A professional philosophy is important for all physical educators, exercise scientists, and sport leaders. A professional philosophy will help you

articulate the worth and value of the discipline and will influence the design and leadership of your programs. Your philosophy will be reflected in your actions as a professional, the manner in which you handle the responsibility of being a role model, and your behaviors toward and interactions with the people you serve. It is important to understand that your professional philosophy may emphasize the philosophies discussed in this chapter as well as the many others that this chapter did not address. However, your professional philosophy will primarily emphasize your beliefs and values within your chosen profession, which may align or be supported by a professional organization's vision or mission statement.

Your professional philosophy can serve as a guide in making ethical decisions as you confront many issues and problems within the field. When confronted with ethical decisions, you can use your professional philosophy to reflect on how you ought to act, what is right and wrong in the given situation, and what is just and unjust.

A professional philosophy will be helpful in addressing both societal and professional questions that may affect the conduct of your program, your actions as a professional, and the outcomes experienced by the people you are serving. Some general questions that a philosophy might help you address are:

- What has value in today's society?
- What is relevant to the needs of people today?
- What are some inequities in opportunity that must be addressed? And what is my commitment to social justice?

As a professional, you will be confronted with many questions that must be addressed. Some examples are:

- Should youth sport programs mandate equal playing time for all participants?
- Should intercollegiate athletes be required to maintain a certain grade point average to participate?
- Should employees be required to participate in a corporate fitness program in order to receive health benefits?
- Should certification be required of all health-and-fitness club employees? If so, what certification should be required?
- Does an athletic director have a right to mandate that no athletes have social media accounts?

A well-developed professional philosophy gives you some guidance in resolving these and a multitude of other questions and issues you will face.

Developing your professional philosophy will be one of your major tasks as you continue your professional preparation. One of the most commonly asked questions of job candidates by employers is, "What is your professional philosophy?" Your professional philosophy will likely change as you learn more about the field, acquire more professional experience, and mature as an individual. As you begin to develop your professional philosophy, it may be helpful to think about your personal philosophy and use those beliefs and values as a starting point. The guidelines presented in the Developing Your Professional Philosophy box will help you determine, define, and articulate your philosophy of physical education, exercise science, and sport. Collectively, professional philosophies and program goals and objectives within physical education, exercise science, and sport will be discussed.

Goals and Objectives Defined

Before we discuss the goals and objectives of physical education, exercise science, and sport, we will first define these terms. *Goals* are statements of purposes, intents, and aims that reflect desired accomplishments. Goals are expressed as general statements and are very broad in their direction. They state long-term outcomes to be achieved by participants in the program.

Objectives are derived from goals. Objectives describe learning, specifically what individuals should know, do, or feel as a result of instruction. Objectives are more specific than goals. They are short-term statements of specific outcomes that build cumulatively to reach a goal. Objectives can be stated in many different ways and vary in their degree of specificity. They can be stated with

DEVELOPING YOUR PROFESSIONAL PHILOSOPHY

Steps	Questions to Consider
1. Review your past experiences in physical education, exercise science, and sport.	What were some of your most outstanding experiences in this field? What were some of your most disheartening ones? Why? Is there a professional you particularly admire, one who served as a role model for you or even prompted your entry into this field? If so, what was his or her philosophy?
2. Read about the different philosophies.	What theories are compatible with your beliefs? What theories are at odds with them? How do these theories translate into practice? What are the characteristics of programs conducted from these philosophical perspectives?
3. Review the philosophies of leaders in physical education, exercise science, and sport.	After reviewing the philosophies of leaders in the field, which of their beliefs are compatible with yours and which are incompatible?
4. Take advantage of opportunities you have during your professional preparation to talk to various professors about their philosophies.	What beliefs are evident in their teaching? As you critically examine your experiences during your professional preparation, do you ask yourself why things are the way they are? How could things change? How would these changes influence the philosophy of the program? Would these changes align with your professors' beliefs and philosophies?
5. Review the codes of conduct and ethical standards of various professional organizations.	Many physical education, exercise science, and sport professional organizations have standards of conduct that serve as guidelines for their members. What are the standards of conduct expected of professionals entering your prospective field? What are the expectations for service to the profession and to others?
6. Express your philosophy.	What are your current perspectives and beliefs about your prospective field? If you have previously written a professional philosophy, how has your philosophy changed or evolved? What factors influenced these changes?

reference to general behavior or with reference to specific outcomes. For example, one goal of *Healthy People 2020* is to increase life expectancy and for individuals to be free of preventable disease, disability, injury, and premature death.[3] A general objective that will contribute to this goal is increasing the number of people who engage in exercise to achieve cardiorespiratory fitness. A more specific objective related to physical activity is increasing from 15% to 30% the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.

Well-constructed objectives can take on many different forms and can be stated in many different ways. Most importantly, whatever the format, objectives should describe the behavior the individual will demonstrate when the desired outcome is achieved. When objectives are stated in terms that are measurable, they provide a means to assess the individual's progress toward the achievement of the goal.

Each individual's level of development should be considered in planning activities.
Deborah Wuest

Objectives may be developed for different areas of learning, that is, intellectual development, physical development, or social-emotional development. Objectives guide the development of assessment procedures and instructional experiences. They help professionals focus their efforts on the subject content that is most important for participants to learn.

GOALS OF PHYSICAL EDUCATION, EXERCISE SCIENCE, AND SPORT

Physical education, exercise science, and sport leaders' primary goal is the improvement of the well-being and quality of life of individuals who participate in our programs. We can accomplish this by socializing individuals into the role of participants who will make a long-term commitment to participation in enjoyable and meaningful physical activity and sport experiences. Our main purpose is to provide people with the skills, knowledge, and attitudes to participate in regular physical activity throughout their lifespan.

Contemporary physical education, exercise science, and sport programs are growing in popularity. These programs are diverse in content and varied in setting, and they serve people of all ages. What are the goals and objectives of these contemporary programs? What outcomes should participants in these programs achieve? These questions can be addressed by researching the professional organization of your discipline, such at the National Athletic Trainer's Association (www.nata.org), the North American Society for Sport Management (www.nassm.com), the American College of Sports Medicine (www.acsm.org), or the Society of Health and Physical Educators (www.shapeamerica.org) to name a few. Having an understanding of the professional goals of your discipline will help guide you in how to develop goals and learning objectives for your students, players, or clients.

LEARNING DOMAINS

Objectives for learning can be classified into multiple domains: cognitive (thinking), affective/social (feeling/interaction), and psychomotor (doing). The cognitive domain is concerned with the acquisition of knowledge and its application. The

affective/social domain includes the promotion of values, the fostering of social skills, and the enhancement of emotional development. The psychomotor domain involves the development of motor skills and physical fitness.

It is critical that professionals consider all domains when planning learning experiences to meet individuals' needs. Separation of behaviors into domains simplifies the formulation of objectives. It enables us to more readily take into account individuals' levels of development in each domain as we design and conduct activities. However, these domains are interrelated and, as professionals, we must keep this at the forefront of our minds as we work with people in our programs.

Physical education can help children understand the human body. This 8-year-old is pointing to the lungs, which she says "help you live and get air to run hard."
Courtesy of Sarah Rich

Education is a process of learning that can take place in many different settings. In programs conducted outside the school setting, physical education, exercise science, and sport contribute to the cognitive, affective, and psychomotor development of program participants. These programs involve people of all ages, in a diversity of settings, and with many different goals. As we continue to expand our programs, we must actively seek to extend the opportunity for participation to all people, regardless of gender, race, ethnic and cultural background, and socioeconomic status.

Taxonomies

Taxonomies serve as a guide for professionals in planning for learning outcomes and achievement of the desired goals. A taxonomy organizes objectives in a progressive hierarchy, from low to high, using developmental theories as a basis for formulating those objectives. Behaviors at one level serve as the foundation and prerequisite for behaviors at a higher level. Stated more simply, lower-order objectives serve as stepping stones to the attainment of higher levels of achievement.

Taxonomies have been developed for each domain. Although these taxonomies are often described with reference to education and the school setting, they offer guidelines for professionals in all fields who work with people to enhance learning and promote human development.

Cognitive Domain

The cognitive domain is concerned with the acquisition of knowledge and the development of intellectual skills. Bloom and his colleagues originally developed a taxonomy of educational objectives for this domain in the 1950s, which was not revised until 2001 by Anderson and Krathwohl.[4] These objectives reflect an increase in complexity at each level of development. Remembering facts is the initial objective, and from this grows understanding and application of concepts, critical analysis, evaluation, and creating. (The Cognitive Domain box presents the objectives for this domain.)

THE COGNITIVE DOMAIN

Category	Description	Application
1. Remembering	Ability to recall; retrieving relevant knowledge from long-term memory; represents lowest level of learning outcomes in cognitive domain.	**Physical Education –**What are the critical elements of the overhead clear in badminton? **Exercise Science–**What are the health-related components of fitness? **Sports Programs–**What are the primary rules of basketball?
2. Understanding	Constructing meaning of instructional materials (oral, written, graphic); understanding without perceiving implications; interpret; translate; estimate; predict; represents lower level of cognitive domain.	**Physical Education–**Compare the critical elements of the overhead clear in badminton to the softball/baseball throw. **Exercise Science–**Compare the health and motor components of fitness. **Sports Programs–**How are the primary rules of basketball similar to soccer?
3. Applying	Ability to use learned information in new situations; can apply rules, methods, and concepts; can carry out or use a procedure in a given situation; higher level of understanding.	**Physical Education–**When is the best time to use the overhead clear in badminton? Why? **Exercise Science–**What exercises would you prescribe to a 40-year-old woman who is just starting to exercise? **Sports Programs–**On offense, the point guard has picked up her dribble and you are being defended by an opponent. What movement(s) could you do to create opportunities to get open?
4. Analyzing	To break down material into its component parts; organization and relationships between parts made clear; identifying; selecting; inferring; higher intellectual level.	**Physical Education–**In a game of badminton, your opponent consistently wins the point by landing the shuttle at the front of the court. Describe how you will adjust your game play to improve your opportunities to score. **Exercise Science–**Select cardiovascular exercises for a 55-year-old man who just had a minor heart attack. **Sports Programs–**In a basketball game, your opponent is scoring most of their points inside the key. Describe how you would change your defense to prevent your opponent from scoring.

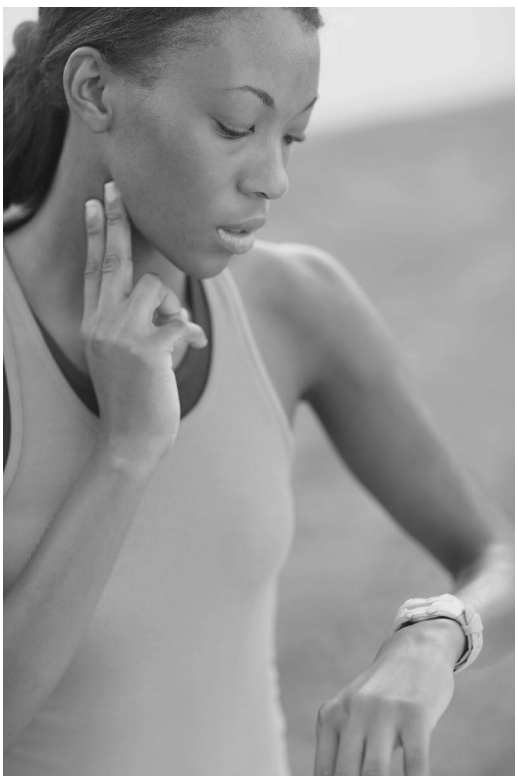
(Continued)

THE COGNITIVE DOMAIN (*Continued*)

Category	Description	Application
5. Evaluating	Make judgments based on criteria and standards; second highest learning outcome because it contains elements of all other categories.	**Physical Education–**In a singles game of badminton, you lose by a score of 15–6. Reflect upon your game play and explain what tactics and strategies your opponent utilized to win the game and describe what skills, tactics, and strategies you need to work on to improve your game performance. **Exercise Science–**How will you adjust your client's workout based on the following information from a pre- and post-assessment: increase in 1 rep max on the bench press by 20 pounds, flexibility did not improve, and resting heart rate lowered 2 beats/minute. **Sports Programs–**Throughout the season thus far, your team is averaging 20 turnovers/game. Create drills your team can practice that have the potential to decrease the number of turnovers per game.
6. Creating	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure.	**Physical Education–**In a singles badminton tournament, you will face the same opponent that you lost to in last year's tournament. Design a game plan as to how you will approach all aspects of the match. For example, if your opponent has a powerful first serve, how will you position yourself to return the ball or if your opponent approaches the net after the second return, where will you place your shot on the court? **Exercise Science–**Your client (from above) approaches you and wants to change his goals. He decides that he wants to train for a Tough Mudder and would like you to create a program to prepare for this event, which is four months away. **Sports Programs–**Your team is going to face a new opponent for the first time. You and your team study film of their previous games. Create a game plan as to how you are going to stop their high-tempo, fast-break offense.

Development of knowledge and understanding is an important objective for physical education, exercise science, and sport programs in all settings. Our programs are concerned with educating individuals about the many dimensions of human movement, including the knowledge within our discipline.

Professionals in all settings need to place more emphasis on the scientific principles and concepts underlying the performance of various activities. Physical activities are not performed in a vacuum. As such, instructors should continually provide appropriate knowledge and information for participants and encourage them to question what they are doing. "Why should I exercise regularly? How will this exercise contribute to the rehabilitation of my knee? Why is warming up before exercising important? How can I get more distance for my golf drive? What can I do to throw the ball farther? Why is it important to play by the rules?" Participants should be provided with more opportunities to think, to apply problem-solving skills to physical activity situations, and to experience situations that allow for creativity and individual expression.



Knowing how to monitor your heart rate, calculate your training zone, and modify your fitness program to meet your individual needs are cognitive outcomes that can be achieved in programs.

Fancy Collection/SuperStock

Professionals can also use fitness activities to stimulate cognitive development. Students can self-analyze their fitness levels, identify areas of improvement, apply their knowledge to design an individualized exercise program, and evaluate their progress regularly, adjusting their program as needed. These cognitive skills of analysis, identification, application, evaluation, and creating contribute to the goal of preparing individuals to be lifelong learners. These activities also give these individuals the skills to modify their fitness programs during their adult lives as their needs change, a critical feature of lifespan involvement.

Affective/Social Domain

Many factors influence individuals' learning, including their feelings about themselves, the learning experience, and the subject. Recognizing this, Krathwohl and his associates developed the taxonomy for the affective domain.[5] This taxonomy reflects the development of values, appreciations, attitudes, and character. As individuals progress through the levels within this domain, they move from a concern about themselves to a value structure that embraces concern for others. At the highest level, their internalized values directly influence their choices and actions. Affective development also encompasses social and emotional development. (The objectives are shown in the Affective/Social Domain box.)

All people have certain basic social needs. These include feelings of belonging, recognition, self-respect, and love. Fulfillment of these needs contributes to social development. Physical education, exercise science, and sport programs can help participants meet some of these social needs. For example, elderly participants who join an exercise