

***STRENGTH & CONDITIONING:
THE SINGLE GREATEST INVESTMENT
IN YOUR ATHLETIC PROGRAM***

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TODAY'S OVERVIEW

- » Connect to YOUR vision for your program.
- » Demonstrate the need for a certified professional.
- » Provide you with resources.

RESUME'

- » Assistant Clinical Professor – Kinesiology – Towson University
- » High School AD for 17 years
- » Supervisor of K-12 HPE for 13 years
- » Strength & Conditioning Coach for 24 years

Questions

- » What is your vision for your program?
- » What is your greatest challenge as a HS AD?
- » Who is overseeing the S&C for your athletes currently?

Who Oversees S&C in Your School?

» Judge et al., 2024

- 245 surveys completed
- 9.4% were CSCS
- 27.8% lacked any certification
- 62.9% no dedicated S&C Coach



GREATEST CHALLENGE OF HS AD'S?

- » Keeping coaches?
- » Motivating student-athletes?
- » Communicating with parents?
- » Adapting to the revolving door of administration?

MY GREATEST CHALLENGES

- » Maximizing athlete participation
- » Ensuring all athletes experience growth & success
 - My why -> Reinforced Ideals learned through sport participation are applied through lifetime.

S&C - INVESTMENT IN STUDENTS & SCHOOL

- » Improve Athlete & Team Performance
- » Create Culture
- » Proactively Address Factors that Cause Injury
- » Limit Liability
- » [NSCA High School One-sheet](#)

DETERMINANTS OF ATHLETE PERFORMANCE

- » Sport Skill
- » Sport IQ
- » Genetics
- » **Physical Characteristics – S&C!**
 - **Agility, coordination, speed, strength, power**
- » **Psychological Characteristics – S&C!**
 - **Goal setting & attainment, leadership, cohesion, grit, accountability**
- » **Structural Support – S&C!**
 - **Periodization, Long-term athletic development, multi-sport athletes, A PLAN**

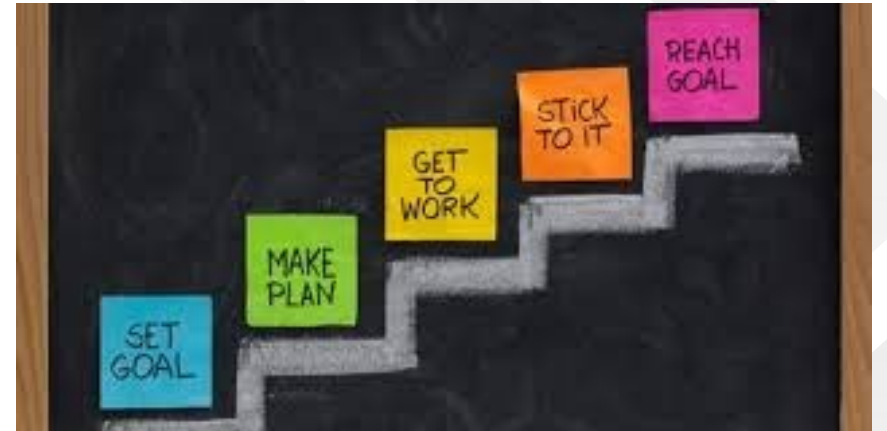
S&C – OPTIMIZE PERFORMANCE

- » Create year-round programming that aligns with demands of activity
 - Supports athletes to participate in multiple sports & not overtrain
 - Identify research-based windows to optimize adaptation
 - Movement & athleticism
 - Muscular strength & power
 - Conditioning
- » Periodization
 - Optimize - Peak performance for all athletes & teams
 - Minimally Accomplish –
 - Eliminate overtraining & junk volume
 - Eliminate dangerous training programs
 - Reduce Injuries



S&C – IMPROVE PSYCHOLOGICAL PERFORMANCE

- » Psychological Characteristics
 - Goal setting & goal attainment
 - Athlete leader behaviors
 - Team Cohesion – Task & Social
 - Social Support
 - Self-esteem



S&C – OPTIMIZE SPORT COACH EFFECTIVENESS

» Structural Support

- Support sport coach understanding & application of science-based training methodologies
 - What does your coach's' 52-week program look like?
- Year-round programming for multisport athletes
 - Synergy & Load Management
 - LTAD
- Culture – Goal setting, celebration & enthusiasm

SYSTEMIC IMPACT

- » ***ATHLETES->TEAMS->PROGRAM->SCHOOL->COMMUNITY***
- » Culture - constant improvement within all teams.
 - Can systematically affect cultures of school and community sport programs
 - Easy wins - goal setting & goal attainment
- » **Maximize student-athlete outcomes aligning with your vision!**

S&C – LIMIT LIABILITY & RISK

- » Create a synergistic relationship with AT
 - Prevention, Treatment, Recovery, Return to Play
- » Standard of Care
 - Is your program following research-based best practice?
 - CSCS - Professionally recognized certification
 - Demonstrates due diligence
 - Illustrates program understands S&C should be ***differentiated*** for athletes by a qualified professional.
 - Gender equity
 - Access and differentiation

QUALIFICATIONS THAT DON'T MEET STANDARD OF CARE

- » Former HS or college athlete that trained for one sport.
- » A former or current powerlifter or bodybuilder
- » Certificate holder from organization that does not require a bachelor's degree.
- » A sport coach that claims to have experience working out.
- » A fitness influencer.

GETTING STARTED – S&C COACH REQUIREMENTS

» Required

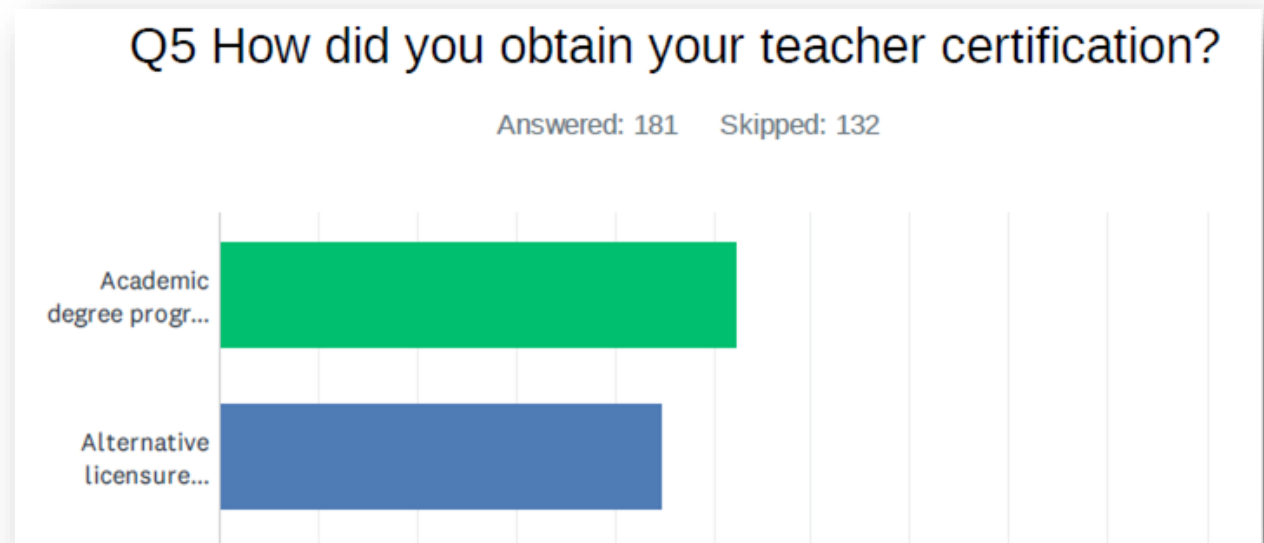
- Bachelor's Degree in Exercise Science or related field
- NSCA CSCS
 - All CSCS must pass exam demonstrating knowledge in:
 - A&P, Biomechanics, Applied S&C Principles
 - Analysis of Demands of Activity
 - Gold standard, similar to NATA for AT's
 - HPE Teacher could be working to CSCS

GETTING STARTED – POSITION FRAMEWORKS

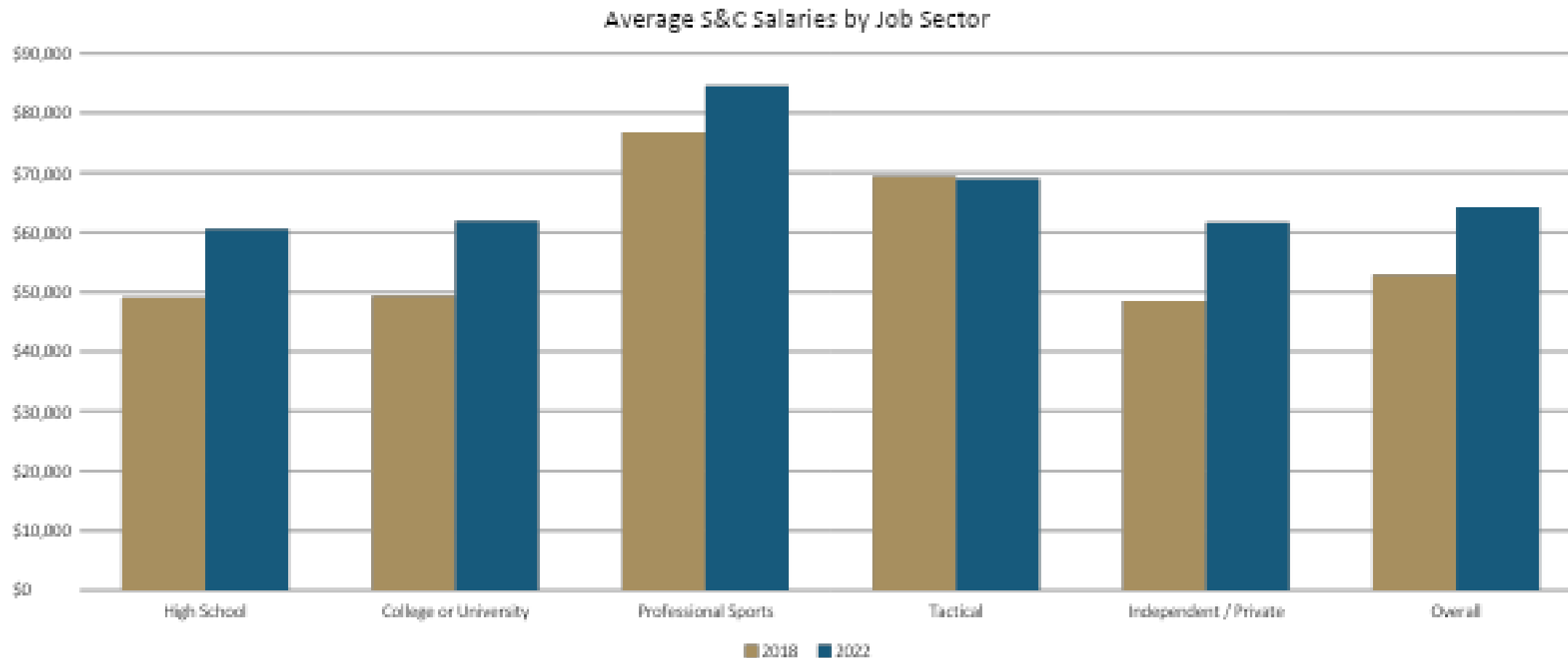
- » Physical Education Teacher
 - Existing or new hire
 - Embed into HPE Curriculum
- » Full Time S&C Coach
 - Similar to ATC framework
 - Likely work outside of school day
 - Attract best (non-teacher) candidates
 - **Work to alternative licensure**
- » Part Time S&C Coach
 - Could frame as coach stipend in CBA
 - May be difficult to retain
- » Contracted S&C Coach
 - Work through outside business

PATHWAYS TO TEACHER LICENSURE

- » Approximately **60%** of coaches were licensed as certified teachers in their state. Also, **45%** of those with teacher licenses reported earning licensure through an “Alternative Licensure Program”.
- » Teacher licensure is significant because high school strength and conditioning coaches with teacher licensure can earn up to **70%** higher salaries per year. (2018 NSCA Salary Survey)
- » **>50%** of high school strength and conditioning coaches held non-teaching degrees in kinesiology, exercise science, or strength and conditioning, further supporting alternative teacher licensure pathways for working in scholastic environments.



22% OVERALL GROWTH... 23% IN HIGH SCHOOL



NEEDS ANALYSIS - LET'S DISCUSS

- » Who is currently leading S&C at your school?
- » What teams can access S&C regularly?
- » What are qualifications of the S&C Coach?
- » What district stakeholders will support growth of S&C program?
 - Athletics, Administration, School Board, Booster Clubs, Parents

HIGH SCHOOL COACHING RESOURCES

- » HS Advocacy Packets
- » S&C Position Proposal
- » Job Description Template
- » gmcchalicher@towson.edu



A collage of promotional materials from the National Strength and Conditioning Association (NSCA). The top left features a photo of a coach assisting a student with a bench press, with the text "WHAT'S MISSING? Why You Need a Qualified Strength & Conditioning Coach". Below this is a graphic titled "STRENGTH MATTERS AT YOUR HIGH SCHOOL" which lists evidence-based benefits for students, such as developing movement skills, building resilience, and increasing motivation. The right side of the collage is dominated by the cover of "NSCA's Guide to HIGH SCHOOL STRENGTH and CONDITIONING", a resource for professionals, coaches, and teachers, edited by Patrick McHenry and Michael J. Nitka. The NSCA logo is visible in the bottom right corner of the collage.

WHY YOUR HIGH SCHOOL NEEDS A QUALIFIED STRENGTH AND CONDITIONING PROFESSIONAL

Benefits to the Students

1. **Reduce injuries:** A qualified strength and conditioning professional can play a pivotal role in preparing young athletes for sport and thereby minimize or offset the incidence and severity of sport-related injuries common to young athletes. (1) (2) (3) (4) (5)
2. **Improve long-term athletic development:** A qualified strength and conditioning professional understands the many variables that go into designing training-age-appropriate programs, and can produce more positive results. (6) (5) (7) (8)
3. **Improve performance:** Athletes who participate in a well-designed strength and conditioning program typically will be faster, stronger, more powerful, move more efficiently, and be more athletic than they would be without it. (1) (9) (10) (11) (12)
4. **Improve confidence:** Athletes who invest time in strength and conditioning tend to develop confidence through changes in their body composition and increased physical literacy, as well as the knowledge that the development that occurs as a result of their training can give them an advantage in competition. (13) (14) (15)
5. **Improve health:** In addition to increasing muscular strength, power, and muscular endurance, regular participation in a youth resistance training program has the potential to influence many other health- and fitness-related measures, and can play an important role in alleviating many health-related conditions. (1) (16) (12) (17)

Benefits to the School

1. **Limit liability:** A qualified strength and conditioning professional can help limit your school's liability and implement procedures that support risk-management. (16) (21) (2) (18) (4)
2. **Increase professionalism and safety:** For the same reason schools require a certified athletic trainer to work with their injured athletes or a certified lifeguard on pool decks, the same should be true for the coach who is designing and supervising the strength and conditioning program. (18) (19) (20)
3. **Extra coach on staff for all sports:** A strength coach allows the sport coach more time to focus on the day-to-day practice schedule while the strength coach oversees the strength and conditioning of the team. (16)
4. **Due diligence:** Demonstrates due diligence in properly equipping athletes for the physical and mental demands of a particular sport and establishes a greater commitment to injury prevention. (22)
5. **Gender equity:** Assists an athletic department with implementing strength and conditioning programs that are gender specific. (22)

What is a Qualified Strength and Conditioning Professional at the Secondary School Level?

1. **Certification:** A qualified strength and conditioning professional should achieve and maintain a professional certification credentialed by an independent accreditation agency—for example, the NSCA Certified Strength and Conditioning Specialist (CSCS) certification—as well as standard first aid, cardiopulmonary resuscitation (CPR), and automated external defibrillation (AED). (18) (19) (21)
2. **Education:** A qualified strength and conditioning professional should acquire expertise, and have a degree from a regionally accredited college/ university in one or more of the “scientific foundations” for strength and conditioning (i.e. exercise/anatomy, biomechanics, pediatric exercise physiology, nutrition), or in a relevant subject (e.g., exercise/sport pedagogy, psychology, motor learning, training methodology, kinesiology). (16) (7) (22) (23) (24)

ABOUT THE NSCA

The National Strength and Conditioning Association (NSCA) is an international nonprofit professional association dedicated to advancing the strength and conditioning profession around the world.

The NSCA advances the profession by supporting strength and conditioning professionals devoted to helping others discover and maximize their strengths. The organization disseminates research-based knowledge and its practical application by offering industry-leading certifications, research journals, career development services, and continuing education opportunities. The NSCA community is composed of more than 45,000 members and certified professionals who further industry standards as researchers, educators, strength coaches, personal trainers, and other roles in related fields.

References

1. Lloyd, Rhodri S. and Faigenbaum, Avery D. Age- and Sex-Related Differences and Their Implications for Resistance Exercise. [book auth.] G. Gregory Haff and N. Travis Triplett. *Essentials of Strength Training and Conditioning, Fourth Edition*. Champaign, IL : Human Kinetics, 2016, pp. 135-153.
2. Strength training recommendations for the youth athlete. Vaughn, JM and Micheli, L. 2008, *Physical Medicine and Rehabilitation Clinics of North America*, Vol. 19, pp. 235-245.
3. The prevention of sport injuries of children and adolescents. Smith, A, Andrish, J and Micheli, L. 1993, *Medicine and Science in Sports and Exercise*, Vol. 25, pp. 1-7.
4. Sex differences in "weightlifting" injuries presenting to United States emergency rooms. Quatman, CE, Gregory, DM, Khoury, J, Wall, EJ and Hewett, TE. 7, 2009, *Journal of Strength and Conditioning Research*, Vol. 23, pp. 2061-2067.
5. Strength and Conditioning Practices of United States High School Strength and Conditioning Coaches. Duehring, MJ, Feldmann, CR and Ebben, WP. 8, 2009, *Journal of Strength and Conditioning Research*, Vol. 23, pp. 2188-2203.
6. How prepared are college freshmen athletes for the rigors of college strength and conditioning? A survey of college strength and conditioning coaches. Wade, S, Pope, Z and Simonson, S. 10, 2014, *Journal of Strength and Conditioning Research*, Vol. 28, pp. 2746-2753.
7. National Strength and Conditioning Association Position Statement on Long-Term Athletic Development. Lloyd, RS, Cronin, JB, Faigenbaum, AD, Haff, GG, Howard, R, Kraemer, WJ, Micheli, LJ, Myer, GD and Oliver, JL. 6, 2016, *Journal of Strength and Conditioning Research*, Vol. 30, pp. 1491-1509.
8. Australia Strength and Conditioning Association. *Resistance Training for Children and Youth: A Position Stand from the Australian Strength and Conditioning Association (ASCA)*. 2007.
9. Mannie, K and Vorkapich, M. Accent on female strength training. *Coach and Athletic Director*. 2007, 3, pp. 8-10.
10. Zatsiorsky, VM and Kraemer, WJ. Strength training for young athletes. [ed.] VM, and Kraemer, WJ Zatsiorsky. *Science and Practice of Strength Training (2nd ed.)*. Champaign, IL : Human Kinetics, 2006, pp. 191-213.
11. Strength training for children and adolescents. Faigenbaum, A. 2000, *Clinical Journal of Sports Medicine*, Vol. 19, pp. 593-619.
12. Promoting strength and balance in adolescents during physical education: Effects of a short-term resistance training. Granacher, U, Muehlbauer, T, Doerflinger, B, Strohmeier, R and Gollhofer, A. 4, 2011, *Journal of Strength and Conditioning Research*, Vol. 25, pp. 940-949.
13. Relations of strength training to body image among a sample of female university students. Ahmed, C, Hilton, W, and Pituch, K. 2002, *Journal of Strength and Conditioning Research*, Vol. 16, pp. 645-648.
14. Effects of a circuit weight training program on the body images of college students. Williams, PA and Cash, TF. 2001, *International Journal of Eating Disorders*, Vol. 30, pp. 75-82.
15. Psychological strategies included by strength and conditioning coaches in applied strength and conditioning. Radcliffe, JR, Comfort, P and Fawcett, T. 9, 2015, *Journal of Strength and Conditioning Research*, Vol. 29, pp. 2641-2654.
16. National Strength and Conditioning Association. *Strength and Conditioning Professional Standards and Guidelines*. Colorado Springs, CO : National Strength and Conditioning Association, 2009.
17. Aspen Institute Project Play. *State of Play 2016: Trends and Developments*. s.l. : Aspen Institute, 2016.
18. The Inter-Association Task Force for Preventing Sudden Death in Secondary School Athletics Programs: Best-Practices Recommendations. Casa, DJ, et al. 4, 2013, *Journal of Athletic Training*, Vol. 48, pp. 546-553.
19. Who is responsible for preventable deaths during athletic conditioning sessions? DeMartini, JK and Casa, DJ. 7, 2011, *Journal of Strength and Conditioning Research*, Vol. 25, p. 1781.
20. Youth Sports Safety Alliance. *National Action Plan for Sports Safety*. 2013.
21. Statler, Tracy and Brown, Victor. Facility Policies, Procedures, and Legal Issues. [book auth.] G. Gregory Haff and N. Travis Triplett. *Essentials of Strength Training and Conditioning, 4th Edition*. Champaign, IL : Human Kinetics, 2016, pp. 623-640.
22. Reed Wainwright, Attorney at Law. Personal Correspondence. Weatherford, TX : Law Office of Reed Wainwright, 2016.
23. McGladrey, B. *High School Physical Educators' and Sport Coaches' Knowledge of Strength Training Principles and Methods*. Doctoral Dissertation. s.l. : University of Utah, 2010.
24. Miller, M. G., & Housner, L. A survey of health-related physical fitness knowledge among preservice and inservice physical educators. *Physical Educator*. 1998, Vol. 55, 4, pp. 176-186.
25. Castelli, D., & Williams, L. Health-related fitness and physical education teachers' content knowledge. *Journal of Teaching in Physical Education*. 2007, 26, pp. 3-19.