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INVESTIGATING PERSONAL FITNESS TRAINERS' QUALIFICATIONS

by

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B.S. Florida State University, August 1996
M.S. Florida State University, August 1997

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the College of Education & Human Performance
at the University of Central Florida
Orlando, Florida

Spring Term
2014

Major Professor: David Boote

ABSTRACT

A threefold approach was utilized to analyze the problem of defining personal fitness trainers' qualifications. First, the problem was explored nationally, internationally and locally. Within the local context, the history of the exercise science program, stakeholders and culture at the University of Central Florida and in the central Florida marketplace was examined. Next, a systematic literature review examined possible causes within the knowledge context, learning/motivational context and organizational/cultural context. Then, an original research study investigated the qualifications for Central Florida, Personal Fitness Trainers (PFTs) by examining the relationship(s) and/or differences between variables such as education, certification, years of experience and income as well as attitudes, opinions and beliefs (AOBs) regarding those variables. An online questionnaire was emailed to 196 PFTs in the central Florida area and utilized to assess qualifications as they relate to income. The 48 PFT participants were compared based on education (ED), certification (CE), and experience (EX) and their effect on income. There were no statistically significant differences in 2012 income based on (ED) level, $F(4,26) = 2.283, p=.086$. The National Strength and Conditioning Association (NSCA), American College of Sports Medicine (ACSM), and National Academy of Sports Medicine (NASM) were the preferred (CE) companies (ranked 1st or 2nd, 65% and 45% of the time respectively). From the 48 PFTs that answered the survey, 54% of PFTs agreed (A) or strongly agreed (SA) that a degree should be required in order to practice, 73% (A) or (SA) that (CE) is helpful in gaining employment, and 66% (A) or (SA) that a national board exam or license should be required to practice. The least number of (ED) courses was taken in biomechanics and business marketing. In conclusion, PFT level of education and certification

type does not significantly affect income given the current system. PFTs agree that more stringent guidelines are needed to limit entrance into the profession to those who are more qualified. The author presents a new model for undergraduate curriculum and instruction requiring hands on coursework, certification and internship or service learning project.

This work is dedicated to my heavenly father, Lord and Savior, Jesus Christ and my earthly father, Steven James Akerson who began his residency with you 8/11/11 during this project.

Love you, love you, love you.

ACKNOWLEDGMENTS

To my wife, Babe – My love for you is eternal. I cannot thank you enough for your support on my adventure to slay the Doctorate Dragon.

To my daughters, Ellie and Abbie – your fearlessness and love of learning inspired me throughout this 5-year journey. I pray you always keep the eye of the tiger and ROAR for the glory of God.

To my Mom – you are a remarkable woman of God and I admire your courage.

To the faculty at UCF South Lake - Your exceptional care for the students and each other is inspirational.

To Dr. Tom Fisher – thank you for affirming my drive was a gift and not insanity when I came to ask for your advice in 2009. Your humor and witty play on words are legendary. Like you, I have a party going on up there and when I go into Mike’s world, I too get the children of the corn faces sometimes looking back at me. I am grateful that I am not alone, ha ha.

To Dr. Anna Valdes – having a common interest in this project was not by chance. I am thankful for your insight, statistics help on the research project and encouragement.

To Dr. David Boote –Thank you for helping transform a musclehead into an educational research scholar. I truly learned what it is to be an effective teacher from you and this program.

To Dr. Anthony Abbott – You have inspired me to set high goals and standards for our industry since I first met you in 1996. Thank you for allowing me to stand on your shoulders sir. You truly are a giant in our industry and your integrity is a great example for us all.

To Dr. Jeff Duke – Thanks for always reminding me that we may not know what the future holds, but we know who holds the future.

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CHAPTER 1: INTRODUCTION

Nearly two-thirds of American adults are either overweight or obese and childhood obesity has tripled since 1980 (CDC, 2011). The battle to combat the obesity epidemic is estimated as costing the nation nearly \$150 million per year in taxpayer dollars (CDC, 2010). “Together, they add up to a public health crisis that feeds a \$60 billion industry of products, services, diets and foods designed to help people lose weight.” (CNBC, 2011) Consequently, these problems seemingly warrant an increased demand for highly trained healthcare professionals to lead the way. Accordingly, the 2009 U.S. Bureau of Labor predicted a growth of ~24% in employment for fitness and aerobic instructor jobs in their ten year projection from 2008-2018. However, legally, anyone can practice as a personal fitness trainer or related instructor with absolutely no education or experience in the United States.

The fitness industry has worked to create some standards for various human performance type instructors (i.e. personal fitness trainers, sports performance instructors, strength coaches) via encouraging exercise science degrees and certifications. However, some believe the fitness industry lacks academic rigor and validity (Malek et al., 2002; Ives and Knudson, 2007; Abbott, 2009, Boone, 2010). Further, some researchers feel that those delivering biomechanics instruction are not qualified nor prepared to occupy emerging jobs in the industry (Malek et al 2002, Ives and Knudson, 2007). For example, Malek et al 2002 developed their own assessment tool called a FIKA (Fitness Instructors Knowledge Assessment) to see if those with a degree and particular certifications were more knowledgeable than those with and/or without experience as a fitness instructor. The FIKA examined five exercise science areas: nutrition, health screening, testing protocols, exercise prescription and general training knowledge. Results indicated those

instructors holding a bachelor's degree in exercise science and certification by American College of Sports Medicine (ACSM) or the National Strength and Conditioning Association (NSCA) performed better on the knowledge assessment. The authors concluded licensure should be required before fitness instructors (aka personal fitness trainers) are given permission to practice their specialty.

The self proclaimed National Board of Fitness Examiners (NBFEE) conducted the largest nationwide survey on record of those claiming to be personal fitness trainers (PFTs) to elicit their opinion on issues of competency and discussion of licensure (NBFEE, 2006). The survey was completed by 2730 respondents of which 66.7% reported to have associate's degrees or higher. The NBFEE results reported 76% agree or strongly agree that the licensing of personal trainers will increase public perception of personal trainers and would facilitate referrals from other health care providers. Nearly two thirds expressed discontent with professionally deficient peers, and nearly 80% believe a national exam should be created by a board of experts rather than each individual state licenses. The NBFEE concluded that their survey would help identify goals to best serve the entire profession by reporting views of current personal trainers.

Published one year later, Ives and Knudson (2007) literature review article titled, *Professional Practice in Exercise Science - The Need for Greater Disciplinary Balance*, used data to reference the limited biomechanics and motor behavior courses at universities nationwide. The authors suggested there was too much emphasis on exercise physiology as a knowledge base in universities and by the nationally accredited certification for fitness instructors from ACSM. Additionally, the authors concluded that "a hole" in biomechanics curriculum and certification requirements "severely limits clinical decision making skills, scope

of practice, and risks the acceptance of exercise science as a profession.” (Ives & Knudson, 2007, p. 112). Ten identical designations of certified personal trainer by the Institute for Credentialing Excellence (I.C.E.), the standard for national accreditation, has left students in undergraduate exercise science programs nationwide scratching their head as to what knowledge, skills and abilities one really needs to differentiate uniqueness of practice (I.C.E., 2011). Frankly, students are not sure what the difference is between nationally accredited, certified personal trainer credentials from the ten certifying organizations. Moreover, some exercise science students are losing motivation and hope for a financial return on their degree considering the U.S. Bureau of Labor research from 2009 listed “post-secondary vocational award” as the “most significant source of post-secondary training or education.” (U.S.B.O.L., 2009).

Five years ago when this author began teaching in the undergraduate exercise science program, a student asked, “Why should we spend money on earning an exercise science degree if no legal regulation exists to eliminate less competent personal fitness trainers competing for the same wages?” At first, the thought was to defend the value of most college graduates earning significantly higher income than those without. However, reflecting on the observational history of twenty years as a personal trainer, this may not be accurate. The student’s question shared with other faculty has legitimate concern for many stakeholders in the development of future personal fitness trainers and related instructors.

The dilemma to differentiate qualifications for PFTs is multifaceted. These complex problems may be caused by specific gaps in curriculum and instruction, individual learning or motivation problems, or by organizational politics symbolic of a vocation lacking a defined scope of practice in the fitness/human performance industry. This research took a threefold

approach to unpack the complex problems of practice for PFTs. First, the problem was explored nationally, internationally and locally. Within the local context; the history of the exercise science program, stakeholders and culture at the University of Central Florida and in the central Florida marketplace was examined. Next, a systematic literature review of research on fitness trainers' qualifications nationally and internationally analyzed possible causes within the knowledge context, learning/motivational context and organizational/cultural context. Then, an original research study investigated personal fitness trainers' qualifications for Central Florida, PFTs by examining the relationship(s) and/or differences between variables such as education, certification, years of experience and income. The specific research questions were as follows: Do Central Florida, PFTs who possess an exercise science related degree and/or certification earn significantly higher income than those with less education or lack certification? Are there strong relationships between education, certification, experience and income amongst Central Florida, PFTs? What knowledge, skills and abilities do personal fitness trainers possess and believe is critical to ensure they are fit to lead the battle in restoring the personal health of America?

Finally, the results from this original research and systematic literature review served as the basis of a redesigned undergraduate curriculum and instruction plan for stakeholders in the education of individuals pursuing careers in exercise science studies. A model of this new plan entitled, *Applied Curriculum for Careers in Exercise Science Studies (A.C.C.E.S.S.)* and a seven step strategic plan was presented as recommendations to assist in successfully developing future, qualified and professional PFTs.

Conceptualization of the Problem: National Perspective

It remains unclear which university or college birthed the exercise science degree. Few studies are available exploring exercise science related curriculum and instruction. A study by Elder et al. (2003) examining exercise science curriculum nationwide reported that of 119 institutions responding, 33% used ACSM, KSA (Knowledge, Skills, & Abilities) and National Association for Sport and Physical Education (NASPE) guidelines for exercise science related professions. Also, other institutions responding to the curriculum survey reported using NSCA and American Society of Exercise Physiologists (ASEP) guidelines to construct curriculum for their degrees. Tommy Boone (2009, p. 1), Professor and Chair, Department of Exercise Physiology at The College of St. Scholastica and past president of ASEP suggested that most exercise science degrees are “99% the equivalent of a physical education degree without the typical activity courses and the opportunity to teach physical education in the public school system.” Boone suggested that essentially, the exercise science degree does not prepare graduates for a specific job as a result of the degree itself unlike being licensed as a P.E. teacher for K-12 education. Therefore, to his assertion and many alike, it has little value based on its existing status.

The NSCA became the first nationally accredited certified personal trainer certification in 1996 (NSCA website, 2013). Nine other organizations have followed suit since then as a result of the Institute of Credentialing Excellence (I.C.E.) not limiting the number of identical credentials for nationally accredited certifications (I.C.E., 2011). Thus, one may come to the conclusion that the credential itself is rather ambiguous since there are ten identically named credentials.

With ambiguous standards and no state license to practice, consumers (aka fitness clients) may find it difficult to determine how to select a personal fitness trainer. This author agrees with Malek et al. (2002) and Abbott (2009) that the most knowledgeable personal fitness trainers possess a degree in an exercise science related field along with a National Strength & Conditioning Association or American College of Sports Medicine certification. In addition, a personal fitness trainer who models a healthy lifestyle and is a good listener appears to have character traits that may lead to caring for his or her client success. Furthermore, it would be wise for a consumer to ask for references and probe deeper into questions that prompt the trainer to share his or her unique qualifications.

As the post secondary education sector was exploding with growth, the K-12 community did not fair so well. In 2000, the Center for Disease Control, *School Health Policies and Programs Study (SHPPS)* SHPPS study found 8.0% of elementary schools, 6.4% of middle/junior high schools, and 5.8% of senior high schools provide daily physical education or its equivalent (CDC, 2000). In addition; despite the rapidly growing obesity epidemic in the United States, the passage of *No Child Left Behind (NCLB)* in 2001 denied physical education as a core subject requiring neither a federal standard nor accountability for K-12 schools (USDOE, 2011). Some believe this encouraged a narrowing of K-12 school curriculum towards math, reading, writing and science and gave many school boards the additional rationale to reduce or eliminate requirements for students to participate in PE classes (NASPE, 2010). Consequently, the demand for degreed, physical education teachers decreased and colleges nationwide further moved towards eliminating the classic physical education major and expanding exercise science related degrees.

From 2001-2005, the United States Bureau of Labor reported a 32% increase nationwide in the number of individuals employed as Fitness Trainers and Aerobics Instructors. Published statistics by industry associations such as the Sporting Goods Manufacturing Association (SGMA) and National Sporting Goods Association (NSGA) reported a modest growth of 6.1% for all sporting goods sales between 1997-2001 (SGMA and NSGA, 2003). Then, massive growth occurred in the immediate 5 years following 2002-2007 where the SGMA reported 38% growth in sales (NSGA, 2010). The marketplace demand for companies offering products and services to many who needed care to recover from injuries, lose weight, and improve fitness/athletic performance skyrocketed. So much that in 2012, The United States Bureau of Labor (USBOL), Occupational Employment Statistics (OES) reported \$17.74 per hour and \$15.63 per hour (national and Florida mean income) for those employed full time as fitness or aerobic instructors (USBOL OES, 2012). This far exceeded the legal definition of gainful employment or substantial gainful activity (SGA) by the official Social Security website that is \$1010 per month (S.S.A., 2013). One interesting observation that provokes the debate of whether the exercise science degree has value is that thirty-eight percent of respondents to the USBOL, OES of 2012 did not have a Bachelor's Degree or higher. Further, the income statistics reported do not include self-employed PFTs. In addition, the USBOL does not report relationships or statistical differences between wages and/or education or certification. A ProQuest, Physical Education index scholarly article search also did not return any published studies exploring wages and the exercise science degree. All combinations using the search terms fitness trainer, income, wages, exercise science degree, and education were searched.

Conceptualization of the Problem: International Perspective

Research shows questions of qualifications abound internationally for PFTs in Canada, Jordan, New Zealand, Shanghai and the United Kingdom. (Forsyth et al., 2005; Lloyd, 2008; Guo, 2009; Al-Shishani, 2009; Sipe, 2012; De Lyon & Cushion, 2013). Lloyd (2008) and De Lyon & Cushion (2013) both concluded that employers and PFTs practicing in the field find social skills and personality more valuable than technical skills in this profession. Anderson et al.'s (2010) study of 268 Canadian PFTs' results suggested that nearly all the education levels from secondary education to university degree worked outside their scope of practice. As of September 2013, one can search the definition of personal trainer on Wikipedia, explore registries in UK, Australia, Canada, and Brazil, and find there are no legal statutes internationally in the form of licensure. However, some of these countries do offer registry as a PFT for those that have some combination of degree, certification, and insurance. The U.K. Registry of Exercise Professionals even ranks the level of personal trainer competency (SkillsActive, 2013). The registry process appears similar to the U.S. where The National Commission for Certifying Agencies (NCCA), part of the Institute for Credentialing Excellence (I.C.E.), lists certifying organizations that are accredited, but does not rank the ten identical credentials of certified personal trainer. The Registry of Exercise Professionals operated by SkillsActive offers "activities encompassing everything from setting standards for qualifications to helping individuals find the right career and directing employers to the best training for their staff." (SkillsActive website, 2013). The UK Commission for Employment and Skills, similar to the USBOL and its relationship with the NCCA, contracts sector companies like SkillsActive to create national occupational standards. Both are in the business of setting high standards but do

not police or force individuals to obtain credentials to practice as personal fitness trainers or related instructors.

Conceptualization of the Problem: Local Perspective

Within the University of Central Florida (UCF), College of Education & Human Performance (EHP), Department of Educational & Human Sciences (EHS), Sport & Exercise Science Undergraduate Program; students select from three tracks (i.e., Human Performance, Coaching, and Community Sports & Fitness). Students in the exercise science program attend class both on a main campus and at a regional campus approximately 30 minutes away where the program first started in 2002. The exercise science program now has over 1500 students. The human performance track has two main concentrations: fitness and sports performance instruction. Fitness courses focus on general population with weight loss / body composition goals, and prepare students to be employed as fitness instructors, aerobic instructors or management in the industry. Additionally, the sports performance track focuses on developing athletic ability such as power, speed and agility preparing students to be employed as strength/speed coaches in secondary schools, colleges or professional teams or in the private sector. Three years ago, the requirement of certification and internship was removed from the UCF sport & exercise science program. Currently at UCF, certification is recommended but not required and three additional courses within the major can be substituted in lieu of a nine credit hour practicum (internship).

It is important to note that researcher bias exists in this study since this author has been employed as an adjunct instructor at UCF South Lake. In addition, this author has been

employed or been an employer of fitness/human performance instructors for twenty-one years in the marketplace.

University of Central Florida Exercise Science Program Stakeholders & Perceived Roles

- ~ 100-150 students graduate each semester from UCF with exercise science degrees specializing in human performance.
 - The students' role is to be active learners and achieve the KSAs (knowledge, skills and abilities) to one day be gainfully employed in the field.
- 7 full time instructors/lecturers
 - The teachers' role is to facilitate learning, advise students and link students to internships or businesses in the community for employment.
 - The program coordinators' role is to assure teachers are in place for each course, students are graduating and to lead the vision for the program.
- ~ 2-3 adjunct instructors or teaching assistants
 - The adjunct instructors typical role is to teach one or two courses, oversee internships, and are most likely employed full time in related field that offer practical experience and insight for the learners.
- 1 full professor at main campus
 - The full professor's role is to lead the vision of the program and conduct research to bring grant dollars and recognition to the university.
 - May or may not teach in the classroom.
 - Acts as Chairperson for the Department of Educational and Human Sciences
- 1 associate professor at main campus
 - Assist full professor in conducting research
 - Teach graduate courses in fitness and human performance specializations
- 1 assistant professor at main campus
 - Assist full professor in conducting research
 - Teach graduate courses in fitness and human performance specializations
- 3 full time administrative assistants (two main campus and one regional campus)
 - Help students register for courses in line with specialization.
 - Assist program coordinator and faculty with administrative duties

Note: Faculty and staff retrieved from UCF Website, August 2013.

UCF Main Campus Culture within the Exercise Science Program

Social science theory suggests that cognitive bias exists in the perception of culture. Cognitive biases are essential to explore because “systematic errors” highlight the “psychological processes that underlie perception and judgment” (Tversky & Kahneman, 1999, p. 582). Faculty and staff employed three years or more within the University of Central Florida, College of Education and Human Performance, Department of Educational and Human Sciences were interviewed to establish the historical record of the program development and campus culture. The full professor and chairperson of the department of EHS declined to be involved in this research. Dr. Thomas Fisher, Associate Lecturer at the main campus provided his recollection of the exercise science program evolution since its inception in 2002. The majority of the main campus culture comes from his perspective.

Prior to this program having a unique presence in the College of Education (COE); athletic training, physical therapy, and nursing majors had exercise physiology coursework within the College of Health and Public Affairs (COHPA). Dr. Fisher taught courses as part of the physical education major within the COE, as well as, athletic training, physical therapy, and nursing majors within COHPA. During this time, UCF discussed a Memorandum of Understanding (MOU) to be an education and management partner with South Lake Hospital and Lake Sumter Community College as part of a new project to create a multi-purpose sports complex and wellness center to be called, The Olympic Training Center. South Lake Hospital, UCF, and the new Olympic Training Center would have both private and public resources to create an optimal learning environment and future jobs for UCF students. The marketplace had already begun to expand jobs within the sports and fitness sector while the demand for the

physical education degree had declined in 2000 and 2001. Thus, the MOU was a logical and mutually beneficial collaboration. Dr. Debby Mitchell, Dr. Thomas Fisher, Dr. Michael Kehoe, and Dr. Jeff Duke collaborated to redesign the physical education degree into education plan that would fit the new jobs emerging in the marketplace for sports coaches, fitness trainers, and strength and conditioning coaches. The new major, Sports and Fitness, had two specializations; coaching and fitness. The main campus continued to offer a specialization called *Physical Activity and Movement for Children* left over from the P.E. major. Dr. Fisher taught the majority of undergraduate exercise science related courses and became the coordinator for a Master's degree in applied exercise physiology. Dr. Fisher described himself as “a clinical practitioner whose pedigree was better suited for private practice and not research.”

Dr. Fisher believes, “The tragic events of September 11th, 2001 and its broad economic consequences stifled the original vision and MOU between UCF, South Lake Hospital and what became The National Training Center.” Dr. Jeff Duke and Dr. Michael Kehoe helped drive new students into the major at the regional campus and specializations expanded into *Fitness, Recreation, Human Performance and Coaching*. Courses and additional full time instructors were added at the regional campus but the National Training Center was not as successful as originally planned. The balance of power had begun to transfer as a result of UCF's massive growth in new students and research dollars from 2002-2010. “UCF climbed to the second largest university in the United States and the athletics department with the draw of successful sports program revenue transferred the influence of resources and relationships back to the main campus.” (T. Fisher, personal communication, Feb. 25th, 2014).

In 2010, the main campus hired a full professor, a highly decorated and published researcher, to elevate the exercise science program to a recognized national research site for innovative exercise science studies. One year later, an assistant professor and soon after, associate professor were hired to expand the research program and teach human performance courses. Additionally, the major name was changed to Sport and Exercise Science and a PhD program was developed with a departmental goal of increasing academic rigor and reputation.

Over the past three and a half years, the main campus has helped increase student enrollment from ~ 500 students to over 1500, adopted a strong research agenda by creating multiple research labs, and most recently changed the Department name to Educational and Human Sciences. The original program's certification requirement prior to graduation was eliminated but remains highly encouraged. The internship requirement was also changed to give students an option of taking three additional electives. Dr. Fisher believed this was a "necessary action because the marketplace couldn't support enough internships for 1500+ students."

Regional Campus Culture within the Exercise Science Program

In late 2001 / early 2002, Dr. Duke and past assistant professor, Dr. Kehoe, founded the new program for the sport and fitness major at a UCF regional site partnered with Lake Sumter Community College ~ 30 minutes from the main campus. Dr. Duke, a renowned industry leader in coaching education, was instrumental in linking the national training center, an orthopedic partnership, the headquarters for The Special Olympics, and local high schools in the community as supporters of the new program. The enrollment grew rapidly to its peak in Spring 2010 with ~ 400 students attending the program at the regional site along with a stellar reputation for

placement of jobs in the local community, state and nationwide. During 2002-2010, it was a requirement that students achieved three certifications and conducted two internships before graduation (J. Duke, personal communication, September 18th, 2013). The strict requirements and high expectations of certifications and internships were for positioning students as immediate qualified candidates for emerging jobs in the industry. Dr. Kehoe said he based his input towards the original fitness related curriculum on one question, “What do our students need to get hired?” (M. Kehoe, personal communication, September 24, 2013). He strongly believed that achieving hands on experience through two separate internships (240 and 480 hours) along with three certifications (one needing to be nationally accredited) would “move UCF graduates resumes to the top of the stack.” The internships were often stepping-stones into full time positions. Dr. Duke’s coaching students were offered jobs at the point of graduation by high school principals because they were required to achieve teaching certification in critical need areas like science, math, exceptional student education (ESE), in addition to coaching or fitness related certification. Dr. Duke shared, “Our motto was accredited degree + professional certification + field experience = JOB and it was a huge success!”

Owens & Valesky (2011) bureaucratic approach to organizational theory has a vertical communication line to supervisory positions to meet problems arising from changing conditions. The conditions had been changing at the regional site and main campus for years prior to the new full professor’s directive to modify the program. The regional campus and MOU with South Lake Hospital’s, National Training Center did not meet its original vision nor produce research or grants during 2002-2010. UCF’s regional campus provided feedback in hopes to quell the new main campus full professor’s decision to eliminate certification and internship requirements

because they felt that new graduates would not be as successful achieving employment without them. However, just as the bureaucratic frame possesses “a firm hierarchical control of authority and close supervision of subordinates” (Owens & Valesky, 2011, p.69), the regional campus was not in a position of power to override the new degree submission to the College of Education & Human Performance.

Over the past three years, the regional campus has seen its attendance drop in courses by over 300 students, offered fewer courses, and struggled to understand its new role as supporting site to the main campus, exercise science program. (J. Duke, personal communication, September 18th, 2013). The regional campus was asked to re-invent itself by creating a new specialization. The new specialization for Fall 2013, Community Sports and Fitness offered solely at the regional site, is a practitioner oriented program for students who are better suited for non-research job functions. The faculty at the regional site is adjusting to teaching more courses at the main campus.

Central Florida Marketplace

In step with other colleges nationwide, UCF’s physical education degree program was changed into a sport and fitness degree in late 2001 / early 2002 with specializations that would reflect the changing marketplace and increased growth in the fitness industry. New graduates have been flooding the marketplace in the surrounding Central Florida counties of Brevard, Lake, Orange, Osceola, and Seminole. Yet, new graduates from Spring 2011 to the present entering an exploding fitness marketplace with no state or national license requirements have communicated with faculty and staff that they are struggling to earn jobs that provide wages higher than non-degreed and certified personal fitness trainers or related instructors.

Florida ranks as one of the top five states in terms of total employment of Fitness and Aerobic Instructors according to the United States Bureau of Labor, Occupational Employment Statistics (USBOL, 2012). Table 1 below, created from the past ten plus years of USBOL OES data, shows the median wage has dropped from its peak in 2007 (\$14.65 to \$12.37 respectively). Median wage has been suggested to be a better gauge of income growth since mean wage is often affected by outlier statistics (U.S. Census Bureau, 2013). In addition, Florida's highest 10% of earners (Florida Exp) gross 40% less than other states nationwide (\$19.31 and \$31.99 respectively). It is important to note that self-employed fitness instructors are not included in these statistics. In addition, the USBOL does not show any relationship or difference between level of education, certification or years of experience versus wages/income.

Table 1: 2001-2012 U.S. Fitness Trainers & Aerobic Instructors Employment & Wages

Fitness Trainers & Aerobics Instructors Employment & Wages										
Year	# Employed		Hourly Wage (wage estimates in dollars)							
	Florida	USA	Florida Mean	USA Mean	Florida Median	USA Median	Florida Entry *	USA Entry*	Florida Exp**	USA Exp**
2001	9,980	160,490	\$ 12.54	\$ 14.08	\$ 10.52	\$ 11.22	\$ 6.64	\$ 6.52	\$ 16.15	\$ 26.06
2002	9,210	169,920	\$ 12.98	\$ 14.38	\$ 10.42	\$ 11.51	\$ 6.82	\$ 6.78	\$ 16.55	\$ 26.22
2003	9,300	177,790	\$ 13.44	\$ 14.71	\$ 11.32	\$ 11.78	\$ 6.99	\$ 6.85	\$ 16.78	\$ 26.87
2004	9,890	182,280	\$ 13.51	\$ 14.98	\$ 11.72	\$ 12.25	\$ 7.02	\$ 6.99	\$ 16.75	\$ 26.71
2005	10,300	189,220	\$ 14.35	\$ 14.93	\$ 12.50	\$ 12.43	\$ 7.62	\$ 6.99	\$ 17.71	\$ 26.45
2006	10,560	205,970	\$ 15.00	\$ 15.24	\$ 13.42	\$ 12.46	\$ 7.76	\$ 7.15	\$ 18.62	\$ 27.29
2007	11,430	219,990	\$ 16.13	\$ 15.86	\$ 14.65	\$ 13.31	\$ 8.43	\$ 7.48	\$ 19.98	\$ 28.36
2008	10,180	229,030	\$ 15.79	\$ 16.50	\$ 14.32	\$ 14.04	\$ 8.26	\$ 7.75	\$ 19.55	\$ 29.21
2009	11,320	228,170	\$ 16.28	\$ 16.99	\$ 14.34	\$ 14.74	\$ 8.70	\$ 7.90	\$ 20.07	\$ 29.86
2010	12,130	225,490	\$ 15.15	\$ 17.27	\$ 12.65	\$ 14.95	\$ 8.03	\$ 8.21	\$ 18.71	\$ 30.48
2011	12,490	231,500	\$ 15.28	\$ 17.38	\$ 12.09	\$ 14.92	\$ 8.12	\$ 8.33	\$ 18.87	\$ 31.34
2012	12,490	234,070	\$ 15.63	\$ 17.74	\$ 12.37	\$ 15.25	\$ 8.30	\$ 8.48	\$ 19.30	\$ 31.99

* Entry are the bottom 10% of earners.
* Exp are the top 10% of earners.
(1) Estimates do not include self-employed workers.
(2) Annual wages calculated by multiplying the hourly mean wage by a "year-round, full-time" hours figure of 2,080 hours.

One Central Florida corporation, Dullmeyer Physical Therapy, LLC, employs 5 of the top 30 fastest growing jobs (i.e. physical therapist aides, physical therapist assistants, physical therapists, athletic trainers and fitness trainers) in the United States. They reported annual revenue growth of 40% since the 2008 U.S. great recession and attributes much of its success to quality staff possessing exercise science related degrees and certifications. (E. Dullmeyer, Managing Partner of DPT, LLC personal communication 2011 and US Bureau of Labor Statistics, 2009). All full time fitness trainers within this company earn higher than the Florida average wage for this profession and some are above the ninetieth percentile of the national average.

Fitness Centers locally are mixed in their qualifications requirements and salary for personal fitness trainers. One national brand, LA Fitness and its 13 clubs within a 20-mile radius of UCF does not require its personal fitness trainers to possess an exercise science degree. However, they do prefer degrees and certifications. One former personal fitness trainer communicated they are paid \$6.00 per half hour visit with some commissions on the sale of personal training sessions. (C. Martin, personal communication, October 25th, 2013). Another brand, MVP Sports Clubs and its local fitness center, RDV Sportsplex, employs full time fitness trainers with exercise science degrees while non-degree staff, Fitness Advisors, assist in fitness floor supervision. RDV Sportsplex also requires its trainers to possess or achieve a nationally accredited certification within six months of hire. RDV Sportsplex fitness trainers' and performance coaches' average over \$20 per hour and some earn over \$80,000 annually. Meanwhile, a former employee of YMCA, possessing 27 locations in the Central Florida, personally communicated, "I quit in disgust after being given only a dollar raise over other non-

degree personal trainers” when she completed her UCF exercise science degree after being employed for two years. Finally, a medical fitness center part of South Lake Hospital in Clermont, FL called The National Training Center requires its personal fitness trainers who earn ~ \$14-\$25 per hour to be degreed and certified. Those who supervise the fitness floor as fitness technicians are not required to hold a degree and earn between \$9 and \$14 per hour. (K. Riecken, personal communication, November 7th, 2013).

Consider the following scenario. In-state tuition for University of Central Florida is estimated to cost \$80-\$100K for the average 4-5 years it takes to complete an undergraduate degree (About.com college costs, 2013). The National Personal Training Institute (NPTI), a vocational school, takes four months to complete, costs just over \$10,000 for tuition and residency and prepares students for a nationally accredited certification exam (NPTI, 2013). The park down the street is open for the public, costs zero dollars for someone to take another through a fitness workout.

The challenge for those encouraging young people to achieve a higher education degree in exercise science is justifying \$100K of student loans when no degree, certification or experience is required to practice. Some students mistakenly think a Master’s Degree in Exercise Science is what is needed for higher wages and dig deeper into debt facing the same grim scenario two years later. Other personal fitness trainers get a four to six year head start in experience and building their personal fitness training business without achieving any technical education. Does having a degree, a certification, or experience result in significantly higher income? What type of knowledge or qualifications does the marketplace most desire? What

does the current national and international body of research present as factors causing these complex problems?

CHAPTER 2: LITERATURE REVIEW

This portion of research explored existing national and international studies involving personal fitness trainer's qualifications. Table 2 and Table 3 outline the author, year, purpose, and main conclusions. Then, the possible causes of the global problem defining those qualifications were explored through educational theories related to the knowledge context, learning/motivational context, and organizational/cultural context.

Systematic Literature Review Methodology

Two main online article resources were used for the systematic literature review to unpack the causes and factors affecting personal fitness trainer education: ProQuest Physical Education Index and Social Science Citation Index. The topic search terms were fitness trainer and education from the years 2003-2013. ProQuest Physical Education Index initially returned 455 articles. However, a cursory title review of those not directly relating to curriculum, competency, teaching methods, educational standards, regulation or litigation eliminated 408 of the responses. Most articles were not valid for this review because they were specific training methods applied to experimental and control groups. Next, the 47 remaining abstracts were read and reduced to 15 because of duplicate articles published in multiple sources, athletic training, equipment trends in personal training, and narratives from health/fitness organizations.

The Social Science Citation Index returned 14 articles of which only two met inclusion criteria that were not duplicates from ProQuest. Further mining the literature and by conducting a reverse citation search of the 19 sources added 15 additional sources. Some sources were included earlier than 2003 as seminal works since they are often cited in other articles and

valuable for the reader to gain insight of the complex problem of practice. Table 2 and Table 3 below are a summary reference of national and international articles, studies, and seminal works that address causes of this complex problem.

Table 2: National Research Perspective of PFT Qualifications

Reference	Year	Purpose	Main Results/Conclusions
Melton, D., Dail, T. K., Katula, J. A., & Mustian, K. M. (2011). Women's perspectives of personal trainers: A qualitative study. <i>The Sport Journal</i> , 14.	2011	Authors used focus group of female clients of personal trainers to provide viewpoints related to the desirable qualities of personal trainers including opinions regarding trainer certification and education.	The authors' suggested, "undergraduate and certification programs should include training in the development of interpersonal skills such as active listening, empathetic communication, and strategies to enhance motivation." In addition, they support licensure and informing the public about trainer qualifications.
Boone, T. (2010). Exercise science is a meaningless degree. <i>Professionalization of Exercise Physiology online</i> . 13(4), 1-14.	2010	The former President of ASEP, Boone's purpose was to evoke positive change for the industry and recommend improved exercise physiology curriculum.	Author felt the exercise science degree resembles past P.E. degree and does not prepare graduates for specific jobs.
Kravitz, L. (2010). Highly effective personal training: An evidence based review of teaching strategies. <i>Strength and Conditioning Journal</i> , 32(3), 87-89.	2010	Create a taxonomy of personal training teaching competencies and a self reflection tool.	Personal trainers need a wide knowledge base, a caring attitude to serve others, enthusiasm and a love of learning.
Madeson, M. N., Hultquist, C., Church, A., & Fisher, L. A. (2010). A phenomenological investigation of women's experiences with personal training. <i>International Journal of Exercise Science</i> , 3(3).	2010	Focus group, qualitative study on what stands out for woman when working with a personal trainer.	Relationships, trainer personality qualities, outcomes and motivation were more important than education criteria.

Reference	Year	Purpose	Main Results/Conclusions
Massey, D. (2010). Program for effective teaching: A model to guide educational programs in strength and conditioning. <i>Strength and Conditioning Journal</i> , 32(5), 75-85.	2010	Create an effective teaching model for S&C Coaches	Author created a Program for Effective Teaching (PET) with the core teaching tools called Total Teaching Act (TTA).
Melton, D.I., Dail, T.K., Katuna, J.A., and Mustian, K.M. (2010). The current state of personal training: Managers' perspectives. <i>Journal of Strength and Conditioning Research</i> , 24(11), 3173-3179.	2010	Survey and focus groups of PFT managers on what qualities are important to be a successful personal trainer.	A hierarchy of themes for positive and negative characteristics was created.
Stacey, D., Hopkins, M., Adamo, K.B., Shorr, R., and Prud'homme, D. (2010). Knowledge translation to fitness trainers: A systematic review. <i>Implement Science</i> 5:28.	2010	Review of literature to determine how fitness trainers acquire knowledge.	Only two studies allowed for inclusion summated those with higher education used scholarly research journals and lower educated used mass media such as internet.
Abbott, A. (2009). Certified, Qualified and Justified. <i>Exercise Standards and Malpractice Reporter</i> , 23:2. pp.17, 20-22.	2009	The purpose was to raise attention to the industry challenges with certification and qualifications.	Not all certifications are equal. Author suggested a need for licensure to protect the consumer and justify the instructor.
Craig, A. C., & Eickhoff-Shemek, J. (2009). Educating and training the personal fitness trainer: A pedagogical approach. <i>Health & Fitness Journal</i> , 13(2), 8.	2009	The purpose of this study was to provide classroom and hands on experiences for exercise science students as PFTs.	Authors felt that their service-learning program bridged the gap between theory and application. Further, the program created a successful learning/teaching environment for Ex Sci students.

Reference	Year	Purpose	Main Results/Conclusions
George, M. (2008). Interactions in expert service work: Demonstrating professionalism in personal training. <i>Journal of Contemporary Ethnography</i> , 37(1), 108-131.	2008	Using participant observation and in-depth interviews, the author explored the experiences of personal trainers to understand the complexities of interactive service work.	Authors concluded PFTs use a dynamic combination of expert social skills and technical skills to serve clients.
Melton, D.I., Katuna, J.A. & Mustian, K.M. (2008) The current state of personal training: An industry perspective of personal trainers in a small southeast community. <i>J. Strength & Conditioning Research</i> , 22(3), 883-889.	2008	Authors used focus group methodology to examine the current state of personal training in this region.	Authors suggested adding business and interpersonal skills into curriculum and the need for the industry to create a national exam and licensure to improve competency, public perception and consumer safety and exercise adherence.
Ives, J. & Knudson, D. (2007). Professional Practice in Exercise Science: The Need for Greater Disciplinary Balance. <i>Sports Medicine</i> , 37 (2), 103-115.	2007	Literature review of the undergraduate curriculum for exercise science programs.	Authors concluded there is a gap in biomechanics knowledge for program graduates.
Sartore, M. L., & Cunningham, G. B. (2007). Weight discrimination, hiring recommendations, person-job fit, and attributions: Fitness-industry implications. <i>Journal of Sport Management</i> , 21(2), 172-193	2007	Study examined the effects of body weight and qualifications on perceptions and hiring preferences of fitness trainer candidates.	Study concluded fitness trainers and group exercise instructors are stereotyped and the expectation is they ought to look fit and attractive even if they are qualified academically.
NBFE National Board of Fitness Examiners (2006). [Personal Training Licensing Survey Results: http://www.nbfe.org/news/press_releases/survey_results103006.cfm	2006	The purpose of this work was to assess the attitudes, opinions and beliefs of personal trainers in the U.S. regarding certification, education and the prospect of licensure.	Organization suggested the use of their exam to serve as a national board exam for personal trainers.

Reference	Year	Purpose	Main Results/Conclusions
Robinson, E.M., Graham, L.B., & Bauer, M.A. (2006). The National Strength and Conditioning Association is the preferred certification for personal training employment in southeastern Massachusetts. <i>Journal of Strength and Conditioning Research</i> , 20(2), 450-451.	2006	The author's purpose was to "impact local college curriculums to increase the marketability of degree recipients upon graduation."	394 of 442 clubs responded over a 2 year survey period. 10% of clubs required a bachelor's degree. 80% required a certification with 57% of clubs in this area requiring NSCA certification.
Elder, C.L., Pujol, T.J. & Barnes, J.T. (2003). An analysis of undergraduate exercise science programs: An exercise science curriculum survey. <i>Journal of Strength and Conditioning</i> , 17(3), 536-540.	2003	Authors researched which professional organizations Ex Sci undergrads develop curriculum from.	Most (29%) use ACSM KSAs. Others use NASPE, NSCA, & ASEP. Many institutions did not require field experience.
Springer, B.L. & Clarkson, P.M. (2003). Two cases of exertional rhabdomyolysis precipitated by personal trainers. <i>Medicine & Science in Sports & Exercise</i> , 35(9), 1499-1502.	2003	Authors reviewed two cases of exertional rhabdomyolysis in healthy, experienced exercisers.	Authors "urge those involved with the education and certification of exercise trainers to include this condition in their syllabus."
Malek, M.H., Nalbone, D.P., Berger, D.E. & Coburn, J.W. (2002). Importance of health science education for personal fitness trainer. <i>J. Strength & Conditioning Research</i> , 16(1), 19-24.	2002	Quantitative study where authors created their own assessment tool to see if those PFTs possessing education and certification had more knowledge than those with experience only.	Results indicated a bachelor's degree in exercise science and certification by American College of Sports Medicine or the National Strength and Conditioning Association performed better on the knowledge assessment. Authors concluded a license should be required with such criteria in order to create optimal fitness programs and avoid unnecessary injuries.
Hare S.W., Price J.H., Flynn M.G., King K.A. (2000). Attitudes and perceptions of fitness professionals regarding obesity. <i>J Community Health</i> , 25(1), 5-21.	2000	Survey research of 225 ACSM certified instructors about attitudes and perceptions of obese clients.	Higher educated trainers used textbooks; lower use mass media. Instructors feel competent and confident to serve such clients. Authors suggested additional skills needed for counseling.

Reference	Year	Purpose	Main Results/Conclusions
Gavin, J. (1996). Personal trainers' perceptions of role responsibilities, conflicts and boundaries. <i>Ethics & Behavior</i> , 6, 55-69.	1996	228 North American PFTs survey responses from IDEA fitness journal.	Trainers were acting outside their competency and influence.
National Strength & Conditioning Association (1994). <i>Essentials of Strength Training and Conditioning</i> . Champaign: Human Kinetics	1994	Seminal work in the field that led to first nationally accredited fitness related certification.	First created for college strength and conditioning professionals.
American College of Sports Medicine. (1992). <i>ACSM's Health/Fitness Facility Standards and Guidelines</i> . Champaign: Human Kinetics.	1992	Seminal work itemized KSAs for PFTs and added guidelines for facilities.	Considered the gold standard for content validity.
Abbott, A. (1989). <i>The exercise science knowledge base of commercial fitness instructors in the State of Florida</i> . (Dissertation). Research study presented at the ACSM annual conference, 1990.	1989	The authors' purpose was to see whether personal fitness trainers / instructors were knowledgeable about their craft.	The author found that members of fitness facilities in FL had just as much knowledge as the instructors according to his test instrument results.
American College of Sports Medicine. (1975). <i>Guidelines for Graded Exercise Testing and Prescription</i> . Philadelphia: Lippincott Williams & Wilkins.	1975	Seminal work in fitness industry served as an academic model for educating fitness related professionals.	Considered the gold standard for content validity.

Table 3: International Research Perspective of PFT Qualifications

Reference	Year	Purpose	Main Results/Conclusions
De Lyon, A. T., & Cushion, C. J. (2013). The acquisition and development of fitness trainers' professional knowledge. <i>The Journal of Strength & Conditioning Research</i> , 27(5), 1407-1422.	2013	United Kingdom qualitative study of 11 PFTs on how they acquire knowledge.	Authors concluded knowledge was constructed dynamically through past formal education, models of practice, socially, and through applied experience.
Sipe, C. L. (2012, August). Scope of practice: When is fitness really therapy for mature adults? <i>Journal of Aging and Physical Activity</i> , 20, 131-132.	2012	The author discusses the state of personal training practice and the concern of corrective exercise training with older adults in the U.S., Canada, and U.K.	Authors suggested following European Health and Fitness Association and the Chartered Society of Physiotherapists published guidelines on when to refer clients/patients between the therapist and the trainer.
Al-Shishani, A., Taifour, A. M., & Khasawneh, A. S. (2011). Curriculum quality and academic reputation of physical education colleges in health-fitness job marketing in Jordan. <i>Shield</i> , 6, 70-77	2011	Jordan study where 14 health clubs answered a survey that purposed to rate the best P.E graduates qualified to work in the health fitness business.	Employees graduating in physical education adopting ACSM content were rated best.
Anderson, G., Elliott, B., & Woods, N. (2010). The Canadian personal training survey. <i>Journal of Exercise Physiology</i> , 13(5), 19-28.	2010	This study "examined variability in service provision, knowledge and beliefs of Canadian personal trainers across levels of certification and education."	Results suggested, "that many fitness professionals across all education levels work outside of their scope of practice, although this was more prevalent at lower educational levels."

Reference	Year	Purpose	Main Results/Conclusions
Guo, X. (2009). Investigation and analysis on personal trainers of fitness clubs in Shanghai. <i>Shandong Tiyu Keji/Shandong Sports Science & Technology</i> , 31(3), 89-92	2009	Mixed methods study that investigated the qualifications of personal trainers in Shanghai.	Authors concluded there is confusion amongst trainer qualifications and certification suggesting some unifying standard.
Lloyd, C. (2008). Recruiting for fitness: Qualifications and the challenges of an employer-led system. <i>Journal of Education and Work</i> , 21(3), 175-195.	2008	United Kingdom mixed methods study of employers of PFTs and recruiting qualifications	Social skills and personality were more important than technical skills. Over flooded labor market with numerous credentialing bodies convolutes recruitment.
Forsyth, G., Handcock, P., Rose, E., and Jenkins, C. (2005). Fitness instructors: How does their knowledge on weight loss measure up? <i>Health Education Journal</i> , 64(2), 154-167.	2005	New Zealand qualitative study with 10 fitness instructors on how they approached weight loss instruction.	Approaches for instructors were so different that the authors concluded fitness instructors were not adequately prepared for overweight and obese clients. Further, authors recommended New Zealand needed some method of regulation/competency assurance.

Knowledge Context

To understand the knowledge context on a broad level before narrowing to address any gaps in exercise science curriculum and instruction, the most notable seminal works in the youthful fitness and human performance industry were examined. In addition, the few research studies, organizations, and legislation that have attempted to define competency from the instructor perspective and researcher perspective were reviewed.

The ACSM was founded in 1954 as a nonprofit organization to promote scientific research, education and practical application of sports medicine and exercise science. The book, *Guidelines for Graded Exercise Testing and Prescription* called the most internationally referenced text in sports medicine by its publishers, was created in 1975 to give guidelines for health screening, exercise testing and training of cardiovascular disease patients. Some of the contributors to the first edition (Karl Stoedefalke, John Faulkner, Sam Fox, and Henry Miller) become highly respected research professionals and medical doctors in the field of sports and exercise science. The book uniquely positioned and created an academic plan for developing professionals in the field. Since the first edition, these academic skills have come to be known as KSAs (Knowledge, Skills and Abilities) for various designations of certification by the ACSM in the field of exercise physiology and its closely related exercise science disciplines of kinesiology and biomechanics. Further, recent additions expanded the body of work to include guidelines for apparently healthy (no known medical conditions) and diseased individuals with arthritis, autoimmune disease, cancer, and diabetes. Respectably and most noteworthy, numerous colleges worldwide teach from and refer to this seminal publication on a daily basis.

In response to the call for improved competency of those instructing exercise, NASPE created a task force in 1986 and two years later published standards for college and university based degree programs nationwide (NASPE, 1988). NASPE is a non-profit professional membership association that's mission is to "set the standard for best practices in quality physical education and sport." (NASPE, 2012, website text). NASPE is the largest of the five national associations that make up the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) formed over the past 25 years.

During the same period between 1986 and 1987, two bills attempted to create laws regulating fitness instructor competency failed in California and Wisconsin (ESMR, 1987).

After mounting pressure from government leaders and the public concerned with safety issues brought on by the rapid growth of the fitness industry, the ACSM published its health/fitness facility standards and guidelines as a model of self-regulation (ACSM, 1992). Twenty years later, three new editions have updated scholarly articles and research projects and helped advance the fledgling profession of personal fitness trainer. A criticism of the organization is the vagueness of staff qualification standards. ACSM when listing the standards for those that supervise or serve customers in instruction or counseling suggested, "Professionals must have the appropriate education, certification or experience" (ACSM, 2006, p.26). However, the ACSM does not proclaim what education, certification or experience is "appropriate", thereby leaving the facility owner/operator to set the standard. The 2011 first time passing rate for ACSM CPT (no degree required) was 68% and HFS exam, a fitness instructor certification requiring an exercise science related degree, was approximately 60% (ACSM website, 2013).

The NSCA was formed in 1978 by a group of collegiate strength coaches led by Boyd Epley of the University of Nebraska. Collectively, the strength coaches' mission was to create the legitimacy of the profession and advance athletic performance by the practical application of scientific research. As the association gathered steam and formed a nonprofit, they became known as the main source for strength and conditioning expertise primarily in resistance training techniques. The *NSCA Essentials of Strength Training & Conditioning* textbook became the preparation material for the first nationally accredited "fitness and human performance" certification from the National Organization for Competency Assurance called the Certified Strength & Conditioning Specialist which was created in 1985 (NSCA, 1994). As of 2011, there are three textbook editions expanding the notion of bridging the gap between science and application. The highly respected NSCA has over 30,000 members representing over 50 countries worldwide and has been publishing scholarly research since 1987 in the *Journal of Applied Sport Science Research* and *Journal of Strength & Conditioning*. The passing rate for the NSCA-Certified Personal Trainer (NSCA-CPT) exam is 58% and the Certified Strength and Conditioning Specialist (CSCS) that requires a degree in exercise science related field is 63% (NSCA website, 2013). The percentage of candidates who pass the Scientific Foundations section is slightly higher than those passing the Practical/Applied section. To become certified, a candidate must pass both sections.

Four years after the first fitness and human performance certification was created by NSCA, Anthony Abbott conducted a quantitative study in 1989 as part of his doctoral dissertation to explore the knowledge competency of fitness instructors in the state of Florida

which confirmed the grim hypothesis that the average gym member knew as much as the fitness instructors (Abbott, 1989).

“This study also concluded formal education, not experience, was the most significant factor correlating with a sound knowledge base to include an understanding of exercise safety. Instructor personnel with 15 to 20 years of experience but no formal academic training scored no higher than those with less than a year’s experience.” (Abbott, 2009).

Since this research study was presented at the ACSM annual conference in 1990, Dr. Abbott has spent his entire career working to improve fitness instructor competency. Further, Dr. Abbott suggested that instructors need to achieve knowledge and be evaluated on all levels of learning taxonomy before being cleared to practice. Dr. Abbott has been retained as an expert witness in over forty fitness facility litigations of which over half have been death cases (Abbott, 2009).

The most cited research study using SSCI (Social Science Citation Index) when searching the terms, fitness trainer and education, was performed by Malek et al (2002). This study investigated the educational background of 115 health & fitness professionals between the ages of 20 and 54 via an assessment tool called the Fitness Instructors Knowledge Assessment (FIKA). The FIKA questionnaire was developed by the authors to provide measures of correlation and linear regression for years of professional fitness training experience, education, professional certification credentials and actual fitness knowledge. The Los Angeles County, California men and women who agreed to participate in the test came from 28 facilities consisting of large fitness chains, colleges, and independent gyms of self-employed trainers. Results revealed that most fitness instructors in this study did not have college degrees. Years of experience (ranging from .2 years to 18 years) were unrelated to scores on any of the 5 FIKA scales of nutrition, health screening, testing protocols, exercise prescription or special populations. A regression model found the two best predictors of overall knowledge to be a

bachelor's degree in exercise science and ACSM or NSCA certification. The authors concluded that certifying bodies should require a minimum number of core college courses in exercise science to sit for certification exams. They also suggested that requiring PFTs to be degreed and certified would reduce lawsuits brought by injured consumers.

To the trainer's defense, a limitation of the study could be the difficulty of the FIKA that reported an overall average score of 43% correct. In addition, the study did not elaborate on actual lawsuits from injured consumers against personal fitness trainers. Also, the study did not make any link between trainers' lack of knowledge and/or ability to influence behavior change and client results.

In 2008, Melton et al. conducted a qualitative study of personal trainers in a small, southeast community to elicit instructor opinions of what constitutes a qualified, competent instructor. The authors built the value of an exercise leader (in this case personal trainer) by giving background studies that supported their positive influence of exercise adherence. Further, the authors listed their support for exercise leader academic competencies to include anatomy, biomechanics, exercise physiology, lifestyle and health, chronic disease management, exercise programming and management, health behavior modification and nutritional advice. Eleven certified personal trainers were recruited by one of the authors for this focus group study. Nine of the personal trainers held college degrees. Audio tapes were transcribed and then coded by Ethnograph for qualitative data analysis resulting in four global themes: client selection rationale, client loyalty, credentials, and negative characteristics. The focus groups used client selection rationale to define what and why clients selected a specific personal trainer such as appearance of being fit, specialization or niche of training style and word of mouth reputation.

Client loyalty was summarized by describing that motivational skills, individuality, empathy and social skills were needed to be a successful personal trainer. The consensus on credentials was that trainers should have a standardized written and practical test to be eligible to practice. Lastly, the negative characteristics described were flirting, selling supplements, and incorrect instruction leading to the public view of trainer incompetence.

The authors concluded that the most practical implication of the study was the need for improved interpersonal skills and the value that those skills have on client loyalty and client exercise adherence. They suggested that undergraduate curriculum for personal training related fields should include behavioral and interpersonal communication to better serve clients. In addition, the authors concluded fitness leadership and management courses would also improve professional practice.

Since the sample size was small and conducted within a focus group, some author bias may have influenced the support for improved personal trainer education. However, the study was the first to identify non-typical exercise science curricula and its affect on exercise adherence in clients. Moreover, it created a success template for active personal trainers to see an example of a successful or non-successful trainer. Finally, the study gave an example of another profession; certified athletic trainers, who faced a similar controversy in defining scope of practice and qualifications. The study described the steps athletic trainers took in becoming a licensed allied health profession in 1989 to earn public respect for the profession.

The 2006 Harry Braverman Award of the Labor Studies Division of the Society for the Study of Social Problems honored the qualitative study republished by George (2008) for investigating professionalism in personal training as expert service work. George (2008) found

clients valued the trainer's relational skills in regards to emotional labor as a source of specialized knowledge important to the craft. The motivational relationships where the interactions expanded into deeper emotionally invested communications between client and trainer acted as a form of currency on the trainers' part given to the client through encouragement, attentiveness, and highly personalized instruction (George, 2008).

Studies reflect the standards of knowledge for personal fitness trainers are rote with dispute. Two of the tenets of the structural frame in organizational theory are rules governing performance and the use of technical qualifications for selecting personnel (Bowman & Deal, 2008). In this case, the viewpoint would be rules establishing the scope of practice and the use of specific knowledge, skills, and abilities to qualify as a personal fitness trainer or instructor. Further, the assumptions of the structural frame along with the formal roles that accompany it exist to enhance performance at a specific task or objective. Owens & Valesky (2011, p.15) also communicated that the bureaucratic frame possesses "clear written rules and procedures to set standards and guide actions by a firm hierarchical authority." The authority's role becomes an inspector of quality in adhering to the standards and rules of the system. A concern some structured type personalities in the industry have is related to the safety and well being of clients instructed to take weight loss supplements or instructed in vigorous exercise without an authority figure or organization to provide accountability. One leading industry professional who has been an expert witness in several litigations involving unqualified fitness instructors wrote, "To lessen the possibility of litigation, facility personnel must be capable of thoroughly screening potential members, providing suitable fitness tests, evaluating health assessments and fitness profiles, designing appropriate exercise programs, and attentively supervising member/client

activities.” (Abbott, 2009, p.21). Abbott further concluded that whereas most states require those who paint nails and pet groomers to be licensed to practice their trades; this is not the case with personal trainers and related instructors. This phenomenon warrants further investigation to pinpoint problems and identify clear, succinct solutions to meet the health and wellness needs of Americans along with the professionals that will guide them.

Learning/Motivational Context

More than ever, undergraduate educators need to be innovative in their instruction to influence learning and motivation. The internet offers countless online resources to help. It remains unclear as to how a teacher should develop a student in the field of exercise science because it is neither a well-defined domain of knowledge nor one that has a large body of instructional research. Conceivably, Bloom’s Revised Taxonomy of Educational Objectives could offer solutions for learning, teaching and assessing (Anderson et al, 2001). B.S. Bloom’s taxonomy may be the most cited work in educational research categorizing cognitive processes and dimensions of knowledge. To achieve mastery in the exercise science fitness and human performance professions, students’ knowledge depth must far exceed facts. It must extend into concepts, procedures and insight along an increasing spectrum of cognition. Anderson et al (2001) noteworthy revision to the cognitive process dimension included the ability to remember, understand, apply, analyze, evaluate and create. Experts have a unique order to their knowledge that sets them apart from novices (Anderson et al, 2001). Dr. Richard Feynman, a Nobel Prize winning physicist, described depth of knowledge,

“You can know the name of a bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird... So let us

look at the bird and see what it is doing -- that is what counts. I learned very early the difference between knowing the name of something and knowing something.”

Students must understand that they need to be participants in their own learning rather than spectators to accomplish their specific vocational goal. Without reinforcing clear goals valued by the student, the motivational effort towards accomplishing tasks such as achieving a degree, certification or internship may decline (Mayer, 2011). Therefore, it is important for teachers to engage in dialogue with students to weigh the pros and cons of the value of a college degree and the types of jobs in the industry. It is also vital to empathize with students’ anxiety about the state of the economy, student loans and the ambiguity of exercise science related professions. In response to the nationwide health crisis, the U.S. Bureau of Labor projected rapid growth of the fitness and aerobic instructor professionals in their ten-year projection of 2008-2018 (USBOL, 2009). Thus, a hastily expanding demand for workers in this field exists with instructors that may or may not have the knowledge, skills and abilities to serve a population that desperately needs help to get fit, healthy and/or improve performance. Research has shown that college graduates typically command much higher wages than their less skilled workers do (Carnevale et al, 2011). However, no state or nationwide standard such as a college degree exists to retain employment in the fitness or human performance field (USBOL, 2009). Without an imposed regulation or standard to hire degreed or certified professionals, some fitness business owners may prefer the saved expense of hiring individuals without formal education. Hence, some students are neither working to obtain certification as a validation of competency, nor conducting internship because it is not a requirement to gain employment or start a fitness business.

Data has shown the landscape of employment has changed in regards to full time employment in a college graduate’s field of study. The National Center for Education Statistics

(NCES) conducted a study 4 years after the U.S. recession in 1992-1993 and found that 86% of the 10,000 plus college graduates surveyed were employed full time and only 2% were unemployed (Horn & Carroll, 2001). More recently, Rutgers University conducted a study of 571 graduates nationwide from various 4-year colleges and universities finding that one-third are still not working in the field in which they were educated. The number working in an unrelated field is larger for students who graduated during the 2008 recession –43 percent – compared to just 22 percent for pre-recession graduates (Van Horn & Zuki, 2011). Additionally, half of those graduates are working in a field that did not require a Bachelor of Arts or Science degree. Further, the Gallup Organization also conducted a survey with over 160,000 respondents and found 80% of college graduates were employed full time by employers or themselves (Marlar, 2011). The Gallup Organization noted, “The highly educated are most likely to be working full time for an employer, highlighting the benefits of a good education during these difficult economic times” (Marlar, 2011). According to Georgetown University Center on Education and the Workforce, the 2010 census data shows only a 4.8% unemployment rate and a median income of \$45,000 for physical fitness, parks, recreation and leisure college graduates.

Another example of a study within the learning/motivational context used hands-on, service learning at The University of South Florida by Craig & Eickhoff Shemek in 2009. To improve the pedagogical skills and application skills of degreed, personal fitness trainers entering the marketplace, The University of South Florida conducted a pilot program called USF FIT for exercise science majors. The service-learning program was conducted as a dual classroom and recreation center experience. Service learning has been shown to help students achieve important learning outcomes thus the theoretical approach of this mixed methods

research (Craig & Eickhoff Shemek, 2009). The authors' three main goals of the FIT program were to "move theory into action of training personal training clients, provide practical experience for students that would prepare them for success in future internships and/or full time jobs, and obtain student and clients' perspective to evaluate effectiveness of the program." (Craig & Eickhoff Shemek, 2009, p.9).

Thirty students in course PET 4406 were divided into pairs. Then, the students were matched with 15 low health risk to medium health risk volunteers from the faculty within the College of Education (COE) at USF. The researchers chose pairs of students to foster creativity, social responsibility and added support for the volunteer trainee. The program ran nine weeks after an initial health/fitness assessment and the trainees worked out two times per week for 50-60 minutes. In addition, once per week for 90 minutes, students attended course PET 4406 Individualized Fitness/Wellness Programming where they reinforced KSAs (Knowledge, Skills, and Abilities) of the American College of Sports Medicine Health/Fitness Specialist credential. In addition, the student personal fitness trainers filled out a weekly reflection form with questions that would aid in their professional development and add accountability for planning. As a means of review and feedback, the course instructor reviewed weekly reflection forms and workout plans to help improve student pedagogical skills. Upon completion of the ninth week of training, the student trainers conducted post health/fitness assessments, and provided an award to the volunteer trainees. The authors provided both Example Student Trainer Reflection Forms and Exercise Plans to show their genuine desire for readers to learn from this pilot program and to implement it at other universities. They noted that these documents were omitted in the first publication of the research to save space in another journal. Both formative and summative

evaluations were used at three (initial), 11 weeks (post) and six months (follow up). They included qualitative questions about the trainers KSAs, the program, and the client's fitness results along with a quantitative Likert scale ranking from 1-4 or 1-5 on aforementioned topics.

The results of this program in this ACSM journal were published in the form of six month follow up surveys to students regarding their perceived job readiness/competency on a scale between 1 (strongly disagree) and 4 (strongly agree). Twenty of thirty students responded with scores ranging from a low of 3.22 to a high of 3.78 indicating students agreement with being competent. The qualitative comments also reflected the same perceived above average agreeability by the students. Referring to the study's first published results in *The Exercise Standards and Malpractice Reporter* in 2007, the student's and volunteer trainees (clients) 11 week post evaluation results all ranged above average in regards to student performance and student self-perceived competency (Braithwaite & Eickhoff-Shemek, 2007). In addition, the first published results showed the quantitative data in the form of client health/fitness results where nearly all reduced bodyfat, waist circumference, increased cardiovascular and muscular endurance.

Based on the positive results from the qualitative and quantitative surveys and the author's belief that the main goals and learning objectives were met, they felt the program was a success. The authors suggested shortening the program, reducing the number of student trainers, adding experience mentor trainers to supervise the program and giving a pre KSA and post KSA test as means to improve the study.

Taking a critical look at this study, perhaps a pre and post ACSM KSA test could be administered to evaluate the associated learning objective of the program to obtain mastery of the

ACSM KSAs for Certified Health/Fitness Specialist (HFS). In addition, perhaps non USF COE faculty could serve as volunteer trainees to promote feedback that is more candid. Certified HFSs could evaluate the students' competency to reduce bias from a program participant. To increase the reliability of the results, the same post survey and scale from 11 weeks to six-month follow up could be used to compare any changes. In summary, this study could serve as a successful model for other universities.

Ultimately, students are responsible for their attitude and choice to achieve higher education, certification, and/or internship. Bad attitudes drive down motivation and negatively affect cognitive factors in learning (Rueda, 2011). Likewise, undergraduate exercise science teachers can influence attitude change by reframing instruction to include construction where students learn by exploration to keep themselves interested and motivated. Learner Centered instruction is a self-discovery model where students are encouraged to explore and construct their own meaning to care for the needs and concerns of individuals (Schiro, 2008). Schiro's four visions of curriculum are: scholar academic, social efficiency, learner centered and social reconstruction. Scholar Academics value strong content and conceptual knowledge built into a specific academic discipline (Shiro, 2008, p.4). Yet, lacking uniform standards, the domain of fitness and human performance instruction is broad and schizophrenic. Perhaps exercise science students with higher aptitudes in math and science have a strong preference for a systematic approach with proven methods and strategies consistent with social efficiency theory (Schiro, 2008). Learning the "how to" for the job was labeled procedural knowledge by Anderson et al (2001) and has value for those involved in instruction, teaching and coaching. Yet, wellness and athletic instruction does not have set procedural methods that work in all situations, so students

must learn insight by modeling and watching others. Lastly, “Social Reconstruction ideologists believe that truth and knowledge are based in and defined by cultural assumptions” (Schiro, 2008, p.6). The 21st century fitness professional needs specific training and teaching instruction.

Consider Harvard Professor, Tony Wagner’s, 21st century survival skills for students to be successful: critical thinking and problem solving, collaboration and leadership, agility and adaptability, initiative and entrepreneurialism, effective oral and written communication, accessing and analyzing information, and curiosity and imagination (Wagner, 2012).

Summarizing those skills, one may suggest the essence of a successful, educated person is one who stays open minded while working together on projects to creatively solve problems and communicate the solution in ways that inspire others to do the same. Therefore, role-playing and specific job tasks could be arranged as educational objectives to create a climate to learn. When tasks are designed to offer opportunities for students to be successful, adaptive self efficacy beliefs motivate students (Rueda, 2011.) The body of research on social cognitive theory by Albert Bandura suggested that an individual's knowledge acquisition can be directly related to observing others within the context of social interactions, experiences and environments.

Undergraduate teachers can provide themselves as models for students to imitate or give learning experiences with other experts. Moreover, The Chronicle of Higher Education eloquently listed the benefits to interns as “academic credit, salaries, benefits, practice in disciplinary skills, material for disciplinary reflection, exposure to the habits of professional practice, increased self-awareness, the opportunity to exercise civic responsibility, expansion of social and professional networks, and résumé building” (Westerberg, C. & Wickersham, C. 2011). Thus creating applied experiences for students may enhance deeper learning of new knowledge. Further, it may

also help students articulate how their ability to apply knowledge to deliver instruction, analyze, evaluate and create programs is more valuable than other job candidates without degrees and certification. Identifying the risks of improper training and proposing solutions to students can prepare them to serve society when the standard, regulation, and demand for qualified and motivated job candidates exceeds the current surplus of pseudo-professionals.

It seems that communicating the value of the knowledge obtained by a degree, certification and internship opportunities would be necessary to sustain the fiscal health of an exercise science program within a university. Additional benefits of promoting higher education, certification and internship are preparing students for hire, attracting future candidates for the degree, obtaining research grants, and linking businesses in the community as partners in teaching.

Organizational/Cultural Context

While the number of fly-by-night certifications has continued to increase in the personal fitness training profession, some have brought legislative bills forward to create a state license but have failed (E.S.M.R., 1987 about California and Wisconsin; NBFEE about Maryland, New Jersey & Georgia bills, 2008; and Florida Senate 2012 & 2013). To a layperson, it may seem logical that standards and regulation would help an industry fraught with individuals lacking formal training in instructing others how to improve their health and fitness. However, not everyone stands to gain from tightening control. When explored through the political frame of organizational theory, the personal training industry is a highly charged, billion-dollar machine of certifications, free enterprise and services that wield power over those attempting to influence licensure.

The assumptions that guide the political frame perspective recognize coalitions or interest groups with varying perceptions of reality, values and beliefs (Bolman & Deal, 2008). The American Council on Exercise (A.C.E), which possesses one of ten identically named “Certified Personal Trainer” credentials by The Institute of Credentialing Excellence (I.C.E) believes that the fitness industry is self regulated and does not contain a risk to public health (A.C.E, n.d.). A.C.E. further iterated that the criterion of an industry’s self-regulation is whether a risk exists to public health. A.C.E. noted on their website that public safety risks are explored by legislatures during a process called sunrise review for potential licensed entities. As vested interested groups, it does not appear that any certification companies have endorsed licensure.

On the other hand, there are key stakeholders who do support licensure. Dr. Anthony Abbott, renowned industry expert and American College of Sports Medicine Fellow, has served as an expert witness in over twenty death cases (Abbott, 2009). He wrote, “Too frequently individuals are injured as a result of certified trainers not being truly qualified professionals; and too often, individuals die while pursuing a healthier lifestyle because of insufficient screening, ineffective instruction, improper supervision and/or an inadequate emergency response” (Abbott, 2009, p.21). One litigation case involved a 37-year-old physician who was pushed so much by a personal fitness trainer that he developed rhabdomyolysis; a life threatening condition occurring from exercise overexertion (Springer et al., 2003). How many people have to be injured or die before the industry acknowledges a risk to public health?

Bolman & Deal (2008) asserted, “Enduring differences make conflict central and power the most important asset between competing stakeholders jockeying for their own interests.” One interest certification companies want to protect is revenue from thousands of personal

trainers who earn and/or buy credentials hoping to differentiate themselves in the marketplace. In addition, membership and continuing education courses also contribute to the bottom line. This is not to say that the capitalist fitness marketplace is a greedy revenue hound. Rather, the outcome of revenue growth is merely a byproduct of an unregulated system. What business owner or certifying body would want to see a decrease in revenue and resources should a license be created that limits or entirely voids the value of their fitness certification?

In fairness to certification companies who desire to operate with integrity, the problem of licensure is divergent and not easily understood. Owens & Valesky (2011) defined adaptive leadership as requiring collaboration between many individuals over time. It is time the industry adapts to meet the needs of those that desire to become fitness professionals and consumers who deserve respect and safety for their well-being.

It appears that the key players in industry certification/education have hid under the auspice of the term accreditation. As aforementioned, the number of identical nationally accreditations of certified personal trainer is growing; currently ten, and does not evaluate content in its practice of determining credentialing. Rather, the standards of accreditation are written to evaluate a program's processes for administration and test development (I.C.E., n.d.) Anyone meeting those standards can meet the criteria to become nationally accredited. In an attempt to seek understanding of this phenomenon, one can explore the Institute of Credentialing Excellence website that states,

“Certification organizations that submit their programs for accreditation are evaluated based on the process and products, and not the content; therefore, the standards are applicable to all professions and industries. Program content validity is demonstrated with a comprehensive job analysis conducted and analyzed by experts, with data gathered from stakeholders in the occupation or industry.”

How does the consumer of fitness training services (aka – the client) or future personal fitness trainers know which of the ten organizations to select for certification? In addition, this number may double or triple in the future if anyone can pay the fees and meet the criterion for national accreditation. Imagine if there were ten different nationally accredited organizations offering credentials to family practice doctors with no oversight for safety. A sick patient would not know where to get accurate, safe guidance. Owens & Valesky (2011) suggested the widespread tendency in organizations is to satisfice or meet the minimal acceptable level of performance. Unfortunately, the fitness industry is still willing to satisfice uninformed consumers and personal fitness instructors.

The level of conflict transpiring from people opposed to the ambiguous nature of the certified personal trainer national accreditation is at an all time high. Kenneth Thomas', "Conflict and Conflict Management", in *The Handbook of Industrial and Organizational Psychology* identified five principal perspectives in conceptualizing conflict. They are competitive behavior, avoidance, accommodation, sharing, and collaboration (Owens & Valesky about Thomas, K., 2011). This author believes the industry exhibits a highly competitive nature spinning off numerous specializations of certifications in an attempt to differentiate competency and value. The industry shows a negligent avoidance of the reality of injuries and wrongful death caused by personal fitness trainers. The industry collectively demonstrates an accommodation by certifying companies to the professional outcry by educators and educated personal trainers to reform the industry by pointing towards accreditation as its checks and balances for regulation. However, in order to ensure the well-being of the public, the industry must unite to create a sharing orientation then collaborate for the final step in resolving the

conflict. It may take a third party authority or coalition to mediate a collaborative outcome. Until then, the continued avoidance behavior is tarnishing the spirit of the fitness profession to care for and positively influence individuals' health. The anecdotal evidence validating this claim is found by asking the family members who have lost loved ones because of wrongful death by unqualified personal fitness trainers.

Another perspective to consider the culture of the fitness industry is to close your eyes and describe what image or associations come to your mind when you hear the words, personal trainer. Most likely, you are envisioning a muscled tan person complete with big biceps, rippling abs and a shaved body shouting instruction to a person working out. When picturing strength & conditioning coaches (aka sports performance instructors), some visualize a bald person with a go-tee and cartoon-like musculature. These types of stereotypes are attributed to the original symbols and code of the personal training industry. Furthermore, one's perspective may be influenced by the TV body images of what a personal trainer looks like such as Tony Horton (P90X) or Julian Michaels (Biggest Loser). Thus, one of the problems related to improving the perception of the personal training profession and its legitimacy is the unrealistic symbolic frame typecast of what a trainer looks like and the myth that he or she is qualified based on their superficial appearance (Melton et al., 2010 and 2011; Madeson et al., 2010; Sartore & Cunningham, 2007).

Bolman & Deal (2008) suggested that people find direction and even anchor hope and faith in symbols or appearance as a basic assumption of the symbolic frame of organizational theory. Moreover, research by George (2008) used the term physical capital in describing this phenomenon. Some trainers interviewed in George's (2008) study downplayed the importance

of appearance and emphasized the value of their education and certification, but nearly all acknowledged having a fit body was one of the primary, and perhaps clearest, ways to convey their professional expertise and to promote their skills.

Other qualities of Bolman & Deal's (2008) symbolic frame are the depiction of heroes, heroines, stories, and fairy tales. Many of the first personal trainers were bodybuilding champions (i.e. heroes). Arnold Schwarzenegger, six-time Mr. Olympia parlayed his physical capital as a bodybuilder into movie stardom and later Governor of California. His fairy tale physique was achieved with hard work; yet he also acknowledged using massive amounts of anabolic steroids (Schwarzenegger, n.d.). However, it is true that Arnold's symbol or physique inspired many to workout and improve their own fitness. Arnold was even the former chairperson for The President's Council on Physical Fitness and Sports in the 1980's (DOHHS, n.d.). Arnold's qualifications of being a bodybuilder and movie star had perceived value whether he possessed formal education or not.

Unrealistic titles are associated with personal trainers along with incorrect hypotheses that trainers must eat grass and birdseed in order to look physically fit and all spend hours of training each day in order to achieve their sculpted body. One anecdotal theory further escalating this naivety is the idealistic expectation that trainers who look the part know what they are doing, have achieved some education in the field, and must have earned some type of license or certificate of competency. Yet, no state in the U.S. has any minimum standard to practice or regulation of those that earn incomes as personal trainers (NBF, 2008).

The premise of social cognitive theory is that learners acquire knowledge through the observation of models in society (S.C.T. definition from Wikipedia, n.d.). Mayer (2011) added

that transfer is the effect of prior learning on new learning or performance. Models acting in the profession as personal trainers or coaches are transferring poor procedural and instructional knowledge. With the lack of standards in a field youthfully defined, it is not surprising that this knowledge may be flawed and clients may be in danger of achieving poor results or worst case, death.

It would be ignorant to say a degree alone or certification alone is what is required to be competent. Rather, a degree and/or certification do show some level of competency. Likewise, whether someone has 15% bodyfat or 5% bodyfat also does not define an individual's integrity or knowledge. Further investigation is warranted to better define what constitutes competency beyond the symbolic appeal of an individual's personal appearance. The measure of a man is more than the size of his bicep.

CHAPTER 3: METHODOLOGY

The purpose of this study was to identify what Central Florida, Personal Fitness Trainers believe the qualifications should be for professional practice. In addition, the purpose of the study was to determine if the PFTs' level of education, the type of certification, and/or the years of experience one has make a significant difference in wages. The specific research questions are as follows: Do Central Florida, personal fitness trainers who possess an exercise science related degree and/or certification earn significantly higher wages than those with less education or lack certification? Are there strong relationships between education, certification and wages amongst Central Florida, personal fitness trainers? What knowledge, skills and abilities do personal fitness trainers possess and believe is critical to ensure they are fit to lead the battle in restoring the personal health of America?

After receiving IRB (Institutional Review Board) exemption status, a 21-item survey was developed by this author and a faculty member of University of Central Florida. The survey captured the demographics of Central Florida, Personal Fitness Trainers including items such as: level of education, certification, course history, income range, and employment type. Additionally, Likert scale items and open response questions were developed to capture their attitudes, opinions and beliefs about topics such as: level of education, certifications, job analysis questions regarding knowledge, skills and abilities, and opinions of regulation through a national board examination and/or licensure. To ensure content validity, questions regarding college coursework in exercise science degrees were modeled from (Elder et al, 2003) results. In addition, the question asking respondents to rank personal fitness trainer characteristics was

modeled from the results of Melton et al., (2011), Madeson et al. (2010) and Kravitz (2010), Melton et al, (2010) and George (2008).

Sampling Procedures

A purposive sampling strategy was engaged to gather a sample of Central Florida, Personal Fitness Trainers and related instructors. First, Google™, Yahoo™, and Yellowbook™ email address lists were searched using the terms, personal trainers or fitness centers and the following five counties (Brevard, Lake, Orange, Osceola, and Seminole County). This search initially returned 183 business names. After digging through the business websites, business Facebook™ sites, or directly using the contact email on the business listing; an additional 13 email addresses were located. A total of 196 individuals were invited to participate in an online Personal Fitness Trainer survey created using Qualtrics software.

Data Analysis

Quantitative data from completed surveys were exported from Qualtrics into Excel and subsequently imported into a statistical software program for analysis. Data in this study were analyzed using SPSS Statistical software. In addition, this author and a faculty member within the exercise science program conducted qualitative coding of open response questions to crosscheck for consistent themes. Finally, a graphic representation of the KSA open response question results was created using Wordle™. This online program generates “word clouds” giving greater prominence to words that appear most frequently in the text. The program, removed common words such as: is, and, or the. Additionally, the software quantified the number of times words were used.

Quantitative data regarding demographics included examining Central Florida, PFT educational coursework history of those that had Bachelor's degrees or higher.

Research Question Recoding of Data

In order to perform a Three-way ANOVA and Pearson's product-moment correlations, data needed to be recoded into groups that would best represent the sample size. Participants who reported education, experience, certification and 2012 income were selected for SPSS data analysis. This reduced the sample size to 32. Table 4 below reflects the categories.

Table 4: Recoded, Research Data Variables

Variables		Value Label	N
Highest Level of Education	1	High School	3
	2	Associates Degree	5
	3	Bachelors Degree	15
	4	Masters Degree	6
	5	Doctorate Degree	3
Certification	1	Degree Required / (ICE) Certification	12
	2	(ICE) Certification / Non Degree Required	13
	3	Non (ICE) / Non Degree	2
	4	No Certification	5
Experience Level	1	0 to 4 years	10
	2	5 to 10 years	11
	3	11 to 15 years	5
	4	16 to 20 years	3
	5	> 26 years	3
	6	> 26 years	3

Note: Institute for Credentialing Excellence (ICE)

The education groups listed as ordinal variables were as follows: 1. High School, 2. Associate Degree, 3. Bachelors Degree, 4. Masters Degree, and 5. Doctorate.

Participants were grouped according to their highest-ranking certification if they held more than one certification. The certification groups in categorical variable were listed in four categories: 1. Degree required certifications (NSCA Certified Strength & Conditioning Specialist (CSCS) & Health Fitness Specialist (HFS); 2. ICE nationally accredited / Degree non-required (American Council on Exercise (ACE), National Academy of Sports Medicine (NASM), National Exercise Trainers Association (NETA), ACSM Certified Personal Trainer CPT, NSCA CPT, National Federation of Professional Trainers (NFPT), and National Council on Strength & Fitness (NCSF); 3. Non-ICE nationally accredited certifications and non degree

required (Aerobics and Fitness Association of America (AFAA), United States of America Weightlifting (USAW), National Personal Trainers Institute (NPTI), and CrossFit™); and 4. No certification held.

The experience groups of those who reported 2012 income was listed into 5 categories as follows: 1. 0-4 years, 2. 5-10 years, 3. 11-15 years, 4. 16-20 years, 5. 21-25 years and 6. > 26-30 years. No trainers who reported 2012 income held between 21-25 years of experience. Hence, it was omitted from Table 4 above. Finally, the participant's income for 2012 was the dependent continuous variable.

CHAPTER 4: FINDINGS

The quantitative and qualitative findings of this research are presented in three main sections. They are as follows: Demographics, Research Question Findings, and Attitudes/Opinions/Beliefs. The goal of the demographic findings was to understand our samples' education, experience, certification(s), and 2012 income. With these results, the data could be used to answer the research questions in respect to the sample. Finally, the hope of the authors was to examine Central Florida PFTs' Attitudes/Opinions/Beliefs about certification, internship and licensure in order to align the higher education, global program goal of helping students achieve jobs and to further understand the requests by practicing professionals to improve the integrity of the industry.

Demographics

Forty-eight surveys were completed revealing 31 men and 17 women with an average age of 36 and a range of 21-63 years old. The majority of respondents practiced as personal fitness trainers in private fitness studios (19), commercial gyms (10) and outdoors (7). Other facilities included a university recreation center, a hospital wellness center, Crossfit™ training facilities, a golf academy, country club and a home garage. Thirty four of the 48 respondents held a Bachelor's degree or higher and had an average of 11.2 years of experience as personal fitness trainers or closely related instructors holding credentials as performance enhancement instructors, strength and conditioning specialists, and even a Pilates instructor. Within the 41 respondents who listed their educational level, 10 held degrees unrelated to exercise science and six noted that the degree was not offered at their college at the time of enrollment. Five

individuals in the survey reported not being certified or degreed. Most held multiple certifications. Of the group, three were still students and had less than one year of experience employed or self-employed as personal fitness trainers. For the purpose of recoding certifications, the first listed certification was counted as highest-level certification. The average 2012 income of the sample that reported actual fitness related income was \$42, 893. The average of the top 10% of 2012, USBOL OES Florida Fitness Trainers and Aerobic Instructors was \$40,144. Thirteen of the individuals responding to the 2012 income question reported not having health insurance.

Of the respondents from the U.S. Bureau of Labor 2010 job analysis, only 25% employed were required by their employer to hold Bachelor's degrees, 21% some college, no degree and 17% high school diploma. Thus, the authors recognize the participants in this sample responding to this original study are highly educated, credentialed and experienced with 2012 average incomes in the top tenth percentile of Florida Fitness Instructors and Aerobic Instructors.

Educational History of PFT Coursework

The course options taken as educational history for respondents were modeled from (Elder et al, 2003) results gathered from 119 institutions offering exercise science degrees. Elder et al. found 90% of the institutions offered content areas in anatomy, exercise physiology and biomechanics and 69% nutrition. The participants in this survey took the most courses in psychology and nutrition. Interestingly, Table 5 below shows the lowest amount of courses was taken in biomechanics. Biomechanics, the study of human movement, is directly related to exercise instruction. This phenomenon concurs with Ives & Knudson (2007), who concluded professional organizations and colleges have a content gap in the amount of biomechanics

courses and over-emphasize exercise physiology. Some other courses written in by respondents were physics (2), legal issues in sport (1), and a specific course on strength training and plyometrics (1).

Table 5: Central Florida, PFTs' Coursework History

Course	1 course	2 courses	3 courses	4 courses	5 or more courses	Number of participants	Mean	Total Courses
Anatomy	12	16	4	5	2	39	2.21	86
Exercise Physiology	16	8	7	4	1	36	2.06	74
Kinesiology or Biomechanics	16	6	6	2	1	31	1.9	59
Business Marketing	15	9	3	1	3	31	1.97	61
Psychology or Human Behavior	11	13	9	5	3	41	2.41	99
Nutrition or Related	11	13	6	4	4	38	2.39	91
Health/Fitness Assessment & Screening	13	15	6	2	0	36	1.92	69
Communication	17	12	1	2	4	36	2	72
Other	2	2	0	0	1	5	2.2	11

Research Question Findings

The first research question analyzed was: Do Central Florida, personal fitness trainers who possess an exercise science related degree and/or certification earn significantly higher wages than those with less education or lack certification? After accounting for interaction between education, certification and experience; no significant interactions were found at $p < .05$ using a Three-way ANOVA test. The result did show that there was a statistical significant difference in salary between those with 0 to 4 years of experience and those with more than 26 years of experience, $p = .038$. Those with more than 26 years of experience earned significantly more income than those with less than 4 years of experience. No other significant differences

were found based on experience. Additionally, an ANOVA test for interaction between education and 2012 income was conducted. There were no statistically significant differences in 2012 income based on education level, $F(4, 26) = 2.283, p = .086$

The second research question analyzed was: Are there strong relationships between education, certification and wages amongst Central Florida, personal fitness trainers? A Pearson's product-moment correlation was run to assess the relationship between personal fitness trainers' 2012 income and experience in the profession. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk ($p > .05$), and there were no outliers. There was a moderately strong, positive correlation between income earned in 2012 and the participants experience, $r(45) = .515, p < .003$, with experience explaining 26.5% of the variation in 2012 income.

The third research question examined qualitatively was: What knowledge, skills and abilities do personal fitness trainers possess and believe is critical to ensure they are fit to lead the battle in restoring the personal health of America? Central Florida, PFTS were asked to comment on, "What specific (KSA) knowledge, skills and abilities should a (PFT) Personal Fitness Trainer possess? Many comments reinforced their prior ranking of what we self selected such as anatomy, physiology, and nutrition. Others used the terms, "people skills", "social skills", and "business skills." One respondent candidly responded,

"As an older student going back to school (I'm 33), as I look around campus it seems as though this generation of students has a certain lack of social skills. Everyone is on their phones tweeting, texting, and Facebooking... I would hire someone who has people skills and ambition to learn who may only have a certification over someone who has a degree and multiple certifications with no people skills..."

The Wordle™ below in Figure 1 is a graphic representation of the KSA feedback. The words knowledge, skills, and abilities were removed from the word cloud in addition to other common words such as I, the, and is. The survey respondents used the largest words in the footprint most often in the comments.

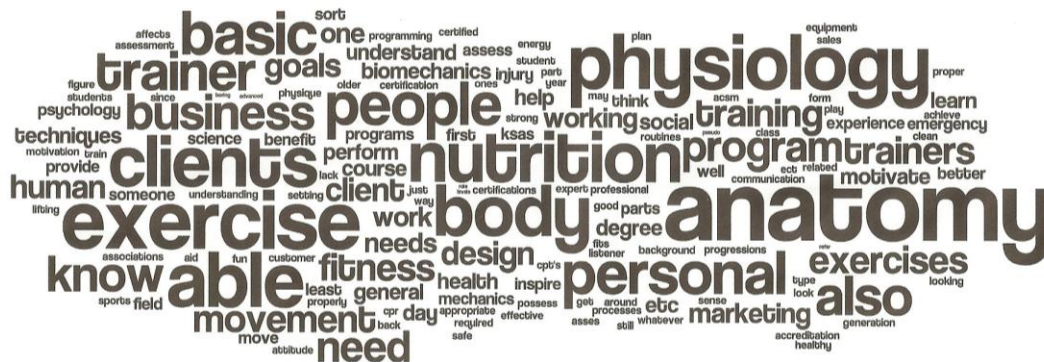


Figure 1: Central Florida, PFT KSA Wordle™

Attitudes, Opinions, & Beliefs Regarding Degree, Certification, Internships & Licensure

Participants of the survey were asked to fill out seven Likert scale questions in regards to their level of agreement with questions on exercise science or related degree (if they possessed one), certification, internship and licensure. A majority of respondents, 72%, agreed or strongly agreed that their exercise science or related degree prepared them to work in the fitness industry. However, only 54% of them agreed or strongly agreed personal fitness trainers should be required to earn a degree in order to practice the profession. A smaller number of respondents, 23% neither agreed nor disagreed and 23% disagreed or strongly disagreed. This question had

the most variance of any of the Likert scale items (1.7). The majority of respondents, 77%, agreed or strongly agreed that a personal trainer certification should be a graduation requirement as part of any exercise science degree. Further, 73% agreed or strongly agreed that a certification is helpful in gaining employment, 89% agreed or strongly agreed that an internship prepares future trainers to understand the knowledge, skills and abilities necessary for personal fitness trainers and 66% agreed or strongly agreed in a national board exam to achieve licensure to practice in the field. Interestingly, the majority of respondents, 60% agreed that an exercise science related degree helps earn higher compensation in the field while 19% disagreed or strongly disagreed and 21% neither agreed nor disagreed. When cross tabulating level of education to the questions regarding compensation and degree requirement; there was a significant difference ($p=.02$ and $p=0.00$ respectively) between the level of education and agreement in needing a degree to practice and earn higher income.

Rank Results of PFT Characteristics

Table 6 below shows how PFTs rank the importance of seven characteristics of personal fitness trainers. Findings show that Central Florida, PFTs ranked exercise science knowledge highest followed by interpersonal communication skills and physical appearance. Likewise, Sartore & Cunningham's (2007) results depicted personal trainers' opinion and preference that fitness trainers and group exercise instructors' expectation that they ought to look fit and attractive even if they are qualified academically. Madson et al. (2010) found woman using personal trainers feel that relationships, trainer personality qualities, fitness outcomes and motivation were more important than education criteria. Kravitz (2010) concluded personal trainers need a wide knowledge base, a caring attitude to serve others, enthusiasm and a love of

learning. Additionally, Central Florida, PFTs wrote in the character traits of motivation (2) and honesty (1) as most valuable.

Table 6: PFTs’ Job Characteristics Rankings

PFT Characteristics	Ranking							
	1	2	3	4	5	6	7	8
Personal Appearance	4	3	11	8	8	3	8	1
Interpersonal communications skills	6	22	9	4	3	2	0	0
Exercise science knowledge	26	8	5	4	2	1	0	0
Sales Ability	2	3	1	8	8	8	16	0
Marketing and business organizational skills	1	1	3	2	8	22	8	1
Customer Service	5	3	8	12	9	8	1	0
Psychology	1	5	9	8	8	2	12	1
Other?	1	1	0	0	0	0	1	43
Total	46	46	46	46	46	46	46	46

Certification Organization Ranking Results

Participants of the survey were asked to write in and rank their top five organizations for personal fitness trainer or related certifications. Then, data were exported to Microsoft Excel™ from Qualtrics and certifications were renamed as the organization in which they came from. For example, both NSCA CPT and NSCA CSCS was reorganized as NSCA as the organization. Then, each column was sorted alphabetically so the number of each vote for corresponding organization could be counted. Finally, percentages ranking each organization from top choice to fifth choice could be calculated. Many respondents did not rank beyond three organizations and only 12 of 48 survey respondents ranked five organizations.

Results from this sample showed the NSCA was the first choice (37%) for Central Florida, Personal Fitness Trainers. Further, NSCA was ranked first or second 65% of the time by respondents. The ACSM and NASM were both ranked first or second choice 45% of the

time. Overall, NASM was the second most selected, ACSM took third, ACE ranked fourth and AFAA fifth overall. Perhaps based on a few strong opinions by survey respondents, International Sports Sciences Association (ISSA), Functional Movement Systems (FMS) and USAW were represented in the results.

Table 7: PFTs’ Certification Organization Ranking

First Choice	Second Choice	Third Choice	Fourth Choice	Fifth Choice
NSCA = 37%	NSCA = 29%	NASM = 26%	ACE = 14%	ACE = 15%
NASM = 23%	ACSM = 29%	ACE = 18%	ASCM = 14%	ACSM = 15%
ACSM = 16%	NASM = 22%	NSCA = 15%	NSCA = 9%	NSCA = 8%
ACE = 9%	FMS = 7%	ACSM = 15%	NASM = 9%	AFFA = 8%
ISSA = 5%	ISSA = 5%	AFFA/USAW = 6%	AFFA = 9%	Others = 8%

The Institute of Credentialing Excellence (I.C.E.) recognizes four of the top five overall choices selected by Central Florida, Personal Fitness Trainers as nationally accredited certifications. Aerobics and Fitness Association of America (AFAA) is not a nationally accredited organization possessing a fitness certification. National accreditation is “the process by which a credentialing or educational program is evaluated against defined standards and is awarded recognition if it is in compliance with those standards (I.C.E. website, 2013). There are 13 fitness and wellness organizations that currently are nationally accredited of which ten have the identical credential, certified personal trainer. Confusion remains as to what the criterion is for national accreditation. Forty percent of the survey respondents in this study responded “no” when asked if they were aware of the criterion. Further, when asked to elaborate with their thoughts on the number of nationally accredited organizations the overwhelming qualitative response was “too many exist.”

Final Advice from Central Florida, PFTs

The author would like to commend those that took time to complete the comprehensive, online survey. The average time was 21 minutes to complete. Some spent even more time in elaborating their thoughts. A few respondents who were very passionate about this subject even reached out offering help in any way and asking to see the results of the survey. Many of the PFTs offered extensive advice and even a taxonomy of best practices. Some of the author's favorite comments were as follows:

“Truly take the time to learn your craft. You will be in a field that deals with people. Take the time to learn people.... types of personalities, approaching techniques, and make the ability to sell your last quality to develop.”

“You may think that you're in the fitness business helping people, but when you realize that you're REALLY in the marketing, sales and relationship business helping people with their fitness, that's when your business will begin to take off!”

“Continuing your education and experience in all aspects of exercise, as well as, the business of exercise and fitness are keys to your long term success.”

CHAPTER 5: CONCLUSIONS

Higher education institutions are a supplement to student learning and not a meal replacement. Knowledge as a PFT does not begin and end with the culmination of a degree in exercise science. In addition, professionalism is not achieved with a certification or license to practice; but over a lifetime of gained wisdom and shared experience. Evolving problems of practice exist in all industries and are ever-changing. Thus, the solutions to the complex problems of PFTs' qualifications are not easily understood. Research has offered suggestions for knowledge attainment through higher education, certification by nationally accredited organizations, and personal characteristics of successful professionals as best practices for differentiating value in the marketplace. Exercise science knowledge was ranked as the most important KSA for Central Florida, PFTs followed by interpersonal skills and personal appearance. In addition, 60% of Central Florida, PFTs agreed that an exercise science degree helped in earning higher compensation. However, the ANOVA test of the levels of education with 2012 income did not show any significant difference whether someone had a high school education or a doctorate. In other words, PFTs' believed a degree would help earn significantly higher income but this hypothesis was proven otherwise in this sample.

Further, the results from the sample of Central Florida, PFTs infer they desire more stringent qualifications for entry into the profession. While 54% of the participants agreed or strongly agreed a degree should be required, 66% agreed or strongly agreed a national board exam to obtain a license should be required. Since 73% of participants agreed or strongly agreed that a certification is helpful in gaining employment, this author supports a requirement for undergraduates in an exercise science program to sit for a national accredited certification the

last semester before graduating. Further, as 89% agreed or strongly agreed that an internship prepares future trainers to understand the knowledge, skills and abilities necessary for personal fitness trainers, this author concludes that an internship has great value in gaining experience and relationships for new jobs. Understanding the dilemma in large universities with high volumes of students trying to find internships, the University of South Florida service-learning project is a good alternative model to replicate and achieve hands-on experience. The results not showing a significant difference at $p < 0.05$ in 2012 income based on level of education is too small and not accurate to generalize that students who base their hopes of higher income on an exercise science degree in the Central Florida marketplace cannot hold high confidence of a lucrative return on their investment. Other factors such as interpersonal skills, business marketing and sales skills influence the attainment of new clients and the resulting higher income. A moderately strong positive relationship existed between experience and 2012 income $r(45) = .515$. Those practicing for over 26 years earned significantly more income than those in the first four years of their career. If one sticks to improving professional practice and lifelong learning, one is bound to achieve higher income.

Limitations of Study / Ideas for Future Research

The sample size was a limitation in this study and may only be a biased representation of a highly educated, credentialed, and experienced group. Expanding the study to other densely populated communities with personal fitness trainers may show contradictory results. PFTs who invest in a four year exercise science degree want to be rewarded with the pride of a well respected profession; qualified peers that know how to take care of clients, patients and athletes; and wages that return the investment of higher education. It is disheartening for new graduates

who have worked hard to attain new knowledge, skills and abilities when they lose income to a charlatan trainer undercutting prices to an uninformed, unprotected consumer. This leads one to ask if other professions that adopted a national board exam and/or license have seen significant increases in income during the years following.

The public perception of the academic qualifications needed for personal fitness trainers may be over-estimated or relatively unknown. Does the general public assume personal fitness trainers have a license to practice as a result of meeting specific academic standards? Perhaps a review of literature on the research revealing litigation against unqualified personal fitness trainers would expose the general public to the increasing safety risk and influence the passing of a bill to license the profession. However, it is unknown what unintended consequences would result from governmental oversight of a license for PFTs. It is unclear how a license would affect marketplace wages, opportunity, and the possibility gaining recognition as insurance reimbursed, medical providers.

Recommendations

An August 2013 study by Chegg and Harris Interactive of over 2000 U.S. college students and 1000 hiring managers revealed a disconnect between students perceived proficiency of soft skills in the areas of leadership, communication and organization. Moreover, 82% of hiring managers thought recent graduates should have completed a formal internship in their field of study and 91% wanted to see their hires participate in extracurricular activities related to the their field. In other words, PFTs can benefit from internships and need to engage in practicing what they preach in the area of health and fitness. This original research showed a

positive correlation between experience and income. Overtime, looking the part and playing the part seems to earn a financial return, not simply a degree.

Exercise science undergraduate programs can create a great life experience for students by following the advice of those practicing in the field who suggested interpersonal skills and business skills instruction. Additionally, research revealed that programs that provide hands on experiences construct a motivating atmosphere conducive to learning; supply updated curriculum related to job characteristics; and present instructional strategies that engage community and relationship building.

Whether a national board exam or license for PFTS in the fitness/human performance field becomes a reality or not, the attainment of a four-year degree and certification through nationally accredited organizations is a credible benchmark of expertise. Additionally, the endeavor of a four-year degree shows commitment, devotion, and perseverance – all characteristics of developing professionalism.

The learning opportunities exercise science degree programs offer must match the needs of the fast changing marketplace. Students must distinguish precisely how to uniquely differentiate their higher-level knowledge, skills and abilities over other less credentialed candidates for higher paying jobs to return an investment on higher education. Specifically, this research along with Ives & Knudson (2007) recommended exercise science graduates need to be prepared to demonstrate procedural knowledge in assessment and biomechanics instruction with expert skill. The character traits of interpersonal communication and understanding of human behavior/psychology can be developed more efficiently through role-play experience in and out of the classroom via internships or service learning projects as undergraduates.

In a field struggling to mature with an expectation of high growth in employment and an intense need for qualified instructors to lead the battle to overcome our nationwide obesity epidemic, are we setting the example? As exercise science educators, we must take responsibility for providing the utmost standards of professionalism that far exceeds individuals romancing the idea of becoming a personal fitness trainer overnight. Acknowledging the reality that achieving an exercise science degree in itself does not guarantee financial success in this field, it does provide a depth of knowledge to serve clients, patients and athletes with a high level of integrity. Proverbs 10:9 from the New International Version of the Holy Bible says, “Whoever walks in integrity walks securely, but whoever takes crooked paths will be found out.” Thus, this author believes programs that help students focus on integrity development to serve others rather than a life that measures success solely on income. Stephen Covey, renowned leadership author of *The Seven Habits of Highly Effective People* reminds us to, “Begin with the end in mind.” What kind of impact will your life have on others?

A.C.C.E.S.S. is an original acronym developed by this author that stands for: Applied Curriculum for Careers in Exercise Science Studies. Therefore, based on the results from practicing PFTs in central Florida and in the spirit of Covey’s 7 Habits; this author has offered an updated curriculum plan for undergraduate program coordinators to help their students *A.C.C.E.S.S.* quality jobs when they enter the marketplace and effectively differentiate their value over non-degreed, non-certified instructors. In agreement with authors, Ives & Knudson (2007), few undergraduates in this field go on to conduct clinical research or university research. Thus, it may be more appropriate to position the degree as “applied” and thus devote a considerable amount of time towards hands-on learning in the area of biomechanics. Further, the

curriculum objectives and instructional strategies of the A.C.C.E.S.S. model have intended outcomes to represent the job characteristics of PFTs and related instructors by encouraging more skill in interpersonal communication, personal fitness and professional development. Finally, specific recommendations for undergraduate program or vocational school leaders have been synthesized based on this research and leadership theories as seven strategies to help students become successful professionals.

Table 8: Applied Curriculum for Careers in Exercise Science Studies (A.C.C.E.S.S.) Model

Example Courses	Curriculum Objectives	Example Instructional Strategies	Intended Outcomes (Cognitive Process / KNOWLEDGE DIMENSION)	Marketplace Job Characteristics
PET3005 Intro to ES or SS SPM 3504 Fiscal & Facilities PET 4143 Trnds & Cur Issues SPM 4723 Legal Issues SPM 3415 Public Relations	<ul style="list-style-type: none"> Students will understand the types of careers and KSAs needed in applied sport science / exercise science related field. Students will understand the business of fitness. 	<ul style="list-style-type: none"> Engage students in discussion of the Occupational Information Network. O*NET is a “comprehensive database of worker attributes and job characteristics” so they can discover realistic income/wage facts and the skill set recommended to be effective and successful in the field. 	<ul style="list-style-type: none"> Remember Understand FACTUAL CONCEPTUAL 	<ul style="list-style-type: none"> Sales Ability Marketing & Business Organizational Skills
SPC 1608 Fundamentals of Oral Communication PSY 2012 General Psychology PET 4215 Motivational Aspects of Ath Performance PET 4088 Phy Act & Preventative Medicine Other: SYO 4400 Medical Sociology	<ul style="list-style-type: none"> Student will observe three sites that employ sport science / exercise science related professionals and interview three separate professionals after job shadowing. Student will role play health behaviors or barriers client or athlete is struggling with and associated readiness level to change. 	<ul style="list-style-type: none"> Arrange three local site visits to see opportunities with existing university athletic program, community sports organizations, private and public fitness companies and multi-purpose facilities upon entering the major junior year. Require three scholarly reported, case study interviews as part of job shadowing experiences in locations of students’ vocational interests. 	<ul style="list-style-type: none"> Remember Understand FACTUAL CONCEPTUAL 	<ul style="list-style-type: none"> Interpersonal Communication Skills Psychology Customer Service

Example Courses	Curriculum Objectives	Example Instructional Strategies	Intended Outcomes (Cognitive Process / KNOWLEDGE DIMENSION)	Marketplace Job Characteristics
ZOO3736C Ex Phys Anatomy APK 4110C Ex Physiology PET 3361 Nutrition & Metabolism PET 3125 Fitness & Weight Management ATR 4132 Human Injuries & Prevention	<ul style="list-style-type: none"> Students will understand the basic foundations of exercise science by being able to classify, map and match the structure of the human body. Students will effectively explain the principles of nutrition and effect on human performance. Students can recall and/or recognize most common musculoskeletal injuries. 	<ul style="list-style-type: none"> Partner students together to name muscles, origins and insertions on each other. Require students to document ½ of course nutrition and activity using free online application. Have students reflect on what they learned. Students will observe and participate in performing therapeutic modalities. 	<ul style="list-style-type: none"> Remember Understand Apply FACTUAL CONCEPTUAL PROCEDURAL 	<ul style="list-style-type: none"> Interpersonal Communication Skills Foundational Exercise Science Knowledge Personal Appearance
PET 3771 Strength & Cond Concepts PET 4312C Kinesiology / Biomechanics PET 4550C Assessment & Evaluation in Ex Sci PET 4050C Motor Dev & Learning	<ul style="list-style-type: none"> Students can execute and differentiate exercise instruction. Students can critique biomechanics and demonstrate proper movement. Students will self-implement his or her fitness / performance program. 	<ul style="list-style-type: none"> Establish at minimum 360 hours of hands on biomechanics instruction imbedded in these courses. Each student will have an accountability partner and document program using free online app. 	<ul style="list-style-type: none"> Remember Understand Apply Analyze Evaluate Create (Intro) FACTUAL CONCEPTUAL PROCEDURAL 	<ul style="list-style-type: none"> Interpersonal Communication Skills Application of Exercise Science Knowledge Psychology Customer Service Personal Appearance

Example Courses	Curriculum Objectives	Example Instructional Strategies	Intended Outcomes (Cognitive Process / KNOWLEDGE DIMENSION)	Marketplace Job Characteristics
PET 4552 Ex Prescription for Special Populations PET 4901 Capstone Course PET 4926 Practicum (Internship)	<ul style="list-style-type: none"> Students can execute and differentiate exercise instruction for healthy and moderately unhealthy populations. Students can assess, evaluate, demonstrate and create individualized and group programs. Students will have accurate self-awareness of knowledge. 	<ul style="list-style-type: none"> Require 360 hr internship w/ nationally accredited professional and specific benchmarks to accomplish. (i.e. Assess new client & program design, self reflection activity) Require a nationally accredited certification as part of graduation requirement. Role-play 3-4 person panel interviews for dream job or angel investors for self-employment. 	<ul style="list-style-type: none"> Remember Understand Apply Analyze Evaluate Create FACTUAL CONCEPTUAL PROCEDURAL META-COGNITIVE KNOWLEDGE 	<ul style="list-style-type: none"> Sales Ability Marketing & Business Organizational Skills Interpersonal Communication Skills Application of Exercise Science Knowledge Psychology Customer Service Personal Appearance
<p>Note: Course titles are actual course prefixes and numbers from University of Central Florida.</p>				

A.C.C.E.S.S. Strategic Plan

Strategy 1 – Set the expectation. Providing introductory courses which unpack the business of PFTs or fitness/human performance professionals as the foundation of coursework sets the expectation for what kind of careers exist in the field. The authoritative leader helps set the expectation, vision and focus on end goals (Goleman, 2000). Then, students gain an understanding that the path some advanced careers in exercise science studies calls for higher cognitive processes and far greater depth of exercise science knowledge than others do. Some PFTs focus on the general population for weight loss. Others train athletes; while even more are now trying to serve special populations with multiple cardiovascular, metabolic or other disease risk factors.

Further, sharing the program strategy and goals initially and repeatedly with students prepares them to stretch into learning more procedural knowledge within rigorous courses. The strategy to extend into deeper cognition is one to construct an expertise beyond amateurs that simply remember or understand facts and concepts. Additionally, faculty needs to communicate to students that the acquisition of meta-cognitive knowledge, a form of self-regulation; helps students articulate their scope of practice effectively. “The signs of self-regulation are a propensity for reflection and thoughtfulness; comfort with ambiguity and change; and integrity – an ability to say no to impulsive urges.” (Goleman, 2004, p.87) Improved mastery of these personal characteristics in a fast changing and vaguely defined profession adds significance to the new graduate entering the marketplace. These are the confidence boosters to differentiate the value of higher education degrees, certification, and experience to potential employers or consumers.

Strategy 2 - Advise students effectively. Advisement models that disperse students to faculty alphabetically by last name may be efficient yet seem ineffective in caring for students. Take time to get to know your students and his or her goals. Renowned leadership author, John Maxwell suggested that leaders learn what their followers dream about, laugh about and cry about (Maxwell, 1999). It seems logical that someone who has insight on the road he or she hopes to travel would motivate a student. Moreover, students need a realistic perception of the knowledge, skills and abilities required to be successful. Advisement and instructional strategies that educate students to understand the numerous careers in exercise science studies before jumping into the rigorous science courses can help them determine the best use of their academic and personality strengths. Thus, an effective advisor actually demonstrates authentic leadership to nurture students' personal and professional growth. Authentic leadership shares one of its four main components with emotional intelligence; self-awareness. Individuals who have high levels of self-awareness are confident, realistic of their skills and often have a self-deprecating sense of humor (Begley, 2005 & Avolio & Gardner, 2005). Essentially, they can laugh at themselves and exhibit a joy or comfort level with their values and goals. Consequently, the effective, authentic advisor provides a model for the future professional.

Strategy 3 - Cultivate community partnerships. Many businesspersons woman want to invest in the professional and personal growth of students (Chegg & Harris Interactive, 2013). These relationships are the bedrock for site visits, internships, guest expert speakers and future jobs for students. Based on the high percentage of agreement with Central Florida PFTs on internship, results of Chegg and Harris Interactive 2013 study of U.S. hiring managers, and the data showing a positive relationship between experience and wages, internship or service learning projects

should be a graduation requirement. Internships or service learning projects with structure, accountability and mentor-like coaching can amplify knowledge, build relationships and improve the prospect of being hired upon graduation. A 2010 survey report by the Association of American Colleges and Universities reported 73 percent of employers stated the desire for higher education to put more emphasis on "the ability to apply knowledge and skills to real-world settings through internships and other hands-on experiences." (Westerberg & Wickersham about AACU, 2011)

Strategy 4 - Create hands on learning opportunities. Although an anecdotal claim, keeping students seated in the classroom listening to “expert lecture” that predominantly learn kinesthetically and visually can be stifling to motivation. Extend the classroom outside the traditional four walls of the university to achieve hands-on learning. The pedagogy of place based learning makes education a preparation for citizenship, both locally and in wider contexts, while also providing the basis for continuing scholarship (Sobel, 2005). This style of learning is similar to the Social Efficiency ideology defined by Michael Schiro where students learn from their environment, change their own behavior, and construct knowledge through practice. Place based education offers a multi-sensory approach to student experiential learning beyond traditional fact ingestion (McKenzie 2008). In addition, the principle of place-based educators where learning and knowledge is constructed based on experiences is a component of Schiro’s, Learner Centered ideology (Schiro, 2008).

Strategy 5 - Simulate success. Collins, Brown & Newman (1987) cognitive apprenticeship models valued articulation and reflection as two successful teaching strategies to help students use, manage and discover knowledge. Moreover, this learning strategy brings implicit processes

into the open so students can observe, perform, and put into practice future scenarios with guidance from the teacher. Role playing scenarios of trainer-client, trainer-employer, and trainer-mentor are great instructional strategies to improve interpersonal communication skills, confidence, sales ability, and pretend marketing. This can be accomplished by having students partner up or form small groups to simulate assessing clients, instructing clients, interviewing for a job or even presenting to investors for a new business. With the rapid advancement of technology and written communication, the current generation may lag behind and need practice in the age-old art of pontificating.

Strategy 6 - Synergize program undergraduates with past program alumni. There are many benefits to forming and maintaining a student/alumni club within the program. Most importantly, linking like-minded students together outside the classroom will create professional learning communities for studying and practicing the craft of exercise science. Additionally, a database can include contact information such as place of employment and position so that new graduates have mentorship opportunities from those who have been practicing in the field. Further, by creating a six-month or one year post-graduation survey and enlisting the support of the program administrator, information regarding job preparedness as a result of the degree and suggestions from practicing professionals can improve the degree. The student club can fundraise from alumni to help pay for certifications, alumni and current student barbeque events, or service projects. Additionally, these types of clubs are far more reaching than they used to be. “Alumni organizations now offer everything from mock job interviews to discounted moving services, temporary health insurance, campus activity cards and youth-focused snowboarding trips.” (Dizik, 2012).

Strategy 7 – Inspire a heart to serve. Never before has our country been in such need of leaders. Two-thirds of our country is overweight or obese; disease brought on by poor health choices is increasing, and moral values may be at an all time low. Mahatma Ghandi once said, “Be the change you want to see in the world.” To set the example and be the change we want to see in the world, undergraduate exercise science program faculty and staff ought to foster a service culture. Robert Greenleaf, given credit for the modern day, servant leadership movement circa 1970, suggests creating a culture where one asks,

“Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society? Will they benefit or at least not be further deprived?” (Wikipedia about Greenleaf, 1970)

This type of program culture can be accomplished by establishing annual philanthropic events such as: Run for the cure 5K, Ronald McDonald House Charity Golf tournament, or even a Dance out Diabetes party with cover charge to raise money for diabetes research. The faculty and staff ought to influence students by modeling servant leadership and encouraging students to leave a legacy worth cherishing. The 10th chapter of the Gospel of Mark in the New International Version of the Holy Bible eloquently records Jesus reminding his disciples,

"42 You know that those who are regarded as rulers of the Gentiles lord it over them, and their high officials exercise authority over them. 43 Not so with you. Instead, whoever wants to become great among you must be your servant, 44 and whoever wants to be first must be servant of all. 45 For even the Son of Man did not come to be served, but to serve, and to give his life as a ransom for many."

When one’s focus is to serve others, the intrinsic reward is far greater than any fleeting emotion a financial return offers. Ironically, resources and financial wealth may be long term bi-products of a service based mindset in the hands of one who is willing to give to others. Lastly and most importantly, the relationships we foster over our lives provides the greatest return on investment.

APPENDIX: IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Michael A. Akerson and Co-PI: Anna Sarmiento Valdes**

Date: **July 02, 2013**

Dear Researcher:

On 7/2/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: INVESTIGATING THE ATTITUDES, OPINIONS, AND BELIEFS OF CENTRAL FLORIDA, PERSONAL FITNESS TRAINERS
Investigator: Michael A. Akerson
IRB Number: SBE-13-09468
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Patria Davis on 07/02/2013 03:20:38 PM EDT

A handwritten signature in black ink, appearing to read 'Patria Davis'.

IRB Coordinator

LIST OF REFERENCES

- Abbott, A. (1989). *The exercise science knowledge base of commercial fitness instructors in the State of Florida*. (Dissertation). Research study presented at the ACSM annual conference, 1990.
- Abbott, A. (2009). Certified, Qualified and Justified. *Exercise Standards and Malpractice Reporter*, 23(2), 17, 20-22.
- About.com (2013). College costs data retrieved from <http://collegeapps.about.com/od/collegeprofiles/p/UCF.htm>).
- American College of Sports Medicine. (1975). *Guidelines for Graded Exercise Testing and Prescription*. Philadelphia: Lippincott Williams & Wilkins.
- American College of Sports Medicine. (1992). *ACSM's Health/Fitness Facility Standards and Guidelines*. Champaign: Human Kinetics.
- American College of Sports Medicine. (2006). *ACSM's Health/Fitness Facility Standards and Guidelines*. 3rd Ed. Champaign: Human Kinetics.
- American College of Sports Medicine. (2013). Summary of certification statistics. Data retrieved from <http://certification.acsm.org/certstats>
- American Council on Education (1994). *Public Accountability for Student Learning in Higher Education*. [pdf file of a position paper from Business-Higher Education Forum: Washington, D.C.] Retrieved from http://www.bhef.com/publications/documents/public_accountability_04.pdf
- American Council on Exercise (n.d.) About A.C.E. Accreditation. Retrieved from <http://www.acefitness.org/aboutace/accreditation.aspx>
- Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for teaching, learning, and assessing: A revision of Bloom's taxonomy of educational objectives* (Abridged Ed). New York: Longman.
- Avolio, B. J., & Gardner, W. L. 2005. Authentic leadership development: Getting to the root of positive forms of leadership. *Leadership Quarterly*, 16, 315-338.
- Begley, P. (2005). *Authentic leadership*. California: Sage Publications.

- Bolman, L. G., & Deal, T. E. (2008). *Reframing organizations: Artistry, choice and leadership*. San Francisco: Jossey-Bass.
- Boone, T. (2010). Exercise science is a meaningless degree. *Professionalization of Exercise Physiology online*. 13(4), 1-14.
- Brathwaite A, Eickhoff-Shemek J. (2007) Preparing quality personal trainers: a successful pilot program. *Exercise Standards & Malpractice Reporter*, 21(2), 25-31.
- Carnevale, A. P., Smith, N. & Strohl, J. (2011). Help Wanted: Projections of jobs and education requirements through 2018. *Georgetown University Center on Education and the Workforce*. [Technical summary pdf file]. Retrieved from <http://cew.georgetown.edu/JOBS2018/>
- Centers for Disease Control and Prevention (2011). Nutrition, physical activity and obesity. Retrieved from <http://www.cdc.gov/Features/ObesityAndKids/>
- Centers for Disease Control and Prevention (2010). State Indicator Report on Physical Activity, 2010. PDF retrieved from http://www.cdc.gov/physicalactivity/downloads/PA_State_Indicator_Report_2010.pdf
- Centers for Disease Control and Prevention (2000). Fact Sheet Physical Education and Activity. From *CDC's School Health Policies and Programs Study (SHPPS) 2000*. SHPPS Retrieved from <http://www.cdc.gov/healthyyouth/shpps/2000/factsheets/pdf/pe.pdf>
- Chegg & Harris Interactive (2013). Bridge that gap: Analyzing the student skill index. A white paper retrieved from http://cramster-blog.s3.amazonaws.com/Skills%20Gap/Bridge%20that%20Gap%20White%20Paper_FINAL%20102313.pdf.
- CNBC (2011). One Nation Overweight. A news story retrieved from <http://www.cnn.com/id/36073283>
- Collins, A., Brown, J. S., & Newman, S. E. (1987). Cognitive apprenticeship: Teaching the craft of reading, writing and mathematics (Technical Report No. 403). BBN Laboratories, Cambridge, MA. Centre for the Study of Reading, University of Illinois.
- Covey, S. (1989). *The seven habits of highly effective people*. New York: Free Press.
- Craig, A. & Eickhoff Shemek, J.M. (2009). Educating and training the personal fitness trainer: A pedagogical approach. *ACSM Health & Fitness Journal*, 13(2), 8-15.
- Department of Health and Human Services (n.d.) The President's Council on Physical Fitness and Sports. Retrieved from http://www.fitness.gov/about_history.htm

- Diznik, A. (2012). Squeezing value you're your alumni club. Reuters article retrieved from <http://www.reuters.com/article/2012/05/02/us-personalfinance-grad-alumni-idUSBRE8410Y220120502>
- Elder, C.L., Pujol, T.J. & Barnes, J.T. (2003). An analysis of undergraduate exercise science programs: An exercise science curriculum survey. *Journal of Strength and Conditioning*, 17(3), 536-540.
- E.S.M.R.(1987). Legislative proposals for licensing exercise professionals. *Exercise Standards and Malpractice Reporter*, 1(6), 91.
- Feynman, R. (n.d.) Knowledge quote. Retrieved from http://www.quotationspage.com/quotes/Richard_Feynman/
- Florida Senate (2012). Senate bill retrieved from <http://www.flsenate.gov/Session/Bill/2012/0984>
- Florida Senate (2013). Senate bill retrieved from <http://www.flsenate.gov/Session/Bill/2013/1616>
- George, M. (2008). Interactions in expert service work: Demonstrating professionalism in personal training. *Journal of Contemporary Ethnography*, 37(1), 108-131.
- Georgetown University Center on Education and the Workforce (2011). [Data set of college majors and unemployment]. Retrieved from <http://graphicsweb.wsj.com/documents/NILF1111/#term=>
- Goleman, D. (2004). What makes a leader? *Harvard Business Review*, 82(1), 82-91
- Holy Bible, Mark 10:42-45 (New International Version).
- Holy Bible, Proverbs 10:9 (New International Version).
- Horn, L.J. & Carroll, C. D. (2001, February). From bachelor's degree to work. *National Center for Education Statistics*. [Statistical analysis report]. Retrieved from <http://nces.ed.gov/pubs2001/2001165.pdf>
- Institute for Credentialing Excellence (2011). Accredited certification programs listing. Retrieved from <http://www.credentialingexcellence.org/NCCAAccreditation/AccreditedCertificationPrograms/tabid/120/Default.aspx>

- Ives, J. & Knudson, D. (2007). Professional Practice in Exercise Science: The Need for Greater Disciplinary Balance. *Sports Medicine*; 37 (2), 103-115.
- Kahneman, D., & Tversky, A.(1996). On the reality of cognitive illusions. *Psychological Review* 103 (3), 582–591.
- McKenzie, M. (2008). *The places of pedagogy: or, what we can do with culture through intersubjective experiences*. *Environmental Education Research* 14(3), 361-373.
- Malek, M.H., Nalbone, D.P., Berger, D.E. & Coburn, J.W. (2002). Importance of health science education for personal fitness trainer. *J. Strength Cond. Res.* 16(1), 19-24.
- Marlar, J. (2011, October 10th). Seven in 10 college grads are employed full time for employer. *Gallup Organization*. Retrieved from http://www.gallup.com/poll/149981/Seven-College-Grads-Employed-Full-Time-Employer.aspx?utm_source=alert&utm_medium=email&utm_campaign=syndication&utm_content=morelink&utm_term=All%20Gallup%20Headlines%20-%20Americas%20-%20Business%20-%20Economy%20-%20USA
- Maxwell, J. (1999). *The 21 indispensable qualities of a leader: Becoming the person others will want to follow*. Nashville: Nelson Books.
- Mayer, R. E. (2011). *Applying the science of learning*. Boston: Pearson.
- Melton, D.I., Katuna, J.A. & Mustian, K.M. (2008). The current state of personal training: An industry perspective of personal trainers in a small southeast community. *J. Strength Cond. Res.* 22(3), 883-889.
- NASPE (1988). Standards for programs preparing undergraduate students for careers in fitness. Virginia: National Association for Sport & Physical Education.
- NASPE, (2012.) About NASPE on website home page. Retrieved August 15, 2012 from <http://www.aahperd.org/naspe/about/>
- National Association for Sport and Physical Education. (2010). *Physical education is an academic subject*. Reston, VA: Retrieved from <http://www.aahperd.org/naspe/advocacy/governmentRelations/upload/PE-is-an-Academic-Subject-2010.pdf>
- NPTI (National Personal Training Institute (2013). Data retrieved from <http://nptifitness.com/>.
- National Sporting Goods Association (2010). Census of Retail: Sporting Goods Store Sales Up 38%. Retrieved Nov. 5th, 2011 from <http://www.nsga.org/i4a/pages/index.cfm?pageid=4381>

- National Strength & Conditioning Association (1994). *Essentials of Strength Training and Conditioning*. Champaign: Human Kinetics.
- NBFE National Board of Fitness Examiners (2006). [Personal Training Licensing Survey Results.] Retrieved from http://www.nbfe.org/news/press_releases/survey_results103006.cfm
- Owens, R. G. & Valesky, T. (2011). *Organizational behavior in education*. 10th Edition New Jersey: Prentice Hall .
- Rueda, R. (2011). *The 3 dimensions of improving student performance*. New York: Teachers College Press.
- Schiro, M. (2008). *Curriculum Theory: Conflicting Visions and Enduring Concerns*. California: Sage Publications.
- SkillsActive (2013). About us information retrieved from <http://www.skillsactive.com/skillsactive/itemlist/tag/National%20occupational%20standards>
- Sobel, D. (2005). *Place-based education. Connecting classrooms and communities*. Barrington, MA: The Orion Society.
- Social Cognitive Theory (n.d.). Retrieved from Wikipedia on Feb. 24th, 2012. http://en.wikipedia.org/wiki/Social_cognitive_theory
- Springer, B.L. & Clarkson, P.M. (2003). Two cases of exertional rhabdomyolysis precipitated by personal trainers. *Medicine & Science in Sports & Exercise* 35(9), 1499-1502.
- Social Security Administration. (2013). Data retrieved from <http://www.ssa.gov/oact/cola/sga.html>
- Stelnick, R. & Miragliotta, R. (2003). V-formation Annual Report. Retrieved online from http://google.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=2266274&SessionID=aruSH6ACwI-r6A7
- U.S. Bureau of Labor, Occupational Employment Statistics (2012). Data retrieved from <http://www.bls.gov/oes/>
- U.S. Bureau of Labor Statistics (2009). Fastest growing occupations. Data file retrieved from http://www.bls.gov/emp/ep_table_103.htm

- U.S. Census Bureau (2013). On the nature of reporting median versus mean income. Retrieved from: <http://www.census.gov/prod/2003pubs/p70-88.pdf>
- U.S. Department of Education (2011). *No Child Left Behind Overview*. Retrieved from <http://www2.ed.gov/nclb/overview/intro/edpicks.jhtml?src=ln>
- United States Department of Health & Human Services (2012). Health information privacy. Retrieved from <http://www.hhs.gov/ocr/privacy/hipaa/understanding/coveridentities/index.html>
- Wagner, T. (2012). Personal website describing 21st century survival skills for students. Retrieved from: <http://www.tonywagner.com/7-survival-skills>
- Westerberg, C. & Wickersham, C. (2011, April 24th). Internships have value, whether or not students are paid. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/Internships-Have-Value/127231/>
- Wordle™ (2013). Creation of word clouds retrieved from <http://www.wordle.net/>
- Van Horn, C. & Zukin, C. (2011, May 31st). Unfulfilled Expectations: Recent college graduates struggle in a troubled economy. *Rutgers Today*. Retrieved from <http://news.rutgers.edu/medrel/news-releases/2011/05/unfulfilled-expectat-20110523>