THE ICHPER·SD JOURNAL OF

Research in Health, Physical Education, Recreation, Sport & Dance

The Official Publication of the International Council for Health, Physical Education, Recreation, Sport, and Dance.

Special Inclusion:
The Statute of the Prince Faisal Prize
7th Session (2008-2011)

Volume III. No. 2
Fall & Winter 2008

Historical Themes of ICHPER·SD Administration

"To Create Together A New Era for ICHPER·SD
Through Shared Responsibility (1991 - 1995)"

"Creating A Culture of Keeping Shared Responsibilities
and of Building Shared Responsibility (1995-1999)"

"ICHPER•SD must reinvigorate its spectrum of operation and programs
in response to our new vision, new mission, and new strategies. (1999-2003)"

"We will consolidate and expand our work to reinvigorate the
ICHPER•SD spectrum of operations and programs
in response to our new vision, new mission, and new strategies.(2003 – 2007)"

"We Enter A New Era for ICHPER·SD
Through Shared Responsibility. (2007 - 2011)"

To stem the widening gap between our members in countries of the haves and those in the countries of the have-nots, the Board of Governors took on the enormous and challenging task of adopting a graduated annual membership and congress fee system. The decision to institute graduated fees reflects a caring leadership committed to share, facilitate, and maximize ICHPER•SD missions, and extend our dimension of membership inclusively to all 208 countries and self-governing territories. We continue to hold the conviction that, "Infinite sharing is the law of God's inner life" (Thomas Merton, 1948), and the 21st century must be one village of sharing. Let us continue our professional journey of commitment to excellence.

***The Revised Official ICHPER·SD Application
is on pages 131-132
It must be used by all applicants as of October 1, 2008.***

The Mission of the ICHPER•SD Journal of Research

The mission of the journal is to meet the needs of the academic community from both a national and an international perspective. Thus, academicians and professionals engaged in or studying HPERSD, and related activities, at all levels, are encouraged to contribute to the professional literature by submitting research-oriented manuscripts that will contribute and expand the knowledge base of the disciplines within our profession. The *ICHPER•SD Journal of Research* is exclusively what is termed a "research journal" and invites data based manuscripts representing cutting edge research.

Manuscript Guidelines for Authors

Articles are invited in the areas of health, physical education, adapted physical education, recreation, dance, sport, human performance, coaching, sports medicine, and sport management. *This journal is international in scope in the sense that authors/researchers and topics can originate from any part of the world.*

All manuscripts must be submitted in English. An original hard copy of the manuscript plus a computer CD (virus free) containing the article and any tables and/or figures (as separate files, in Microsoft Word®), should be submitted to:

Editor
ICHPER•SD Journal of Research
International Council for Health, Physical Education, Recreation, Sport, & Dance (ICHPER·SD)
1900 Association Drive, Reston, Virginia 20191-1598, USA
Phone: (703) 476-3462 Fax: (703) 476-9527 Email: ichper@aahperd.org

Each manuscript must be accompanied by a one-paragraph abstract (100 words or less). The APA (latest edition) format [*Publication Manual of the American Psychological Association*] must be used consistently throughout the entire manuscript. At least one of the authors (if there is more than one) must be (or become) a member of ICHPER•SD. Authors should number pages and lines throughout the manuscript, including the references. Be sure and double check references for correct spelling of authors and publication dates as well as to insure that the names in the references and in the body of the manuscript match.

For manuscripts sent from the United States, a large, self-addressed, **stamped** envelope (9" by 12") must be included for the return of the manuscripts (with editor's and reviewers' comments) for possible revision. For manuscripts sent from outside the United States, only a large self-addressed envelope (9" by 12") must be included. Manuscripts should not be submitted to another journal while under review by the *ICHPER•SD Journal of Research*.

The first page of each manuscript should include only the title of the article. The senior author's name, affiliation, and full address (including phone number, fax number and e-mail address) should be provided on a separate cover sheet, along with identification of co-authors, if any. The manuscripts should be typed double-spaced with a 1½ -inch margin. Generally, manuscripts should be 20-27 pages in length, plus tables, figures and references, for a total of no more than 35-37 pages. Manuscripts longer than this will be reviewed, and if accepted, can be published – space permitting. The body of the manuscript should not contain any information identifying the author(s).

All graphs, tables as well as figures and drawings should be placed on separate pages. Tables should be double-spaced. Figures and drawings must be professionally prepared and camera ready. Final manuscripts, including all corrections and revisions, must be submitted on a computer CD in Microsoft Word® as well as one hard copy.

Submitted manuscripts are reviewed by at least three members of the "review board" and by the editor. The evaluation of manuscripts is by a blind review process. Authors are notified as to the disposition of their manuscripts as soon as all reviews are completed. Once a manuscript has been tentatively accepted, the author should return two hard copies of the revised manuscript and a computer CD (Microsoft Word®) containing the manuscript and any tables or figures as separate files, for a final review, prior to being scheduled for publication.

Galley proofs of accepted manuscripts are sent to the author and are to be returned within one week following receipt from the editor. Only minor corrections are acceptable on the galley proofs. No major additions or revisions are permitted at this stage in the publication process. The senior author receives two copies of the issue in which the article appears.

There are no page charges to authors. All authors must transfer copyright to International Council for Health, Physical Education, Recreation, Sport, & Dance (ICHPER•SD) by signing a copyright release document. At least one of the authors (if there is more than one) must be a member of ICHPER•SD or become a member before the beginning of the review process.

2009 ICHPER•SD Forum

THEME:

"*Many Voices in HPERSD from the Eight ICHPER•SD Regions . . . One Consolidated Global Mission*"

March 31 and April 1, 2009
Tampa Convention Center
Tampa, Florida

11th ICHPER•SD Europe Regional Congress & Exposition

THEME:

"*Integration of Contemporary Sports Disciplines in Europe*"

April 22-24, 2009
Antalya, Turkey
Website: www.ichpersderc2009.org

1st ICHPER•SD Caribbean Regional Congress & Exposition

THEME:

"*Building a Caribbean Legacy for Sport and Physical Education*"

Academy of Sports and Leisure and the University of Trinidad & Tobago

May 2009
(Dates to be announced soon)
Phone: 868-642-8888 extension 21371
Website, email and Organizing Committee information will be published soon.

51st ICHPER•SD Anniversary World Congress & Exposition

Sponsored by the Qatar Ministry of Education

Doha, Qater

October 2009
(Dates to be announced soon)

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The ICHPER·SD Journal of Research is the peer-reviewed official biannual publication of the International Council for Health, Physical Education, Recreation, Sport, and Dance. The journal is published as a service to members of the Council and others concerned with our disciplinary areas. Views and opinions expressed in the journal or articles herein are those of the authors and not necessarily those of the publisher.

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Message from the President:
The State of the Council (I)

Dong Ja YANG, Ph.D., President

Those without vision cannot really advance. The search for wisdom and knowledge is a driving force of one's roadmap for the future. Without mobilizing the force of vision, no institutions or countries have progressed. While safeguarding our legacy and merits, we recognize these values: to exist is to change; to change is to meet new challenges of the time and to mold the paradigm for advancement without limits. We learn the truth of this everyday as well as through the history of our organization's progress to a sustainable state of wellbeing.

At this juncture, it would be helpful to revisit the state of the Council from its very beginning over a half century ago to our present state of the Council, so that we can activate our innovative strategic plans and directions for the future.

I. The Birth of ICHPER and its Relationship to AAHPERD

(Re-named ICHPER·SD in 1993 in Yokohama, Japan)

In 1950, the Board of Directors of the American Alliance for Health, Physical Education and Recreation (AAHPER, now **AAHPERD** by adding Dance) had the idea to establish an international organization in our field of HPERSD that would advocate a mission, similar to AAHPERD's, ***but would extend it throughout the world***. In 1958, the International Council for Health, Physical Education and Recreation (ICHPER, now **ICHPER·SD** by adding Sport and Dance) was inaugurated in Rome, Italy.

Since its beginning, ICHPER (now ICHPER·SD) international headquarters has been housed at AAHPER (now AAHPERD) and has enjoyed its support in numerous administrative areas. ICHPER·SD recognizes AAHPERD as the most prestigious and largest national organization in our fields in the world. Therefore, we promote AAHPERD's organizational model and its principles, programs (e.g. participation in its annual national convention and exposition, subscribing to its publications: journals, curriculum and assessment standards, etc.) and strategies to plan and build each of our own member national organizations worldwide.

A. Legal Status of ICHPER·SD and Affiliations

ICHPER·SD is a non-profit, charitable, and educational organization as defined in Section 501(c)(3) of the United States Internal Revenue Service Code of 1954. It is a non-governmental international academic, scientific and professional organization associated with the United Nations Educational, Scientific and Cultural Organization (UNESCO), and it enjoys IOC *Recognized Organization* status.

B. Status, Membership and Advocacy

ICHPER·SD is one of the oldest *(e.g. conceived in 1950 & founded in 1958)*, largest *(e.g. serving professionals in 204 countries)* and most prestigious *(e.g. having held 32 world congresses, 29 regional congresses & numerous forums, conferences and symposia)* international umbrella organizations. It consists of individual professional members, institutions, national and international organizations in the 8 geographical regions *(i.e., Africa, Asia, Caribbean, Europe, Latin America, Middle East, North America, and Oceania)*. ICHPER·SD has been working in a partnership with the United Nations Education, Scientific and Cultural Organization (UNESCO) for 47 years and with the International Olympic Committee (IOC) for the last 14 years.

ICHPER·SD has championed the promotion of quality physical and health education (including all movement related physical activity and fitness, leisure and recreation, and dance education), and sport and the Olympic education especially in schools and other learning institutions. Moreover, it has been leading the movement for sustainable and vibrant scholarly activities (*i.e.* research and publications, organizing congresses for presentation and scholarly debate/discussion, and dissemination of findings and cutting edge knowledge) while exalting the importance of daily physical exercise and activity. ICHPER·SD advocates stronger than ever that every government should revitalize a holistic education and lifelong learning environment that all peoples should be free to develop and preserve their physical, intellectual and moral powers. We seek better methodologies for staying healthy through an active lifestyle for all global citizens – confidently pursuing that path while keeping in mind the importance of gender equity and enhancing good health for all age groups, despite any mental or physical challenge.

II. Volunteers

ICHPER·SD is an organization 'of the members, by the members and for the members'. We owe a debt of gratitude to the many volunteers who contribute their time, money, energy and talents to this organization, because they believe in our mission. Without those great members, ICHPER·SD might have been fazed away like so many other international organizations. We salute each of those dedicated and honorable volunteers; they are the backbone and the heart of ICHPER·SD.

A. Our Continued Struggle of the Council's Financial Condition

We have learned that ICHPER·SD should be operated and managed more as a business entity and rely on a full and part-time staff to raise funds and maintain daily operations for facilitating the Council's mission. We will be tapping the talents of a group of elected and/or selected HPERSD professional volunteers (e.g., officers, editorial team members, commissioners, chairpersons, regional secretaries, directors and associate directors, researchers and dedicated professional members).

ICHPER·SD has not yet accomplished the most critical step of hiring a full-time Chief Executive Officer (CEO) with the title of Executive Director – which was unanimously adopted as a new direction for operation by the ICHPER·SD Executive Committee in Antalya/Istanbul, Turkey in August 2003 and endorsed unanimously by the Board of Governors (BOG) in Istanbul in December 2005 and again by BOG in Japan in May 2008.

B. The Great Challenge of the 2008 ICHPER·SD Board of Governors

We believe that everything is possible if every member takes part and contributes to this great challenge: ICHPER·SD is now asking of you the following:

Consider championing the mission of the Council throughout your professional life and beyond by becoming a ***Life*** Member! The ***Life*** Membership fee of US$ 1,500 may be a large amount for you; nevertheless, your heart is even bigger in caring for our mission through this commitment.

Consider contributing any amount – large or small! Just think of it as another form of exercise – exercising your fine spirit of participation by giving to a great cause.

Write a pledge to yourself to contribute in accordance with your own preferred schedule! Consider seeking potential donors on behalf of the Council!

With you, we can and we will win this great challenge.

III. ICHPER·SD Upcoming Events

A. 2009 ICHPER·SD FORUM

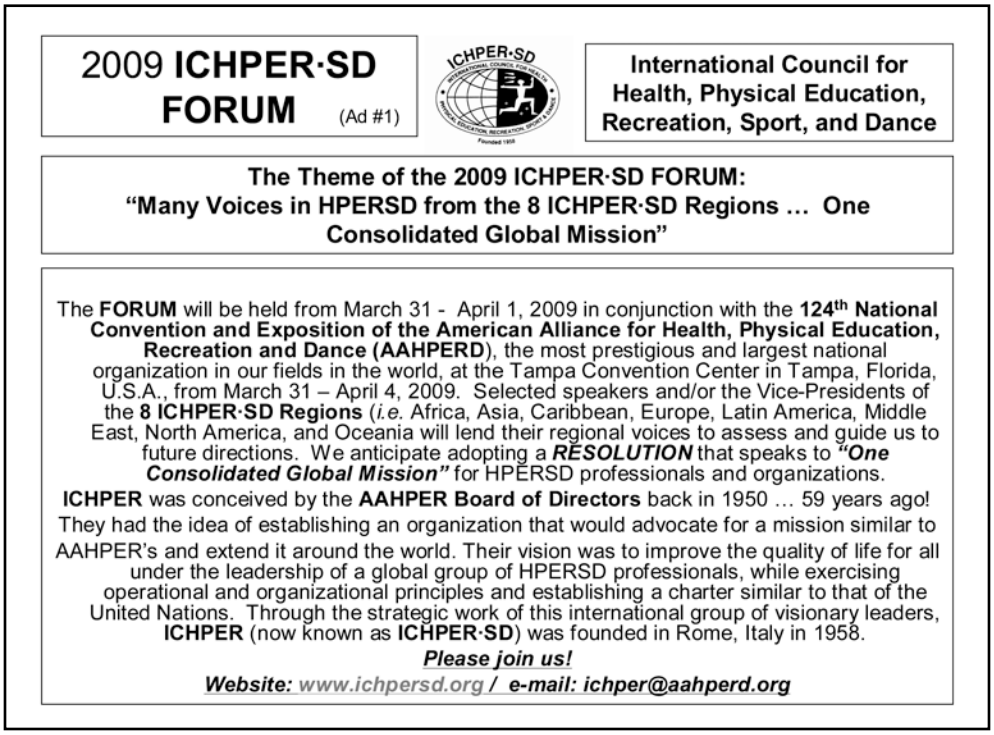
Tampa Convention Center, Tampa, Florida, USA

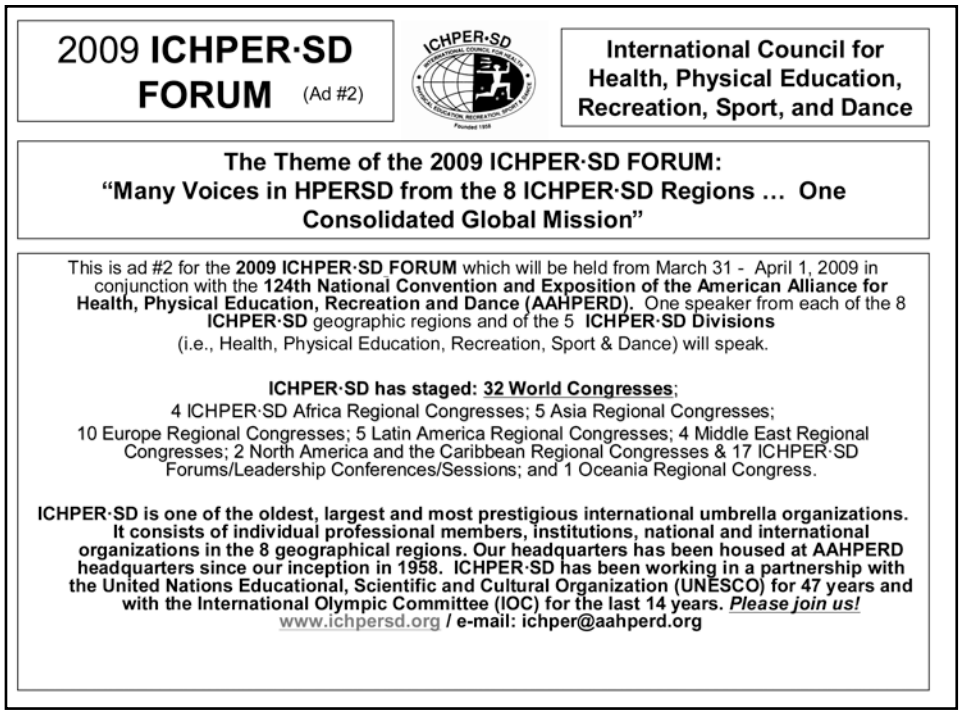
The 2009 ICHPER·SD FORUM will be held on Tuesday, March 31 and April 1, 2009 in conjunction with the ***124th National Convention and Exposition of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)*** at the Tampa Convention Center in Tampa, Florida, U.S.A., from March 31 – April 4, 2009. The AAHPERD Annual Convention and Exposition is the greatest national academic and scientific forum in the world and a very popular educational festival for professionals in our field. Usually, more than 6,000 dedicated HPERSD professionals from the U.S. and around the world come to experience and choose from more than 450 programs – a unique interdisciplinary blend of sessions, plenary and topical lectures, workshops, oral and poster presentations highlighting emerging issues and trends in health, physical education, recreation, sport and dance.

The Theme of the 124th National Convention & Exposition of AAHPERD is
"Many Voices … One Mission"

All ICHPER·SD and AAHPERD members who are registered with the 124th AAHPERD Convention & Exposition are welcome to attend the FORUM. Especially our members from abroad are cordially invited to come and experience the wide array of programs at the National Annual Convention of AAHPERD. Upon your registration with the AAHPERD Convention (www.aahperd.org), you may then request an invitation for your entry visa to the United States to the ICHPER·SD headquarters (e-mail: ichper@aahperd.org) in Reston, Virginia 20191-1598, USA. When you register with the AAHPERD Convention, ICHPER·SD members will be honored by a reduced registration fee category, 'Collegial' (Registration fees and deadlines are: U.S. $245 by 1/15/09; $290 by 3/4/09; $390 onsite or beginning 3/5/09).

The 2009 ICHPER·SD Forum (as Advertised in JOPERD, October & November 2008 – a Journal of AAHPERD):





The Selection of the Forum Presenters is "Open to ICHPER·SD members'

One speaker from each of the 8 ICHPER·SD geographic regions and of the 5 ICHPER·SD Divisions (*i.e*. Health, Physical Education, Recreation, Sport and the Olympic Movement, & Dance) will be chosen by the ICHPER·SD Executive Committee. ICHPER·SD will pay ***only*** the AAHPERD Convention registration fee for each of the selected members. For those who are interested, you may submit an abstract and overview of the manuscript for presentation that deals with the ***Theme of the Forum*** as shown above. The deadline for submission is ***January 10, 2009***.

B. The 11th ICHPER·SD Europe Regional Congress & Exposition in 2009

Under the leadership of Dr. Serap Inal, Vice President for ICHPER·SD Europe, Dr. Feryal Subasi, Regional Secretary, Secretary General Mr. Murat Dugmeli (Intra Travel Ltd. murat@intratravel.com) of the Organizing Committee and their colleagues, the 11th

ICHPER·SD Europe Regional Congress is well under way to creating a very successful congress. The theme of the Congress is ***"Integration of Contemporary Sports Disciplines in Europe"***. The dates and site are: April 22 – 24, 2009 in Antalya, Turkey. Please visit the website for specifics (www.ichpersderc2009.org).

C. The 1st ICHPER·SD Caribbean Regional Congress & Exposition

The 1st ICHPER·SD Caribbean Regional Congress Organizing Committee (1stCRCOC'2009) in Trinidad and Tobago in consultation with the Office of the ICHPER·SD President and of the Secretary General has decided to re-schedule the dates of the Congress to sometime in May 2009. Consequently, we ask you to disregard the dates previously posted.

D. The 51st ICHPER·SD Anniversary World Congress in 2009

The Qatar Ministry of Education in Doha, Qatar has informed the Office of the ICHPER·SD President through the Office of the ICHPER·SD Secretary General that the Ministry would like to sponsor the ***51st ICHPER·SD Anniversary World Congress*** in Doha, Qatar in October 2009.

Upon receipt of the bidding application and completion of the negotiation process and approval of the ICHPER·SD Executive Committee, we will announce the final dates and other relevant specifics through the ICHPER·SD website and a memorandum.

IV. ICHPER·SD Journals & Publication Plans

Unfortunately, my office is forced to merge the 2 ICHPER·SD journals (*The Journal of ICHPER·SD & ICHPER·SD Journal of Research*) into one journal due to various factors relating to the Council's priorities and publications in the light of the ICHPER·SD financial status and future direction. We have decided to focus publishing *the ICHPER·SD Journal of Research* biannually and to temporarily discontinue the publication of the *Journal of ICHPER·SD*.

We thank and highly recognize ***Dr. William Stier, Jr.*** for his outstanding contribution as the first Editor of the *ICHPER·SD Journal of Research for* serving 3 years and publishing 6 Journals of the *ICHPER·SD Journal of Research* (Volumes I, No. 1 & 2; Volume II, No. 1 & 2; Volume III, No. 1 & 2). We congratulate and extend our sincere appreciation to Dr. William Stier, Jr., Distinguished Service Professor and Graduate Director, Physical Education and Sport, State University of New York, Brockport, New York, for his remarkable service to the Council's mission, as he now retires as Editor of the *ICHPER·SD Journal of Research*!!!

Please plan to participate in the many events we have scheduled for your professional advancement and intellectual enjoyment!

Thank you.

Dong Ja Yang, Ph.D.
President, ICHPER·SD

Secretary General's Message

During my graduate studies in the United States in 1979, I was motivated to join a professional organization in my field of studies. My mentor at the time recommended that I join the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD). It was the beginning of my adventures. It was an opportunity that allowed me to enhance my thoughts and ideas, which was achieved by attending national conventions, and meeting professionals in the field.

I wanted to take my adventures further and be able to provide my help to others. I thought that this would be essential as our world is multicultural and physical education connects people globally. In 1995, I joined ICHPER·SD as a life member. In 1997, I was elected as the first Regional Vice President for the Middle East. At the time, part of my role as Regional Vice President for the Middle East was to develop a strong relationship with the NOCs, the ministries of sports and education, institutions, and physical education colleges in the Middle East region.

In July 2008, I was appointed as Secretary General in the capacity of Chief Executive Officer (CEO) under the direction of the President (CAO: Chief Administrative Officer). Along with my duties as Secretary General, my main three tasks will be: 1) to redevelop the ICHPER·SD website to better serve our professional members; 2) to publish a bimonthly electronic news update by the office of the Secretary General which will be sent to all our members to keep them updates with the activities of ICHPER·SD worldwide; and 3) to further study the Growth Domestic Product (GDP) per capita of countries on the membership application so as to suggest a fourth group "D" which will include countries with a GDP below $4,000 per capita.

This is only the beginning. In October 15 – 17, 2008 the President, Dr. Yang, and I attended the 4th ICHPER·SD Middle East Regional Congress held at the Faculty of Sport Education, Alexandria University, Alexandria, Egypt, which was one of the best ICHPER·SD Regional Congresses in the Middle East since 1999.

The successes are many but the key to success is pursuing the profession with passion, optimism, leadership and persistence. When my mentor first advised me to join AAHPERD it was meant to build those skills in graduate students. The adventures are many and the success is determined by how our choices will make an outcome. It is our actions that will speak louder than words. Working together as a team with an open heart will help us achieve our goals of ICHPER·SD. Thank you.

Adel M. Elnashar, Ph.D.
Secretary General, ICHPER·SD

International Council for Health, Physical Education, Recreation, Sport, and Dance (ICHPER•SD)

ICHPER•SD Journal of Research
Volume III, No. 2, Fall & Winter 2008

Comparison of Health and Physical Education policies with practices: An evaluation of school responses within three Brisbane Catholic Education (BCE) primary schools (2005)

by Timothy Lynch

Abstract

The purpose of this study was to compare the ideals of the Queensland P-10 Health and Physical Education (HPE) syllabus as a curriculum policy, with what was happening in practice, the teaching of Health and Physical Education in schools. It was envisaged that through this process good practice within schools could be identified and its implementation promoted. This paper is the first research within Queensland to investigate the ideals for quality Health and Physical Education, in comparison to what is actually occurring in practice.

The 1999 Queensland P-10 Health and Physical Education syllabus used within Queensland Education and more specifically Brisbane Catholic Education (BCE), adopted a socio-cultural approach to learning. This approach is underpinned by social justice principles which include diversity, equity and supportive environments (Queensland School Curriculum Council, 1999b). This approach encourages student interest and inclusive participation in physical activities, a major concern and focus within many Australian schools (Queensland Government, 2003). The syllabus favours critical, socially just pedagogies over the traditional dominant scientistic and performance-oriented pedagogy. Therefore, teachers need to be educated and prepared to use socio-critical pedagogies (Tinning, 2004). At present there is a paucity of research on the delivery of the HPE key learning area and general curriculum implementation within Queensland.

This qualitative, interpretive study is most appropriate as meanings were constructed. The case study methodology was chosen to construct meaning through capturing the context of each school. The sites for the three case studies involved: one small sized BCE primary school (less than 200 students); one medium sized BCE primary school (200 - 400 students); and one large sized BCE primary school (over 400 students). The participants included teachers and students from the respective schools.

It appears that the implementation process ceased prematurely before all schools had sufficient time and preparation to design whole school HPE programs. Teachers lacked understandings of practical ways to implement the social justice underpinnings of the syllabus and some school principals were unaware of the necessity of employing qualified HPE specialist teachers. In conclusion, when teachers have been educated and trained to deliver quality HPE learning experiences students appear to have a greater interest in physical activities. There is a need to promote a stronger marriage between these two aspects of education investigated; namely the syllabus and its implementation.

As a result this study presents scholarly contribution as a contemporary insight into HPE practice in schools within a sample of systemic Catholic primary schools, initiating links between delivery/teacher pedagogy to student participation in physical activities. Also, it stimulates further study into the relationship between ideals in policy and practical implementation. This research has the potential to help schools in BCE, education systems within Queensland, Australia and globally.

Health and Physical Education (HPE)

Throughout the history of HPE many discourses have influenced the construction and delivery of the HPE curricula within schools. These have included military, scientific, health and sporting discourses, which have been underpinned by ideologies of sexism, elitism, healthism, individualism and mesomorphism. These ideologies often permeate the hidden curriculum (Colquhoun, 1991, 1992; Hickey, 1995; Kirk, 1992; Kirk & Twigg 1993; Lynch, 2007; Scraton, 1990; Tinning, 1990; Tinning & Fitzclarence, 1992; Tinning, Kirk, & Evans, 1993), wherein students acquire knowledge and attitudes unintentionally while in the school environment (Kirk, 1992; Lynch, 2007). The hidden curriculum relates directly to the actual learning in practice. Therefore evaluation of HPE practice is an essential aspect for optimizing quality delivery and for giving renewal direction for promotion of active healthy lifestyles.

A socio-cultural approach underpinned by social justice principles of diversity, equity and a supportive environment has afforded HPE even greater relevance in Catholic schools. Under the HPE umbrella, physical education sits alongside health education, outdoor education, home economics and religious education (Macdonald, 2003; Macdonald & Glover, 1997). In Catholic education, the HPE learning area is strongly connected to the Religious Education (RE) curriculum and in particular the faith dimension of Catholic schools (BCE, 2003a; Lynch, 2004b). Enhancing Personal Development is an essential curriculum teaching component within Religious Education (Lynch, 2004b) and in the HPE physical activity strand students are presented with many practical and social experiences that require living and reflecting on Catholic religious traditions and gospel values (Lynch, 2004a).

In recent years, the school curriculum across Australia has placed less of an emphasis on HPE, particularly physical activity and sport (Queensland Government, 2003), and as a result, "Australian school HPE is failing to provide children with the opportunity to develop physical competencies and be physically active" (Morgan, Bourke, & Thompson, 2001, p. 1). In Australia, children are less fit (McNaughton, Morgan, Smith, & Hannan, 1996; Thompson, Woodcock, McCormack, & Thomas, 1995), more obese (Howard, 2004; Lazarus, Wake, Hesketh, & Waters, 2000; Magarey, Daniels, & Boulton, 2001) with approximately one quarter of Australian children regarded as overweight (Howard, 2004; Sport and Recreation Queensland, 2005). Children spend less time in physical activity (Booth, Mascaskill, McLellan, Phongsavan,

Okely, Patterson, Bauman, & Baur, 1997), especially in schools (Commonwealth of Australia, 1992; Howard, 2004) and also have low levels of motor competence (Booth et al., 1997; Noonan, 2003; Thompson, Woodcock, McCormack, & Thomas, 1995; Walkley, Holland, Treloar, & Probyn-Smith, 1993). Queensland children aged 5 to 14 years have the lowest participation rates in organized sport and physical activity outside school hours compared with children from the other states of Australia (Australian Bureau of Statistics, 2000; Metcalf, 2004). Correspondingly, "improving the quality of HPE in schools is the best documented intervention approach to promoting physical activity in youth" (Australian Council for Health Physical Education and Recreation, 1999, p. 9). This lack of physical activity "is responsible for about seven percent of the burden of disease in Australia, making it second highest to tobacco smoking for males and the highest factor for females" (Sport & Recreation Queensland, 2005, p. 1). It is estimated that obesity costs the National Health System between $680 million and $1.2 billion each year (Skatsoon, 2003) and therefore it is in the Government's interest to increase physical activity within the community.

In Australia and internationally it is recognised that a renewed commitment to the promotion of Health and Physical Education within schools is necessary (Queensland Government, 2003). The 1st International Council for Health, Physical Education and Recreation (ICHPER) World Congress' theme, held in Rome in 1958, was "Child Health and the School". In May 2008 for the 50th ICHPER – SD Anniversary World Congress held at Kagoshima, Japan the theme was "Local and Global Aspects of the Promotion of Health, Sports, and Physical Activity Education: A Renewed Commitment for the Second 50 Years". Hence, this study is significant as it provides a modern day snapshot of the delivery of this essential educational learning area, thus enabling a comparison to be made with the HPE ideals identified in policies. This research enables the discernment of quality practices and enables the possible promotion.

The last 10 years in Queensland schools has experienced a shift from content-based education to outcome-based education. The focus of outcome based education is on what the students know and do as a result of their learning experiences, whereas the focus of content-based education is remembering facts and content. The acceptance of the outcome based socio-cultural approach across Australia is documented in National Statements and Profiles (Australian Education Council, 1994a; 1994b) to promote cohesion in the curriculum through national collaboration, to enable equitable sharing of resources across systems and to remove unnecessary differences that were in existence between the systems, in a nationally consistent curriculum (Marsh, 1994). The HPE syllabus was the first outcome based syllabus to be implemented in Queensland schools. The syllabus recognises that students are influenced by the different physical, social, cultural, political, economic and environmental forces (Dann, 1999). Thus, "developing in students an understanding of, and a commitment to, a socially just society" (Queensland School Curriculum Council, 1999a, p. 3).

The devising of the HPE National Statement and Profile coincided with a Senate Inquiry into physical and sport education and provided a timely incentive for the development of the 1999 Queensland HPE syllabus (Dinan, 2000; Glover, 2001; QSCC, 1999a). The culmination of these strategic political initiatives offered possibilities for rescuing HPE from potential cultural obsolescence (Kirk & Penney, 1996). The Queensland HPE syllabus (QSCC, 1999c) is a curriculum policy, more specifically, a public incremental educational policy (Dinan-Thompson, 1998) and its implementation required primary schools to replace the outdated 1972 HPE syllabus.

In the late 1980s and early 1990s, before the development of the current HPE syllabus, the HPE curriculum within Australian schools was considered to be in crisis (Tinning, Kirk, Evans, & Glover, 1994), a situation that was identified in the HPE key learning area in Queensland schools as well (Walmsley, 1998). Hence the choice of the socio-cultural perspective adopted by the syllabus was supported by Tinning and Fitzclarence (1992) who considered adversity experienced within HPE at the time of the syllabus construction, to have a cultural meaning and be directly related to the influence of cultural discourses and ideologies.

HPE teachers today need to be able to deliver quality HPE lessons across the three strands of the Syllabus: enhancing personal development; developing the concepts and skills for physical activities; and promoting the health of individuals and communities. This involves teachers having the knowledge and understanding of a socio-cultural approach, of various pedagogies that can achieve this in HPE and awareness of when to choose the most appropriate pedagogical approach for particular HPE learning experiences (Tinning, 1999). Often this entails favouring critical, socially just pedagogies over the traditional dominant scientistic and performance-oriented pedagogy in HPE. Therefore, teachers need to be educated and prepared to use socio-critical pedagogies (Tinning, 2004).

The findings of the Senate Inquiry (Commonwealth of Australia, 1992) into the state of Physical Education and Sport within Australian Education systems supported the inhouse discussions of crisis among HPE professionals. Two problems identified were mainly with resources and the time allocation to the Physical Education strand in HPE which resulted in a drastic decline in children's skill levels and physical fitness (Tinning, Kirk, Evans, & Glover, 1994). The third major problem was that "suitably qualified HPE teachers are not being employed to teach HPE and school sport to all children" (Commonwealth of Australia, 1992, p.xiv). A fourth problem was the accreditation or formal training in HPE or sport education as a condition of employment for graduating primary school teachers (Moore, 1994) and therefore teachers often lack confidence to effectively teach HPE (Morgan & Bourke, 2005). Furthermore, the best time for children to learn and refine their motor skills is in the preschool and early primary school years (Commonwealth of Australia, 1992; Queensland Government, 2003). Also, when generalist teachers are unable to provide a meaningful HPE program, the community questions the necessity of HPE in the curriculum (Hickey, 1992).

Australian Education – Brisbane Catholic Education

Catholic schools educate approximately one in five school students in Australia (Australian Education Union, 2003; MCEETYA, 1995) and therefore influence a large percentage of Australian school students. The Queensland Catholic Education

Commission (QCEC) is responsible for the five autonomous Catholic authorities within the state of Queensland for which Brisbane Catholic Education (BCE) is one. The QCEC has authority and collaborative responsibility in policy making and action in areas in curriculum and social justice matters (QCEC, 2006).

Implementation challenges for the socio-cultural HPE P-10 syllabus were investigated by BCE, and according to the *Position Paper on Health and Physical Education* the challenges include (BCE, 1998):

1. A commitment to Social Justice challenging us to develop HPE programs that are resistant to the forces that undermine the dignity of the individual- unequal opportunities, abuse of power, greed, socio-economic disadvantage, sexism, unhealthy competition, racism and inappropriate structures;
2. A commitment to Participation challenging us to make special provision for all students to have access to appropriate HPE programs, regardless of ability, gender, class or culture;
3. A commitment to Stewardship challenging us to ensure just and effective use of resources. HPE should have adequate human and material support, distributed equitably regardless of ability, sex or culture; and
4. A commitment to Responsiveness challenging us to reflect critically on teaching, learning and assessment practices in HPE to ensure they remain effective, appropriate and in harmony with changing school policies and structures. (p.4).

Within Brisbane Catholic Education a team of three people were selected to support the implementation of the 1999 Health and Physical Education Syllabus, Sourcebook and Initial In-service materials (BCE, 1999). "It was anticipated that by the end of 2001, teachers would be working from School Curriculum Programs based on the new outcome-based syllabus in Health and Physical Education" (BCE, 1999, p. 3). Within BCE "efforts to ensure that public policy best suits each school context demands local 'reshaping' of the policy" (McDonald, 2000, p. 4). Such reshaping was carried out through the adoption of *Whole School Curriculum Programs (WSCP)* which "are a translation of current Queensland syllabuses, guidelines and courses through the lens of the Learning Framework and needs of students within a specific BCE school community" (BCE, 2003b, p. 4). The responsibility of which was that of school administrative teams, namely the Principal and Assistant Principal.

Since the end of 2001 there has no longer been any Health and Physical Education Officers employed by BCE (BCE, 2006b) or any professional development provided to teachers within this learning area. Although BCE (2005) published the *Strategic Renewal Framework 2002-2006* to guide and inform school communities in the renewal of all curriculum areas, there was no specific detail as to how this was to be accomplished nor the degree of importance that could be afforded the HPE learning area. This would imply that HPE syllabus policy implementation support has ceased and that equity is evident in HPE practice as the various national, state, and system specific policy documents recommend. There are presently 13 Religious Education Curriculum Officers/ Moderators employed by Brisbane Catholic Education (BCE, 2006a) to support schools but regrettably no Curriculum Officers for the HPE key learning area.

Purpose of Study

The purpose of this study was to evaluate the practice of the 1999 HPE Syllabus and policy documents in three BCE primary schools of varying enrollment numbers. Another purpose is to identify good HPE practice for the benefit of the ICHPER-SD Journal of Research readers.

The overarching general research question that guided conduct of this research was: How is the key learning area Health and Physical Education being taught within three BCE primary schools?

The specific research questions were:-

1. How are teachers in these BCE schools implementing the HPE curriculum documents?
2. What readily accessible resources do schools have to assist with the implementation of Health and Physical Education?
3. What are teachers' perceptions with regard to the HPE Key Learning Area?
4. What are the students' perceptions of the HPE Key Learning Area?
5. What implementation strategies are required to optimize HPE practices in BCE schools?

Research Design

This qualitative, interpretive study is most appropriate due to the significance of constructed meanings developed from the interpretation of shared experiences and perspectives. The perspectives differed depending on the context of the school and the experiences of the participants within the school. From within an interpretivist theoretical perspective, a symbolic interactionist lens was applied for the purpose of investigating how Health and Physical Education is taught. Symbolic interactionism as a perspective "focuses on the human being and tries to understand human behaviour" (Charon, 1998, p.12). The key assumptions of symbolic interaction are that "people transmit and receive symbolic communication when they socially interact, people create perceptions of each other and social settings, people largely act on their perceptions, and how people think about themselves and others is based on their interactions" (Neuman, 2000, p.60). The symbolic interactionist lens was applied during interviews, observations and document analysis involving teacher and student participants.

The methodology chosen to construct meanings through capturing the context of each school was 'evaluative' and 'multiple' case study (Merriam, 1998). The research questions, the data to be generated and the resources available indicated that this qualitative study was best suited to a small-scale sample with a deep understanding, rather than a large-scale validation. The sites for the three case studies involved: one small sized BCE primary school (less than 200 students); one medium sized BCE primary school (200 - 400 students); and one large sized BCE primary school (over 400 students). The three case studies were selected as representative of their different demographics, pertaining to their size as measured by enrollment numbers, their geographic location and their socio-economic status.

The researcher in "qualitative research is often the primary instrument for data collection and analysis" (Merriam, 1998, p. 7), noting the differences between what was planned and what actually occurred (Anderson, 1990). There was only one researcher operating as data gatherer and analyser during this interpretive study. "In qualitative research the investigator is taken to be actively involved in the process of data collection and analysis and needs to be aware of the flow of this process" (Sarantakos, 1998, p. 54). The methods engaged so as to enable precision of details within the chosen theoretical framework were interviews: semi-structured and focus group, questionnaire, reflective journal, observations and document analysis (table 1). The participants were teachers and students from the respective schools and the research questions guided conduct of this research and generated data.

Table 1. ***Research Framework within which the specific methodology has been selected***

Epistemology	Constructionism
Theoretical Perspective	Interpretivism - Symbolic Interactionism
Research Methodology	Case Study
Data Generating Methods	Interviews; Semi-structured Interviews; Focus group Reflective journal Observation Document Analysis

Methods

In the three schools, participants were chosen intentionally as representatives of each school/case. HPE specialist teachers were key participants to interview. If the school did not employ a HPE specialist then the sports coordinator/ HPE lead teacher was interviewed. These key participants together with three classroom teacher representatives, one each from the early years, middle years and upper years of the school respectively, were interviewed using a semi-structured interview. These research questions encompass issues of syllabus implementation, available resources and teachers' perspectives. HPE lessons (Physical Activity Strand) were observed to supplement the issues raised in the semi-structured interviews. A variety of lessons were observed to represent the three sections of the school, early, middle and upper years. Samples of student participants from the observational classes were chosen for focus group interviews.

The student participants were also chosen to be interviewed to seek their responses. There were three focus group interviews within each school/case. One focus group with representatives from a class in the early years, one with representatives from a class in the middle years and one with representatives from a class in the upper years of the school. Maximum variation representation (Glaser & Strauss, 1967) involved "identifying and seeking out those who represent the widest possible range of the characteristics of interest for the study" (Merriam, 1998, p. 63). A maximum variation representation process was employed, by means of a questionnaire, to select four student representatives with a high interest level in physical activities (two boys and two girls) and four student representatives with a low interest in physical activities (two boys and two girls). The questionnaire results were confirmed by each focus group's respective classroom teacher. As Case Study One school had a total enrollment of less than 200 students, there were fewer students in each sample class from which to choose student representatives. Therefore, the focus group within this case study school was reduced in number from eight to six student representatives (table 2). A maximum variation representation process was used, by means of a questionnaire, to select two students with a high interest level in physical activities (one boy and one girl), two students with little interest in physical activities (one boy and one girl) and two students with medium interest in physical activities (one boy and one girl). All interviews were conducted by the researcher.

Table 2. ***Research Participants per case/school***

Data Generating Strategy	Semi-Structured Interview (Total Teachers)	Interview Focus Group (Total Students)	Observations of Teachers	Observations of Students
Case Study One School (less than 200 students)	3	18	3	65
Case Study Two School (200-400 students)	4	24	1	81
Case Study Three School (over 400 students)	4	24	1	83
Total	11	66	5	229

Data Analysis

An interpretivist data analysis strategy was used for the purpose of this research study. Each case study investigates a different context and the narrative/descriptive analysis strategy was deliberately chosen to enable the communication of these stories (Merriam, 1998). As an interpretivist is committed to hearing the stories of the participants, their perspectives of the world they experience (Taylor & Bogdan, 1998). The researcher attempted to capture the stories by interpreting the culture of the school through reported experiences, understandings and other collected data, resulting in a learning episode for both reader and researcher (Glesne, 1999).

Each individual case was analysed using Wellington's (2000) simplified version of the *'Constant Comparative Method for Analysing Qualitative Data'* and was described. The general stages include immersion, reflection, analyzing, synthesizing, returning and presenting. Cross-case analysis was presented at the end of the analysis of each case. Repeating the same analysis process, Wellington's stages were used to analyse the data across the case

studies. Hence, in an attempt to answer the research questions, units of meaning were formed, coded, and categorized with other similar units. There was one researcher who conducted all interviews and analysis. The interviewer was a doctoral candidate who was guided through the process by regular consultations with experienced research supervisors.

Verification and Ethical Issues

There were two ethical clearances that were granted before this interpretive research was conducted. They were an ethical clearance from Australian Catholic University, which involves presentation of a research proposal to the University Research Projects Ethics Committee; and from Brisbane Catholic Education. Furthermore, confidentiality and anonymity were assured during the study as pseudonyms were assigned to protect the privacy of the participants and schools.

The research questions, the data to be generated and the resources available indicated that this qualitative study was best suited to a small-scale sample with a deep understanding, rather than a large-scale validation. The three case study schools were purposefully chosen to represent a cross-section of BCE primary schools and participants were chosen intentionally as representatives of each school/case.

A conscious effort was made by the researcher to be fair in the generation of data, in the interpretation of data, in the formulation of theories and in the presentation of the data. Being able to trust research results is especially important to professionals in applied fields, such as education, "in which practitioners intervene in people's lives" (Merriam, 1998, p. 198). As the role of the researcher was that of both author and instrument (Patton, 1990), bias was consciously avoided and if recognized, minimised. Fairness was achieved through constant peer debriefing where experienced researchers (supervisors) critically reflected on the process of the data generation and analysis during the research. This took place in the form of discussions and proof reading of detailed research reports.

Member checks involved soliciting informants' views as to credibility of findings and these were utilized to confirm the plausibility and credibility of interpretations. Themes and conclusions were checked within the other data generating methods, for example, a finding during an observation was further explored during an interview, which as a result, strengthened the quality of the research. This addresses the issue of public disclosure of processes and gives the themes congruence and verisimilitude (Anfara, Brown & Mangione, 2002).

Strength was also accomplished through prolonged engagement with data sources. This was achieved by observing the same class as the one from which student interviewees were drawn. That is, the class teacher was interviewed, her/his students were chosen for the focus group interview and the same whole class were then observed during a HPE physical activities lesson. The observation was not limited to that of the lesson, but rather every interaction with individuals constituted an observation. Therefore, there were consistent observations of emerging issues. The duration of engagement per case/school was over a one month period which is a considerable amount of time for the methods being employed, hence, the period of engagement for the entire research study was a 3-month period. Credibility of the study was achieved by employing triangulation, the process for using multiple perceptions to clarify meaning (Stake, 1994). The multiple perceptions were obtained from observing and interviewing some of the participants.

Findings

Summary of Case Study One school (less than 200 students)

Case Study One school teacher participants were all experienced teachers, with at least 10 years teaching experience. None of the teacher participants had specialist training in HPE and only one had received professional development in the Queensland HPE syllabus. The school did not have a specialist HPE teacher and classroom teachers were responsible for the implementation of all three strands of the syllabus. The Physical Activity strand was given the most consideration and time within Case Study One school. There was no Whole School Curriculum Program for HPE (Table 3) and concepts and skills were few and often repeated. The degree of coverage of the HPE curriculum depended on each class teacher and there was no Perceptual Motor Program in the early years of the school. All teacher participants agreed that there were connections between HPE and the Religious Education curriculum. There were no facility limitations for implementing HPE.

Table 3. ***Summary of Cross-Case Data Analysis Findings***

	Case Study One	Case Study Two	Case Study Three
HPE specialist	No	√	√
HPE specialist in-serviced in syllabus	No	√	No
Number of Classroom Teacher participants Professionally developed in new syllabus	1	2	2
Clear knowledge of who is responsible for the different strands	√	√	No
No extra cost involved (paying other organizations to implement syllabus)	Extra cost	√	Extra cost
Number of Classroom Teacher participants who evidenced HPE in book	1	2	0
Whole School Program	No	√	No

Case Study One school had very good facilities, however some were showing signs of neglect. Equipment was sufficient, though Health and Personal Development resources were either lacking or were in need of updating. Students enjoyed HPE and teachers enjoyed teaching HPE, believing it to be valuable. Teachers shared that the students' had medium interest in physical activities, which

was reinforced through observations and focus group interviews (Table 4). The teacher participants did not believe that the school was disadvantaged by not having a specialist HPE teacher, although observations suggested that the students' movement and manipulative skills were considerably lower when compared with the other Case Study schools. Healthy living was promoted through organisations visiting the school such as the Life Education van, Jump Rope For Heart, Dance Fever and through their sun safety rule 'No hat, No play'.

Table 4. ***Comparison of Case Study School Student Participants' Interest in HPE***

	Case Study One	Case Study Two	Case Study Three
Teachers' perception of students interest levels in HPE	Medium	High	High
Number of students interviewed in each focus group	6	8	8
Number of Early Years student participants whose favourite subject was HPE	0 (0%)	6 (75%)	0 (0%)
Number of Middle Years student participants whose favourite subject was HPE	2 (33%)	3 (37.5%)	0 (0%)
Number of Upper Years student participants whose favourite subject was HPE	0 (0%)	4 (50%)	0 (0%)
HPE specialist teacher	No	Yes	Yes

Summary of Case Study Two school (200 – 400 students)

Case Study Two school appeared to have a well-designed and implemented Physical Education curriculum program which both teachers and students believed to be important, beneficial, and enjoyable. The school had an experienced Health and Physical specialist teacher, providing each class with at least one forty minute lesson per week. The Health and Physical Education specialist was responsible for the Physical Activity Strand of the program and the classroom teachers were responsible for the Health and Personal Development Strands (Table 3). The teacher participants had received professional development to varying degrees related to the contexts in the 1999 HPE syllabus. Numerous physical activities were presented wide in scope and variety, utilising the school's facilities and limited space. A lack of space and grassed area was compensated for by using a Rugby field which was 400 metres from the school. Equipment and resources were considered by the researcher and teachers to be adequate. Although the Physical Activity Strand was well established, the Health and Personal Development strands required further development in a Whole School Curriculum Program. All teacher participants believed that the Personal Development strand was well connected with the Religious Education curriculum because both learning areas encouraged self belief, awareness of others and empathy. They also felt that the HPE specialist offered a range of physical activities and sports within the school which were perceived as a school strength by the teacher participants. For this reason teachers shared that the students' had high interest in physical activities, which was reinforced through observations and focus group interviews (Table 4). It was suggested by many participants that healthy living was further promoted by the availability of healthy food at the tuck shop, as well as by a school 'No hat- No play' sun safety rule, through a Walk to School Program, together with Auskick and lunch time touch football and netball competitions.

Summary of Case Study Three school (over 400 students)

Case Study Three school had a full-time HPE specialist teacher who was given one full day release from teaching to coordinate the sports program. The school has ample space, many facilities, sufficient equipment and modern Health and Personal Development resources such as books, videos and programs. The four teacher participants had varying degrees of teaching experience. The teacher participants who had begun teaching in the BCE system since 2001 were not familiar with the information in the HPE syllabus. They had not received inservice training within this learning area and indicated that they lacked confidence implementing it. This included the specialist HPE teacher. Furthermore, the beginning years' teacher had no development training in the HPE learning area (Table 3). All teachers believed that HPE connected well with the Religious Education curriculum and could be integrated successfully to enable teaching and learning efficacy.

There were mixed and contrary views held by the teacher participants in relation to who was responsible for the teaching of the three HPE strands: Physical Activity; Health; and Personal Development. Two teacher participants believed the HPE specialist was responsible for teaching all three strands, whereas the HPE specialist believed that she was responsible for only the Physical Activity strand (Table 3). The HPE specialist teacher claimed that the Year 1 children (4-5 years) were involved in the Perceptual Motor Program using a buddy system with older students. However no teachers or students could verify this. Whole School Curriculum Programs (WSCP) were mandatory within the BCE system for curriculum consistency and accountability within schools. Case study three school did not have a WSCP for any of the three HPE strands (Table 3).

All teacher participants reported that the HPE learning area was very valuable and students appeared to enjoy HPE physical activities. However, the students did not appear to be as interested in the key learning area as the teachers perceived them to be (Table 4). The students believed that HPE helped to reduce stress. The HPE specialist teacher and student participants believed that healthy living was promoted through visits from organizations such as the Life Education van, Dance Fever and Jump Rope For Heart, and the school rule, 'No hat, no play'. However, although the school had very good resources and facilities teacher participants listed all three strands in the HPE syllabus: Physical Activity; Health; and Personal Development; as areas requiring attention.

Cross Case Summary Analysis

There were some similarities and differences between the three Case Study schools. Related to similarities, sport and physical activity had a long and proud history in all the Case Study schools. Recently all had experienced a shift towards an inclusive, socially just curriculum. The degree of shift differed between schools and was related to teacher participants' experience, knowledge and confidence within the HPE learning area; Case Study schools' facilities, equipment and space; and consequently students' interest. Other influencing factors included Case Study school partnerships and services made within the community; whether or not the Case Study school had a HPE specialist teacher; and if the school had implemented a Whole School Curriculum Program for the HPE key learning area.

Discussion

By the completion of the HPE curriculum documents implementation phase in 2001, it appears that not one of the Case Study schools was working from a WSCP for the HPE key learning area as envisaged by the Catholic employer, BCE. Only one Case Study school, Case Study Two school, evidenced a HPE program, which was designed and implemented to address the Physical Activity Strand. This data was supported by Barry, Livingstone and Millar (2005) who proposed that Whole School Curriculum Programs (WSCP) within BCE schools are "as elusive and rare as the extinct Tasmanian Tiger" (p. 3). This idiom was used to state that there were no WSCP within schools.

Within the three Case Study schools, the degree of implementation corresponded to the HPE specialist teacher's qualifications, knowledge and experience in the HPE learning area as well as the HPE specialist teacher's ability to share or collaborate this with colleagues. When one of these areas was lacking, as in the Case Study Three school, teacher participants could not come to a consensus as to who was responsible for each of the three syllabus strands.

The implementation of all three strands was an issue across all schools. On examination inadequacy appears to be due to a number of factors. It is suggested a problem has emerged with clarity and complexity (Fullan, 2001). While no stakeholders ever really doubted the complexity of shifting paradigms from content-based to OBE, it does not appear that the strategies that have been used by BCE have been successful in clearly stating expectations/challenges, nor have they reached school principals or classroom teachers. Hence, there appears to be a breakdown between the district system (BCE) and school administrative teams, namely the Principal and Assistant Principals. Datnow and Stringfield (2000) reported that a lack of strong, clear district support negatively impacted implementation, as evident in Case Study One and Three schools. Since the end of 2001 there has been no HPE Education Officers employed by BCE nor has there been any professional development within this key learning area. This helps explain why new teachers entering the BCE schooling system lack knowledge in and familiarity with information within the HPE 1999 documents.

It also appeared that experienced teachers were more confident and had a better understanding of the HPE syllabus than younger teachers, having been provided inservices in information contained with the HPE syllabus documents. Further, teachers can be employed as HPE specialist teachers while not necessarily having specialist qualifications and quality lessons are not always implemented, resulting in negative influences on students' perceptions of physical activity (Table 4). A study by Walkley (1992) revealed that a preservice generalist teacher could graduate and begin teaching in Australian primary schools without any training in HPE. Although it is recommended that preservice primary school teacher education include units in HPE (Webster, 2001), it appears that 16 years after Walkley's study not a great deal has changed. A number of teacher participants in this study had no HPE teacher education, and many of whom had only recently graduated from their university courses. Hence, teacher participants who had begun teaching in the BCE system since the conclusion of the implementation period in 2001 (five out of eleven) were not as familiar with information within the syllabus and indicated that they lacked confidence implementing it. Therefore, of the three Case Study schools two employed a HPE specialist teacher, only one of whom had been provided inservices on the HPE 1999 syllabus. Paradoxically, the teacher with limited pedagogical knowledge in HPE was employed in the only full time role.

This lack of PE confidence and knowledge in primary schools supports findings from a study conducted by Morgan and Bourke (2005). In this study of both preservice (r = 422) and in-service (r = 63) primary school teachers, their perceptions regarding the adequacy of their HPE teacher education were evaluated. Based on the findings of this investigation a lacunae exists for research into the delivery of HPE in Australian schools, HPE in practice. While most of the related research is dated, there have been several researchers who have suggested that classroom teachers lack qualifications to deliver quality HPE programs (Moore, Webb & Dickson, 1997; Thompson, 1996; Walkley, 1992; Webb, Moore, Gray & Jessop, 1993).

Based on the results of this study the Physical Activity Strand was the only strand that was consistently and purposefully allocated sufficient teaching time. However, some schools rely on sporadic visitations from sporting organisations to implement the syllabus, often at additional cost to students. The Case Study school without a specialist HPE teacher, Case Study One generally lacked HPE resources for all strands provided in the 1999 HPE syllabus, which is the key learning area requiring advocacy. Case Study Two school's HPE advocacy was a school strength and not only did the school utilise all resources they also overcame their lack of space by developing partnerships within the community.

Schools work effectively when there are quality teachers and their accomplishments are rewarded (Fullan, 2001). This being the case, in the present investigation, no rewards were given for teacher accomplishments in relation to HPE and sports coordination except student satisfaction. Furthermore, there was an unequal allocation of HPE teacher release time for the sports coordination role. In Case Study Three, the school's HPE specialist was provided 5.5 hours release time, equivalent to one full day per week. In Case Study Two the school's HPE specialist teacher was not provided release time, nor in Case Study One where they were responsible for teaching a class. This inequality within the system occurred since 2001 when there had not been a HPE consultant within the three schools.

The present BCE system infrastructure with 13 district Religious Education curriculum officers employed to service schools and no HPE curriculum officers suggests that the unique Catholic mission can only be achieved through the key learning area of Religious Education. This is a paradox, given that the Church seeks to integrate the Christian message into people's lives by finding God in the everyday (Hutton, 1999). Data generated supports that the HPE learning area is strongly connected to the Religious Education (RE) curriculum and in particular the faith dimension of the RE syllabus (BCE, 2003a). The literature suggests that HPE has been neglected as a key learning area throughout history, whereas it should be embraced as a powerful medium providing students with many practical and social experiences living and reflecting on the Catholic tradition and gospel values (Lynch, 2004a). This research challenges Catholic education to rethink priorities and encourages them to provide support at system level for the HPE key learning area.

Conclusion

It appears that in BCE schools the HPE syllabus implementation process support ceased prematurely before all schools had sufficient time and preparation to design comprehensive school HPE programs. Furthermore, the data generated from this study clearly suggests that a WSCP for HPE is necessary for quality delivery. Teachers lacked understandings of practical ways to implement the social justice underpinnings of the syllabus and some school principals were unaware of the necessity of employing qualified HPE specialist teachers.

Teachers needed to grasp outcome-based education before they could embrace the socio-cultural approach that the 1999 HPE syllabus adopts. This appears to have been an obstacle for the implementation of the 1999 HPE syllabus, as teachers firstly required a paradigm shift in their curriculum and pedagogical thinking. Data generated in this study suggests that it was not just a matter of educating specialist teachers in new critical pedagogies but rather educating inexperienced teachers in all HPE pedagogies and quality teaching practices.

With schools often sharing the teaching of the three HPE syllabus strands, as in Case Study Two and Three schools, effective communication and effort is essential. A lack of communication and effort seemed to be a detrimental factor across all three Case Study schools during the implementation process. Case Study Three school's teacher participants had fundamental misunderstandings among them as to whose responsibility it was to implement the different strands of the HPE syllabus. Schools not having part or all of a Whole School Curriculum Program for HPE suggests that there well may have been communication problems between the employing authority (BCE) and the principals who were responsible for facilitating the implementation of the HPE curriculum and for employing specialist HPE teachers. Effective communication is essential and assumes greater importance in the absence of system-wide HPE curriculum officers.

Successful implementation is possible as manifest by Case Study Two school, having a very positive effect on students' attitudes towards and ultimately their participation in physical activity (Table 4). Case Study Two school teacher participants and the HPE specialist teacher had a good understanding of the syllabus and the socio-cultural approach needed to implement it. The school had a Whole School Curriculum HPE program for the Physical Activity strand that was diverse in physical activities and developmentally appropriate. The HPE specialist teacher used eclectic pedagogies as required and had a good understanding of the way social justice principles could permeate lessons, choosing social pedagogy often over dominant scientistic pedagogies. As a result, many students of varying interests and abilities enjoyed physical activities, suggesting that these factors influenced and enabled a marriage between policy ideals and successful implementation in practice. This was achieved despite having the least space and facilities of the three Case Study schools.

Data suggests that some graduating teachers lack knowledge and confidence to teach HPE physical activity strand so as to promote equity which underpins the socio-cultural approach adopted by the 1999 P-10 HPE syllabus (QSCC, 1999c). Furthermore, discourses and ideologies exist unchallenged within the hidden curriculum and adverse issues reemerge. The best time for children to learn and refine their motor skills is in the preschool and early primary school years, learning fundamentals of movement and skill acquisition. Case Study One and Three schools appeared to fail to do this, an issue that needs to be addressed, especially with the introduction of a Preparatory year in BCE and all Queensland schools. One recommendation would be for further professional development within the HPE key learning area.

BCE need to continue the implementation process. A relationship existed between successful implementation of the syllabus and increased student interest in physical activities. Hence, when teachers have been educated and trained to deliver quality HPE learning experiences students appear to have a greater interest in physical activities. This has the potential to increase lifelong physical activity participation which may be associated with current obesity concerns.

As this research study was only a small scale sample the data generated was limited by its nature. Hence, it is recommended that a large scale research project be conducted to ascertain verisimilitude of findings pertinent to other schools in BCE and in other education systems, within Queensland, Australia and globally. Such studies would optimize quality HPE delivery and give renewal, such as the 50th ICHPER – SD Anniversary World Congress, direction for promotion of active healthy lifestyles.

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Appendix 1

Student Focus Group Interview Schedule

Student Focus Group (Early/ Middle/ Upper)
Interview Schedule

1. Tell me your names and how long you have been at this school.
2. What do you do at lunch time? (activities)
3. What different things do you learn about in school?
4. What do you like to learn about most during school time? (favourite subject)
5. What activities do you play when you are not at school? (t.v, computer games, football etc)
6. What different sports do you do at school? (swimming etc) What sports do you play outside of school? (bike riding, netball etc)
7. What do you do during HPE/ PE? (Ever in the classroom? Have an exercise book?)
8. What do you enjoy about HPE?
9. What are your favourite games or activities in HPE? (Do you need special equipment for these?)
10. Tell me about the times when you really didn't feel like joining in the activities. (Does everyone join in?)
11. Why is HPE important?
12. What else do you do in the school to help you to be healthy?

Appendix 2

Semi-structured Interview Schedule

Classroom Teacher (early/ middle/ upper years)
Interview Schedule

1. Name and role
2. Tell me about your teaching experience.
3. What has your training/ study involved for teaching? (Institution, qualifications and training)
4. Tell me about your dealings with the HPE syllabus (1999).
5. What do you like about the (1999) HPE syllabus?

6. How does the school manage to fit the demands of the HPE syllabus into the crowded P-7 curriculum? (3 strands and 1.5 hours per week)
7. What equipment and facilities does the school have for HPE?
8. What physical activities do you think are most important to focus on in the early/ middle/ upper years?
9. How interested are the students in HPE? (attitudes towards)
10. How are disinterested students handled during HPE lessons?
11. What are the advantages/ benefits of having a specialist HPE teacher? (If applicable)
12. What are the disadvantages of having a specialist HPE teacher? (If applicable)
13. How important do you think the HPE learning area is?
14. How do the other teachers in the school view HPE?
15. What does the school do well in the HPE curriculum?
16. What areas of the HPE curriculum require attention?
17. How is healthy living promoted throughout the school? ■

Accomplishments and Experiences Necessary for NCAA Division III Athletic Trainer Success

by Robert C. Schneider, Timothy J. Henry, and William F. Stier Jr.

Abstract

A 22 statement Likert-type scale survey was used to determine accomplishments and experiences necessary for the success of athletic trainers at National Collegiate Athletic Association (NCAA) Division III institutions. The survey was mailed to all 410 head athletic trainers of NCAA Division III institutions in the United States. There were 185 surveys returned for a 45.1% return rate. Means of the respondents were computed and it was found that the two "accomplishments" believed to be essential by the highest rate of athletic trainers were *establishing positive relationships with coaches* (55.6%) and *relating to athletes* (69.3%). The two "experiences" found to be essential at the highest rates were *multi-tasking* (42.2%) and *performing successfully in high stress environments* (43.8%).

Accomplishments and Experiences Necessary for NCAA Division III Athletic Trainer Success

The profession of athletic training got its start in the early 1900s when it was recognized that there was a need for someone, other than a coach, to take care of injuries that were being suffered in college football. In fact the number of deaths and severe injuries were so high in those years that President Theodore Roosevelt threatened to abolish football on college campuses. Recognizing the need for injury prevention and care, larger colleges and universities across the country slowly began hiring athletic trainers. Later, the National Athletic Trainers' Association (NATA) was founded in 1950 with a beginning membership of 200 persons (Trampf & Oliphant, 2004). It did not take early workers long to combine a scientific approach with their enthusiasm for athletic training. Within 40 years, a complex teaching and learning plan had evolved. Today through its evolution, sport and exercise medicine is an established medical specialty, the aims of which are to understand and to meet the needs of an exclusive group of patients (Harland, 2005).

Since being founded the NATA has grown to almost 30,000 members (National Athletic Trainer's Association, 2006b). With growth comes a need to ensure that athletic trainers are accomplishing, and experiencing what is required to meet the needs of their athletes and communities. According to the U.S. Bureau of Labor and Statistics (BLS) (2006), athletic trainers held about 15,000 jobs in 2004 and were found in every part of the country. The BLS also indicated that employment of athletic trainers is expected to grow much faster than the average for all occupations through 2014 (U.S. Bureau of Labor and Statistics).

Given this strong growth of athletic training jobs, it is important to identify particular accomplishments, and experiences that are necessary for the success of Division III athletic trainers. This study gathered, compiled, and generated information that will assist Division III athletic trainers in their quest to succeed in the profession of athletic training. Results of this study will also be helpful to athletic training program directors as well as athletic trainer's associations that hold the responsibility of creating accreditation standards that include but are not limited to curriculum development. Concerns may exist that the quality of athletic trainers will be compromised in the interest of meeting the projected rapid increase in numbers of athletic trainers over the next several years. These concerns can be allayed, to some extent, through research such as this national study that intends to help maintain the quality of athletic trainers.

Need for the Study

There is a void in the literature that addresses the accomplishments, and experiences necessary to succeed as an NCAA Division III athletic trainer. This study has attempted to begin filling that void by asking athletic trainers at NCAA Division III schools what is necessary to succeed as an NCAA Division III athletic trainer. Prospective athletic trainers as well as those responsible for preparing athletic trainers will benefit from this study.

Using the National Athletic Trainers' Association Board of Certification (NATABOC) as a foundation, Barrett, Gillentine, Lamberth, and Daughtrey (2002) indicated that the profession of athletic training has the responsibility of identifying new ways to advance in the area of human resources and job satisfaction in order to propagate a satisfied, well adjusted, balanced, and dedicated professional. Kahanov and Andrews (2001) proposed that a better understanding of employer hiring criteria may increase athletic trainers' ability to market themselves and, in turn, begin to take steps toward achieving success. This study will not only identify new ways that athletic trainers can advance in job satisfaction but also will assist those who are interviewing and marketing themselves for athletic training positions.

After discovering what is necessary for the success of athletic trainers, educators will be able to more effectively advise, teach, and generally point prospective athletic trainers in the proper direction to succeed. Additionally, after gaining this knowledge, prospective athletic trainers will be able to, independently, take steps toward succeeding in the field of athletic training. The empirically based results of this study will provide a foundation to guide prospective athletic trainers in their quest to achieve success in their chosen profession of athletic training.

Background Information

Necessary Skills to Gain Employment

Preparation for athletic training employment through accredited athletic training degree granting programs include formal instruction in areas such as injury/illness prevention, first aid and emergency care, assessment of injury/illness, human anatomy and physiology, therapeutic modalities, and nutrition (National Athletic Trainer's Association, 2006a). In a study that surveyed 111 athletic training employers, Kahanov and Andrews (2001) found that four hiring criteria factors emerged as desirable characteristics for

athletic training employers: personal characteristics, educational experience, professional experience, and professional attributes. Kahanov and Andrews also proposed that a better understanding of employer hiring criteria and an emphasis on personal characteristics might make athletic trainers more successful in the interviewing and hiring process.

The Demands of Athletic Training and Working with Others

The NATA described certified athletic trainers as being health care professionals who specialize in preventing, recognizing, managing, and rehabilitating injuries that result from physical activity (National Athletic Trainer's Association, 2006a). According to Edelman (2006) it is unrealistic to expect one athletic trainer, who teaches during the day, to cover all the athletic demands of the high school. When schools only had one trainer at a school coaches were found to be unhappy (Edelman).

Certified athletic trainers must cooperate with other health care professionals, athletics administrators, coaches, and parents (National Athletic Trainer's Association, 2006a). Harland (2005) pointed out the importance of an experienced medical team finding a way to please both the athlete and the coach. In a study by Robbins and Rosenfeld (2001) 35 male and female Division I college athletes, from various sports, were surveyed and it was found that athletes who received social support during rehabilitation primarily received it from their athletic trainers (Robins & Rosenfeld). Lockard (2005) stated the need for athletic trainers to have good social and communication skills along with the ability to collaborate with others.

Experiences of Athletic Trainers

According to Lockard (2005), first and foremost, athletic trainers must assume the responsibility of injury prevention, which includes educating athletes and patients about what they should do to avoid putting themselves at risk for injuries. Domains of licensed athletic trainers include prevention, recognition, evaluation, and assessment, immediate care, treatment, rehabilitation and reconditioning, organization and administration, and professional development and responsibility (Trampf & Oliphant, 2004).

Arnold et al. (1998); and Lockard (2005) acknowledged that many collegiate athletic trainers have experience related to administrative responsibilities. Additional experiences rated as important were collegiate clinical experiences and reasoning skills (Arnold et al., 1998; Heinrich, 2005). Finally, experiences given high ratings of importance by collegiate employers were computer literacy, and oral recommendations (Arnold et al., 1998).

Purpose of the Study

The purpose of this study was to determine the essentiality, level of importance, or irrelevance of selected accomplishments, and experiences necessary for athletic trainer success. An expected outcome of this study was to provide prospective athletic trainers and those responsible for preparing prospective athletic trainers, with information necessary for their success.

Methods

Survey

A survey was developed to determine accomplishments, and experiences necessary for the success of NCAA Division III athletic trainers. The survey consisted of 22 Likert-type scale statements. The substance of the statements was based on current existing literature related to the area being studied, input from the researchers, and insights from experts (athletic trainer practitioners) in the field of athletic training. To indicate the extent that accomplishments, and experiences might be necessary for the success of Division III athletic trainers, the athletic trainers selected from one of the following Likert-type scale options: Essential (5); Very Important (4); Important (3); Not Very Important (2); and Irrelevant (1). For the purpose of helping address content validity, the creation of the survey statements were grounded in related literature and supported by the expertise of the researchers in the area of athletic training.

Subjects

The subjects in this study were all NCAA Division III head athletic trainers in the United States and totaled 410 in number. Of the 410 subjects, 185 returned the survey for a return rate of 45.1%. A list of the NCAA Division III member institutions was obtained from the NCAA national headquarters in Indianapolis, Indiana.

Procedures

Copies of the survey were mailed to the subjects with a cover letter that provided them with the information to self-administer the survey. After completing the survey, the subjects returned it in a self-addressed, stamped envelope to the principal investigator. It was made clear to the subjects, in the cover letter, that they were under no obligation to participate in the study and could exercise that option by choosing to not complete and return the survey. The cover letter also notified subjects that if they chose to complete and return the survey it would serve as an indication that they consented to participating in the study. Upon return of the surveys, means were computed for each response category of each Likert-type scale statement.

Findings

The findings displayed in Table 1 revealed varied opinions regarding past accomplishments, and experiences that Division III head athletic trainers believed to be essential, very important, important, not very important, and irrelevant in order to be successful as a Division III athletic trainer. Most items were found to be at least important to the success of athletic trainers; however, a few items were found to be irrelevant or not very important.

Accomplishments

Having a record of preventing and solving problems was believed to be very important by 51.8% of the athletic trainers while 20.1% believed it to be essential for the success of Division III athletic trainers. The rate of athletic trainers who indicated that having a record of preventing and solving problems was important was 23.3%. Successfully working with others was perceived to be essential by 49.7% of the athletic trainers and 39.5% of the trainers believed that successfully working with others was very important. Having a record of using/creating a sports medicine handbook for an athletic program was perceived to be important by 56.7% of the

Table 1. ***Accomplishments, and Experiences Necessary for Athletic Trainers' Success***

	Essential	Very Important	Important	Not Very Important	Irrelevant
Accomplishments					
Preventing and Solving Problems	20.1	51.8	23.3	3.2	1.6
Working with Others	49.7	39.5	6.4	2.2	2.2
Using/Creating a Sports Medicine Handbook	4.9	18.4	56.7	16.8	3.2
Working with Community	9.7	11.4	49.7	26.0	3.2
Positive Working Relationships with Allied Health Professionals	35.1	41.7	20.5	0.0	2.7
Positive Working Relationships with Coaches	55.6	37.3	2.7	2.2	2.2
Relating to Parents	21.6	44.3	23.3	9.2	1.6
Positive Working Relationships with Administrators	35.7	47.5	12.4	2.2	2.2
Relating to Athletes	69.3	25.4	1.6	0.5	3.2
Professional Experiences					
College Athlete	7.0	11.9	18.4	38.4	24.3
High School Athlete	2.2	14.6	31.8	33.0	18.4
Head Athletic Trainer (College)	5.4	20.0	39.5	26.5	8.6
Assistant Athletic Trainer (College)	9.2	28.7	43.2	15.1	3.8
Graduate Athletic Trainer (College)	7.0	29.7	39.5	15.7	8.1
Athletic Department Policy Handbook	4.3	16.8	46.5	24.3	8.1
High School Coach	3.8	3.8	9.7	27.6	55.1
Teacher in Athletic Training Curriculum	2.2	5.9	30.3	39.5	22.1
Supervising Undergraduate Athletic Training Students	3.2	14.1	44.8	23.8	14.1
Promoting Sports Medicine	4.9	16.2	45.9	23.8	9.2
Multi-tasking	42.2	37.3	15.1	2.2	3.2
Performing Successfully in High Stress Environments	43.8	43.9	6.4	4.3	1.6
Dealing with Assertive Coaches	31.9	47.5	16.8	2.2	1.6

Note. The values represent mean percentages of the Likert-type scale responses

athletic trainers.

The trainers found working with the community (public relations) to be important at a rate of 49.7%. On the other hand, 26.0% of the athletic trainers believed working with the community was not very important. It was indicated by 41.7% of the athletic trainers that having positive working relationships with allied health professionals within the community was very important. While 20.5% believed having positive work relationships was important, 35.1% believed such relationships to be essential.

When combining the rate of athletic trainers who believed having a positive relationship with coaches in the school as being very important (37.3%) with being essential (55.6%), 92.9% believed having positive relationships with coaches in the school was at least very important. Finding the accomplishment of having a successful record of relating to and with parents as being very important were 44.3% of the athletic trainers followed by 23.3% who believed it to be important and 21.6% essential.

Having positive working relationships with administrators within the school was found to be very important by 47.5% of the athletic trainers and essential by 35.7%. Having a successful record of relating to and with student-athletes was reported by the athletic trainers as the accomplishment believed to be most essential (69.3%) to be successful as an athletic trainer. And, 25.4% of the athletic trainers indicated that relating to and with student-athletes was very important to succeed as an athletic trainer.

Professional Experiences

Essential and important.

Generally, the athletic trainers surveyed indicated that experience as a head athletic trainer at the college level was believed to be very important (20.0%), or important (39.5%), yet 26.5% believed it to be not very important. Experience as an assistant athletic trainer was perceived to be very important (28.7%) and important (43.2%). Similarly, experience as a graduate assistant athletic trainer at the college level was perceived to be very important by 29.7% and important by 39.5% of the athletic trainers surveyed.

Performing successfully in high stress environments was considered essential by 43.8% of the athletic trainers and very important by 43.9%. In order to succeed as an athletic trainer, athletic trainers indicated that it was essential (42.2%) and very important (47.3%) to have experience in the area of multi-tasking. The athletic trainers also indicated that it was essential (31.9%) and very important (47.5%) to have experience dealing with assertive coaches.

Irrelevant and not very important.

Items in the accomplishments category were generally believed to be more important to the success of athletic trainers than items in the professional experience category. In fact one item, experience as a coach, was perceived by over half (55.1%) of the athletic trainers as being an irrelevant professional experience necessary for the athletic trainer. And, 27.6% of the athletic trainers considered experience as a coach to be not very important.

Athletic trainers' responses regarding experience as a teacher in an athletic training curriculum were somewhat varied. Over one-fifth (22.1%) indicated that experience as a teacher in an athletic training curriculum was irrelevant and 39.5% indicated it was not very important. Still, 30.3% perceived it to be important. Experience as an athlete in college was not held in high regard by the coaches either. Nearly one-fourth (24.3%) believed that experience as an athlete in college was irrelevant and 38.4% perceived it to be not very important. Dismissed by the coaches at a similar rate was experience as a varsity high school athlete. Approximately one-third (33.0%) indicated that experience as a varsity high school athlete was not very important and 18.4% indicated that it was irrelevant to an athletic trainer's success.

Nearly one-fourth of the following professional experiences were viewed by the athletic trainers as being not very important while all of the same items were believed to be important by at least 44% of the athletic trainers. Experience working with an athletic department policy handbook was found to be not very important by 24.3% of the athletic trainers and important by 46.5%. Experience in supervising undergraduate athletic training students was found to be not very important by 23.8% of the athletic trainers and important by 44.8%. And experience in promoting sport medicine within the community was found to be not very important by 23.8% and important by 45.9% of the athletic trainers.

Discussion

The findings in this study addressed the accomplishments, and experiences necessary to be successful as a NCAA Division III athletic trainer. This study's findings supported those by Lockard (2005) who found that athletic trainers should be able to manage difficult situations and the stress associated with them, such as when disagreements arise with coaches, clients, or parents regarding suggested treatment. Lockard also stated that athletic trainers should be organized, be able to manage time wisely, be inquisitive, and have a strong desire to help people. Similarly along the lines of helping people, this study found that athletic trainers should have positive relationships with people in order to succeed as an athletic trainer.

In a study conducted by Kahanov and Andrews (2001) where 111 athletic training employers were surveyed it was found that four hiring criteria factors emerged as desirable characteristics for athletic training employers: personal characteristics, educational experience, professional experience, and work-related (professional) attributes. This study, in general, supported the aforementioned findings of Kahanov and Andrews in that relating to athletes, and having positive working relationships with coaches as well as the experience of being able to multi-task were found to be either essential or very important to the success of athletic trainers. Also in agreement with the importance of athletic trainers being able work with others is the NATA which, more specifically, adheres to the notion that certified athletic trainers must work in cooperation with not only coaches but also athletics administrators, coaches, and parents and also under the direction of a licensed physician (National Athletic Trainer's Association, 2006a). Furthermore, Harland (2005) generally indicated that it was important that athletic trainers have positive relationships with authorities. Specifically, Harland stated the need for medical teams to please athletes as well as authorities.

Having a positive relationship with coaches in the school was found to be essential or very important in this study and supported the works of Edelman (2006); and Lockard (2005). Edelmen found that coaches became unhappy when athletic trainers were asked to assume numerous responsibilities to the point where they could not cover all of the athletic demands of the high school. Lockard (2005) further reinforced the importance of having positive relationships by stating that because athletic trainers deal with a variety of people, they need good social and communication skills.

Even though the NATA emphasized the importance of certified athletic trainers being able to work with a coach (National Athletic Trainer's Association, 2006a), the Division III athletic trainers in this study did not view experience as a coach as relevant to their success. Certainly a distinction can be made between experience as a coach and being able to work with a coach. The respondents in this study valued working with a coach but not experience as a coach. The necessity of athletic trainers being able to work with a coach was reinforced by the NATA (National Athletic Trainer's Association).

Also perceived to be irrelevant or not very important in this study was experience as an athlete in college or high school. Literature, however, is scarce that directly relates to information indicating a correlation between athletic trainers' success and experience as a high school or college athlete. In this study over one-fifth of the athletic trainers indicated that experience as a teacher in an athletic training curriculum was irrelevant (22.1%) and 39.5% indicated that it was not very important. On the other hand, Lockard (2005) pointed out the importance of education when indicating that an

athletic trainer's job responsibilities begin with injury prevention, which includes educating athletes and patients about what they should do to avoid putting themselves at risk.

Conclusions

It is essential that NCAA Division III athletic trainers have positive working relationships with coaches. It is also essential that Division III athletic trainers are able to improve their ability to work with athletes. Furthermore, it is essential or at least very important that athletic trainers be able to multitask and perform in high stress environments. Moreover, the ability to deal with assertive coaches is at least very important to the success of the Division III athletic trainer.

Having the professional experience of a high school coach is irrelevant to becoming successful as a Division III athletic trainer. And it is not very important to have teaching experience or experience as a college or high school athlete to succeed as an athletic trainer at the NCAA Division III level.

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Knowledge of Appropriate Practices of Elementary School Physical Education

by Brad Strand, David Barney and Niki DeFries Evans

Abstract

In the past 10 years the National Association for Sport and Physical Education has written or rewritten three appropriate practices documents for k-12 physical education. For this paper the results of four independent studies that all used the same 40-statement survey based on the elementary physical education appropriate practices is reported. The four studies included four separate groups of individuals: physical education teacher education (PETE) majors (n=99), elementary education majors (n=138), general college students n=360), and parents of elementary aged children (n=311). Overall, PETE majors were generally knowledgeable of appropriate practices; however, for certain statements, the other population groups scored better than PETE majors. Within the PETE majors, senior students tended to score better than underclassmen.

Knowledge of Appropriate Practices of Elementary School Physical Education

"In my elementary school we used to play a game called Trench, about 50 little balls being thrown around at you and your teammates. I think the only thing that game prepared us for was an all out ambush in a war. Although the balls didn't hurt much I think it carried on through the attitudes and actions of the other students throughout the day."

"What I didn't like about PE in grade school was when we had to play shirts and skins. Back them I was chubby. I didn't like to take my shirt off in front of other students."

"In middle school our physical education teacher divided the class into groups for softball. One thing he said was he wanted all the studs on field A and all the nerds and girls on field B. "

The above quotes came from students in an introduction to physical education course in which one of the authors was the instructor. Students were asked to describe an inappropriate activity they experienced while enrolled in a physical education class. Many students wrote about fitness testing and being singled out for not doing well. Others talked about being injured, intentional embarrassment by the teacher, being punished with exercise, and the teacher not doing anything except having students play basketball or dodgeball.

As reported in "See you in the movies? We hope Not!" (Duncan, Nolan, & Wood, 2002), physical education has been portrayed in movies as a nonacademic subject. For example, locker rooms are often viewed as a place for humiliation and aggression, and whistles are the prominent symbol of physical education. There is confusion between sports and physical education, and there are negative teacher attitudes toward students.

This image is furthered depicted in the movie *Summer School*. The physical education teacher, Freddy Shoop, was asked to teach an English class and responded with "Look, I ain't no English teacher. I hand out basketballs and check for jock straps. I'm like real challenged. Naw, I'm not a real teacher" (Duncan, Nolan & Wood, 2002, p. 39). This is often what physical education teachers face as they fight to maintain their professional image.

Unfortunately, some physical educators may have manifested this image through their actions (Stevens & Carpenter, 1998). Because teachers use inappropriate techniques, present inappropriate activities, and fail to engage in real assessment, people have tended to marginalize physical education (Martin, 2003; Stroot & Whipple, 2003).

In 1992, the Council on Physical Education for Children (COPEC) published a position statement titled *Developmentally Appropriate Physical Education Practices for Children* and revised in 2000 (National Association for Sport and Physical Education [NASPE]). It clearly established what elementary school physical education specialists were expected to do in their classes.

Woods and Langley (cited in Placek et al, 1995) stated, "Examining preservice teacher beliefs about appropriate activities for school physical education is important because (a) these beliefs are often difficult to change, and (b) they influence how these future teachers may act within their own programs" (1998, p. 71). A logical starting point in eliminating inappropriate practices in physical education is to better educate physical education teacher education (PETE) preservice majors. At the same time, experienced teachers and administrators must be made aware of changes regarding acceptable and unacceptable practices; and parents and the public must be better informed and encouraged to take a stand against inappropriate practices.

Numerous NASPE documents address appropriate practices in physical education classes (NASPE, 1995a, 1995b, 1995c, 1998, 2000, 2001a, 2004a, 2004b, 2004c). However, a literature search failed to identify even one research study indicating if these practices are taking place in physical education classes or if physical education specialists or physical education majors even understand or know about them.

The purpose of this study was three fold. First, to compare various population groups (i.e., elementary education majors, PETE majors, non-education/physical education college students, and parents) regarding their knowledge of appropriate practices in elementary school physical education settings as outlined by NASPE; second, to compare the knowledge of physical education majors across academic status; and third, to compare senior physical education majors with elementary education majors. Data used for this paper was taken from four individual studies (Barney & Strand, 2005; Barney & Strand, 2006a; Barney & Strand, 2006b; DeFries, 2004) conducted over two years.

Methods

Participants

Participants of the four studies were 99 PETE majors from three universities (Barney & Strand, 2006a), 138 elementary education

majors from three universities (Barney & Strand, 2005), 360 non-education/physical education college students from one university (DeFries, 2004), and 311 parents representing students from four elementary schools (Barney & Strand, 2006b).

Instrumentation

A review of literature failed to identify an instrument related to appropriate practices in elementary school physical education. That being the case, the researchers constructed a 40-statement survey based on information gleaned from the elementary appropriate practices document (NASPE, 2000). The development of the instrument was reported in Barney and Strand (2006a). The statements are provided in Table 1. The instrument was used for the collection of data in each of the four individual studies. No specific instrument was used for this paper.

Table 1. ***Survey Statements***

1. Curriculum should include a balance of skills and concepts in the areas of games, educational gymnastics, and rhythmical activities and dance.

2. Curriculum should consist primarily of large group and competitive team games.

3. Activities should be the same for all grade levels k-6.

4. Teachers should design activities with both the physical and the cognitive development of children in mind.

5. Children should receive opportunities to connect movement concepts and skills into their learning experiences in other subject areas.

6. Children may be permitted to use harassing remarks, physically harmful activities, and behavior that is hurtful to others.

7. Environment should be supportive of all students, including those of lesser skills, and promote the development of a positive self-concept.

8. Process of fitness development should be monitored, and guidance for setting personal goals and strategies for goal attainment provided.

9. All children should be required to do the same fitness activities regardless of their fitness levels.

10. Calisthenics/mass exercise should be the avenue for fitness development.

11. Teachers should use fitness assessment as part of the ongoing process of helping children understand, enjoy, improve and/or maintain their physical fitness and well-being.

12. Test results should be shared privately with children and their parents as a tool for developing personal goals and strategies for maintaining and increasing the respective fitness parameters.

13. Teachers should administer physical fitness tests once or twice each year for the purpose of identifying children to receive awards or to meet a requirement of the school district or state department.

14. Fitness results should be interpreted based on comparison to norms rather than in terms of how they apply to children's future health and well-being.

15. Elementary school children should be taught the purpose of exercise, correct procedures for exercise, and the different exercise categories-stretching, strength, etc.

16. Exercises should be taught as positive physical activity learning experiences but not as a primary part of elementary physical education.

17. Exercise may be used as a punishment for misbehavior and/or lack of participation.

18. Teacher decisions should be based primarily on ongoing individual assessments of children's performance as they participate in physical education classes.

19. Many different forms of assessment, including checklists, self and peer assessment, portfolios, and student journals should be incorporated in the process.

20. Dress, attendance, and effort should be counted as the affective portion of the grade.

21. Assessment items should focus on isolated skills in an artificial context (e.g., dribbling between cones for time as compared to dribbling in a game situation).

22. Teachers should involve all children in activities that allow them to participate actively, both physically and mentally.

23. Teachers may use large groups in which student participation is based on individual competitiveness.

24. Teachers may use activities such as relay races, dodgeball, and elimination tag since they provide opportunities for everyone in the class.

25. Teachers should limit participation of students with special needs to activities that don't facilitate learning, such as keeping score or counting repetitions for other students.

26. Teachers should modify the rules, regulations, equipment, and playing space to facilitate learning by children of varying abilities or to focus learning on particular games or skill components.

27. Teachers may use games with a learning purpose or goal of keeping children "busy, happy, and good."

28. Official, adult rules of sports should govern the activities in physical education classes.

29. Groups or teams may be formed by grouping clothing colors, birthdays, and favorite activities.

30. Groups or teams may be formed by student "captains" publicly selecting one child at a time, sometimes with a system of alternating gender.

31. Groups/teams may be formed by pitting "boys against girls."

32. Teachers should organize small games, e.g., 2-3 per team that allow numerous practice opportunities for children while also allowing them to learn the various aspects of the game being taught.

33. Equipment should be provided to permit active participation and practice for every child.

34. Teachers may organize full-sided or large-sided games (e.g., the class of 30 is split into two groups of 15 that play against each other).

35. Teachers should plan activities that emphasize self-improvement,

participation, fair play (shaking hands, positive comments, etc.), and cooperation.

36. Children should be allowed to choose between keeping score and skill practice in selected situations.

37. Teachers should provide choices in levels of competition and teach participants how to compete positively and constructively at each level.

38. Teachers should require children to participate in activities that designate children as "winners and losers."

39. Teachers may use strategies that compare one child's or one team's performance against others.

40. Teachers should use rewards and punishments for winning and losing in class games.

There were five general areas of interest in this survey: curricula decisions (7 statements), assessment (4 statements), health-related fitness (10 statements), active participation of every child (6 statements), and instructional strategies (13 statements). In each of the general areas, approximately one-half of the statements reflected appropriate practices and one-half inappropriate practices. For each of the statements, respondents were asked to identify if they believed the statement reflected an appropriate or an inappropriate elementary school physical education practice.

Data Analysis

For this paper, data from each of the four studies were analyzed based on number and percent of correct responses. Significant differences between the number of correct responses of PETE majors and the three other groups, within the PETE majors, and between PETE seniors and elementary education majors were determined by using Fishers exact test. Significant difference as set as $p < .05$.

Results

The four studies contained a combined total of 908 participants. A total of 36,320 statements were answered, and of them, 26,986 (74.3%) were identified correctly. Table 2 shows the number and percent of statements identified correctly by statement and topic area for each of the participant groups.

Research Question #1: What difference exists in the knowledge of elementary physical education appropriate practices among PETE majors, elementary education majors, general college students, and parents?

As can be seen in Table 2, collectively, participants were more likely (based on percent) to correctly identify the curricular statements (91.9%), followed by health-related (76.8%), instructional strategies (74.3%), active participation (61.7%), and assessment (55.4%). By participant group, a statistical difference ($p < .0001$) was found between the PETE and elementary education majors with the elementary education majors better able to correctly identify if the statements were indicative of appropriate or inappropriate physical education practices. PETE majors were better able to identify statements than were college students ($p < .001$) and parents ($p < .05$).

Within the curriculum statements, a statistical difference ($p < .001$) for one statement (#3) was found between PETE and elementary education majors. Statistical differences were found for six of the seven statements when comparing PETE majors and college students. No statistical differences were found between PETE majors and parents.

For the ten health-related statements, a statistical difference was found for two statements (#10, $p <. .001$; #15, $p < .05$) when comparing PETE and elementary education majors. Again, the elementary education majors were more likely to identify the appropriate practices statement correctly. Statistical differences in favor of the PETE majors was found for four of the statements (#8, $p < .001$; #9, $p < .001$; #14, $p < .001$; #17, $p < .01$) when compared to college students and three of statements (#19, $p < .01$; #15, $p < .01$; #16, $p < .05$) when compared to parents.

For the four assessment statements, a statistical difference was found for two statements (#19, $p < .05$; #20, $p < .01$) when comparing PETE and elementary education majors. For college students and parents, there were significant differences for one (#19, $p < .001$) and two statements (#19, $p < .001$; #20, $p < .01$), respectively, in comparisons to PETE majors.

For the six active participation statements, a statistical difference was found for one statement (#26, $p < .05$) when comparing PETE and elementary education majors. For college students and parents, there were significant differences for five (#22, $p < .01$; #23, $p < .01$; #24, $p < .011$; #25, $p < .01$; #26, $p < .001$) and two statements (#24, $p < .001$; #26, $p < .01$), respectively, in comparisons to PETE majors.

For the 13 instructional strategies statements no significant differences were found between PETE and elementary education majors. Significant differences were found for 11 of the statements when comparing PETE majors and college students and for five statements when comparing PETE majors and parents.

For all statements combined, a statistical significant difference of $p < .001$ was found between PETE majors and elementary majors. This indicates that elementary education majors were better able to identify appropriate practices in elementary physical education. Physical education majors were better able to identify appropriate practices than were college students ($p < .001$) and parents ($p < .05$).

Research Question #2: Is there a difference in the knowledge of elementary physical education appropriate practices of PETE majors across academic status?

Table 3 provides a closer analysis of responses for PETE majors by academic status. For two of the topic areas (curriculum and assessment) a statistical difference was found between seniors and juniors and for all five of the topic areas a statistical difference was found between seniors and freshman/sophomores. Due to a low number of freshman their results were combined with the sophomore students. For four of the topic areas a statistical difference was found between juniors and freshman/sophomores. When looking at all answers combined, a significant difference was found between seniors and juniors ($p < .05$), between seniors and freshman/sophomore ($p < .001$) and between juniors and freshman/sophomore ($p < .001$).

Table 2. ***Number and percentage of correct responses by topic area and participant group***

Topic Area Statement	Phy Ed (n=99)		Elem Ed (n=138)		College (n=360)		Parents (n=311)		Total
	%	n	%	n	%	n	%	n	%
Curriculum									
1	93.9	93	97.1	134	75.8	273 ***	94.5	294	
2	80.8	80	85.5	118	41.1	148 ***	76.5	238	
3	87.9	87	98.6	136 ***	85.6	308	92.9	289	
4	99.0	98	99.2	137	89.9	322 ***	99.4	309	
5	98.0	97	96.4	133	84.4	304 ***	94.9	295	
6	97.0	96	97.8	135	88.3	318 **	98.1	305	
7	100.0	99	99.3	137	90.3	325 ***	99.4	309	
Mean	93.8	650	96.3	930 *	84.2	1998 ***	93.7	2039	91.9
Health related									
8	96.0	95	96.4	133	78.9	284 ***	96.1	299	
9	72.7	72	80.4	111	54.2	195 ***	77.5	241	
10	54.5	54	75.4	104 ***	51.1	184	58.2	181	
11	92.9	92	92.0	127	86.7	312	95.5	297	
12	93.9	93	97.8	135	84.4	304	95.2	296	
13	44.4	44	50.7	70	39.2	141	38.9	121	
14	83.8	83	87.7	121	65.8	237 ***	69.8	217 **	
15	87.9	87	95.7	132 *	80.8	291	95.8	298 **	
16	52.5	52	60.9	84	49.7	179	65.3	203 *	
17	84.8	84	92.0	127	72.8	262 **	88.4	275	
Mean	76.3	756	82.4	1144 ***	70.5	2389 ***	78.1	2428	76.8
Assessment									
18	82.8	82	87.0	120	78.1	281	81.7	254	
19	72.7	72	84.1	116 *	50.0	180 ***	57.6	179 ***	
20	7.1	7	20.3	28 **	10.8	39	19.3	60 **	
21	49.5	49	59.1	81	57.2	206	55.9	174	
Mean	53.0	210	62.6	345 **	52.2	706	53.6	667	55.4
Active Participation									
22	98.0	97	97.8	135	90.8	327 **	98.7	307	
23	49.5	49	54.3	75	31.9	115 **	43.1	134	
24	33.3	33	42.8	59	8.6	31 ***	16.1	50 ***	
25	90.8	89	87.0	120	78.9	284 **	85.9	267	
26	89.9	89	97.1	134 *	72.8	262 ***	79.4	247 **	
27	18.2	18	47.8	66	18.1	65	26.4	82	
Mean	63.9	375	71.1	589 **	53.3	1084 ***	58.3	1087 *	61.7
Instructional Strategies									
28	82.7	81	83.3	119	68.6	247 **	78.1	243	
29	88.9	88	92.0	127	77.8	280 **	76.5	238 **	
30	81.6	80	84.8	117	62.2	224 ***	71.4	222	
31	84.8	84	80.4	111	62.5	225 ***	78.1	243	
32	97.0	96	96.4	133	85.6	308 ***	96.8	301	
33	98.0	97	97.8	135	90.6	326 **	96.1	299	
34	33.3	33	30.4	42	7.8	28 ***	7.7	24 ***	
35	94.9	94	99.3	137	89.2	321	98.7	307 *	
36	51.5	51	58.7	81	46.4	167	60.5	188	
37	96.0	95	92.0	127	85.3	307 **	95.2	296	
38	87.9	87	87.0	120	59.4	214 ***	78.5	244 *	
39	85.9	85	85.5	118	59.4	214 ***	71.4	222 **	
40	92.9	92	92.0	127	72.5	261 ***	95.8	298	
Mean	82.7	1063	83.6	1494	70.6	3122 ***	77.3	3125 ***	74.3
Grand Mean	74.9	3054	80.3	4502 ***	68.0	9299 ***	74.1	9346 *	74.3

Comparing physical education majors with other categories
* p. < 05
** p.< 01
*** p. < 001

Table 3. ***Number and percentage of correct responses by topic area for physical education majors by academic status***

Topic Area / Statement	Freshman/ Sophomore (n=21) %	n		Junior (n=36) %	n		Senior (n=42) %	n
Curriculum								
1	95.2	20		94.4	34		97.6	41
2	61.9	13	*	77.8	28	*	92.8	39
3	76.2	16		86.1	31		95.2	40
4	95.2	20		100.0	36		100.0	42
5	90.5	19		100.0	36		100.0	42
6	90.5	19		100.0	36		97.5	41
7	100.0	21		100.0	36		100.0	42
Mean	87.1	128	***&	94.0	237	*	97.6	287
Health-related								
8	90.5	19		97.2	35		95.2	40
9	28.6	6	**&&&	83.3	30		85.7	36
10	19.0	4	**&&&	69.4	25		59.5	25
11	90.5	19		94.4	34		92.8	39
12	90.5	19		97.2	35		92.8	39
13	9.5	2	***&&&	55.6	20		52.4	22
14	61.9	13	***&&&	97.2	35		83.3	35
15	71.4	15	*	88.9	32		95.2	40
16	19.0	4	**&&	55.6	20		66.7	28
17	85.7	18		83.3	30		90.5	38
Mean	56.7	119	***&&&	82.2	296		81.4	342
Assessment								
18	66.7	14	**	77.8	28	*	95.2	40
19	28.6	6	***&&&	80.6	29		88.1	37
20	9.5	2		5.5	2		7.1	3
21	100.0	21		100.0	36		100.0	42
Mean	26.4	43	***&&&	59.4	95	**	76.3	122
Active Learning								
22	95.2	20		97.2	35		100.0	42
23	28.6	6	*	44.4	16		64.3	27
24	14.3	3	**	22.2	8	**	52.4	22
25	80.9	17	&	97.2	35		88.1	37
26	90.5	19		94.4	34		85.7	36
27	90.5	19		77.8	28		80.9	34
Mean	66.7	84	*	72.2	156		78.6	198
Instructional Strategies								
28	33.3	7	***&&&	94.4	34		95.2	40
29	85.7	18		94.4	34		85.7	36
30	28.6	6	***&&&	91.7	33		97.6	41
31	52.4	11	***&&	86.1	31	*	100.0	42
32	85.7	18	*&	100.0	36		100.0	42
33	90.5	19		100.0	36		100.0	42
34	57.1	12	*&	27.8	10		26.2	11
35	90.5	19		91.7	33		100.0	42
36	47.6	10		52.8	19		52.4	22
37	90.5	19		94.4	34		100.0	42
38	61.9	13	***&&&	94.4	34		95.2	40
39	52.4	11	***&&	91.7	33		97.6	41
40	71.4	15	***&&	97.2	35		100.0	42
Mean	65.2	178	***&&&	85.9	402		88.5	483
Grand Mean	65.7	552	***&&&	82.4	1186	*	85.2	1432

Comparing seniors to juniors and soph/freshmen
* p < .05
** p < .01
*** p < .001

Comparing juniors to soph/freshmen
& p < .05
&& p < .01
&&& p < .001

For specific statements, statistical differences were found for four statements (#2, p < .05; #18, p < .05; #24, p <. 01; #31, p <. 05) when comparing juniors and seniors; 20 of the 40 statements when comparing seniors to freshmen/sophomores; and 15 statements when comparing juniors to freshmen/sophomores.

Research Question #3: Is there a difference in the knowledge of elementary physical education appropriate practices of PETE seniors and elementary education majors?

As indicated from the results presented in Table 2, elementary education majors appear to be more knowledgeable of appropriate practices in elementary physical education than are PETE majors. However, when senior PETE majors are compared to elementary education majors, significant differences that favor the senior PETE majors were found for three of the topic areas (assessment, p < .05; active learning, p < .05; and instructional strategies, p < .0001) and for all statements combined (p < .0001).

Discussion

Generally speaking, PETE majors tended to correctly identify appropriate practices in elementary school physical education. For example, 16 of the 40 statements were identified correctly by at least 90% of the physical education majors, 29 statements were identified correctly by at least 80%, and 33 statements were identified correctly by at least 70%. When looking at the results of senior PETE students only, the percentages are even higher.

Disconcerting is the fact that for six of the statements, less than 65% of the PETE seniors were able to correctly identify a practice as appropriate or inappropriate. However, even though 65% of the senior students failed to correctly identify appropriate practices, for four of the statements (#20, 23, 24, 34), seniors showed a statistically significant difference when compared to freshmen/ sophomores.

Although 19 of the statements showed no statistically significance difference between seniors and freshmen/sophomores, for 15 of these statements, a greater percentage of seniors correctly identified statements. Surprisingly, for four statements (#20, 26, 27, 34) a greater percentage of freshman/sophomores compared to seniors correctly identified the statement.

Based on these findings, one may argue that students entering PETE programs have a modest understanding of appropriate practices in elementary physical education. In fact, it is not much different than other college students. Further, it is readily apparent that PETE students come to understand appropriate practices during their junior year of preparation. As they compete their senior year of training, their understanding continues to be enhanced.

Over the past 25 years, much has changed in k-12 physical education. New technologies are being used (e.g., heart rate monitor, GPS, Dance Dance Revolution, pedometer), curricula have expanded (e.g., Concepts-Based Fitness, Games for Understanding, Personal and Social Responsibility), and acceptable practices have changed (e;g., playing shirts and skins, required showers, no water during exercise). Much of the change has been the result of published documents (Bennett, 1983; Center for Disease Control and Prevention, 1999), research studies (Sallis et al, 1999; Burgeson, Wechsler, Brener, Young & Spain, 2001), reports (Center for Disease Control and Prevention, 2000; NASPE,

1997, 2001b, 2006; U.S. Department of Health and Human Services, 1996), standards (NASPE, 1995a, 1995c, 2004a, 2004c), and guidelines (Center for Disease Control and Prevention, 1997; NASPE, 1995b, 1998, 2000, 2001a, 2004b).

Results reported in this paper indicate that PETE seniors have a very good sense of what are considered appropriate and inappropriate practices in elementary school physical education. There is certainly room for improve and that is what teacher preparation programs need to address. To increase the quality of k-12 physical education programs, new teachers must be thoroughly knowledgeable of appropriate and inappropriate practices. As teacher preparation programs are the first link in improving the quality of physical education as a whole, all teacher preparation programs must include the NASPE appropriate practices documents in their course of study. Future physical educators must know exactly what is and is not appropriate, and then learn to design lessons accordingly.

Teacher preparation programs, however, are not the only area of concern. Experienced teachers must become familiar with changing curriculum models and stay up to date with current research. These teachers must be provided with the opportunity to learn about inappropriate practices and how they can better their classrooms. In addition, those who are provided the opportunities to learn and improve must take advantage of them. There are certainly many publications (e.g., Strategies; Journal of Physical Education, Recreation and Dance; state AHPERD journals) and conferences (e.g., AAHPERD, NASPE, District, State) that teachers have access to. As such, there is no excuse for not keeping abreast.

School administrators must also be aware of the latest research and issues in physical education in order to provide the best quality guidance for their teachers. If inappropriate practices are occurring, administrators must make sure they are eliminated. In addition, administrators must encourage their teachers to join professional associations and attend professional conferences.

It is recognized that preservice teachers come into teacher preparation programs with preconceived beliefs that have been formulated through personal experiences and observations (Doolittle, Dodds, & Placek, 1993). It has been suggested that teacher preparation is one of the few university programs that students enter with 12 years of induction (Kramer, 1991). If this is true, convincing PETE preservice students to change beliefs formulated while enrolled in k-12 schooling is a difficult challenge for teacher preparation faculty. However, if we are to change teaching practices in k-12 physical education, we most first impact the knowledge base of those students who will be teachers.

As can be seen from the results presented in this paper, many students do enter PETE programs with limited knowledge of appropriate practices; however, as these students progress through a PETE program their awareness of appropriate and inappropriate practices becomes more acute. The question then is, does what students learn in their PETE programs become permanent practice when they assume a k-12 teaching position. Or, do they revert back to what they remember from their 13 years as k-12 students?

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Peer Social Network and Physical Activity of Nnamdi Azikiwe University, Awka, Students

by Ogu Okey Charles and Ohabunwa Christian Chibuzo

Abstract

The study assessed peer social network and physical activity of students in Nnamdi Azikiwe University in Nigeria. A self-administered questionnaire was administered to a convenience sample of 325 students. The findings of the study showed that the girls' network was receptive, which accounted for the pattern of physical activity engaged in by the members of this network. In contrast, the boys' network was close knit and was more disposed to participation in organized team sports. The hypotheses of no significant differences were accepted at 0.05 level of significant. This study demonstrated a clear manifestation of the influence of peer social networks upon students' participation in physical activity. It is important to note that gender-related differences in the physical activity patterns were observed because of the differences in the constitution of students' peer social networks.

Peer Social Network and Physical Activity of Nnamdi Azikiwe University, Awka, Students

Adolescents' involvement in physical activity has declined in recent times and there is a need to understand who initiates physical activity of close friends. Heaney and Israel (1996) suggest that in adults, social support together with social networks have an important causal effect on health, exposure to stress, and health. Leon and Connett (1991) reported that interpersonal and environmental factors positively associated with physical activity among young people include peers' or friends' support for and participation in physical activity.

Peer groups are important in socialization as individuals attempt to conform to the expectations of their peer groups. Besides, people choose friends who accept and like them and see them in a favorable light (Focus Adolescent Service, 2001), while families help individuals - especially teens - to feel proud and confident of their unique traits, background, and abilities. However, it would be important to note that peers to a very high extent influence feelings, thoughts, and actions of a member. Peer influence might be positive or negative but the interest of this study is only on the positive part. The ability to develop healthy relationship with the peer group depends on a person's self identity, self esteem, and self reliance. At its best, peer pressure can mobilize a person's energy, motivate an individual for success, and encourage one to conform to healthy behaviors. Peers can demonstrate appropriate social behaviors. Furthermore, they often listen to, accept, and understand the frustrations, challenges, and concerns associated with members.

Conversely, some negative risk behaviors (i.e., unhealthy sexual relationships, drug abuse) may lead to problems with the law, parental structures, and educational systems and may create an overbearing influence that peers exert on members. Members of a peer's immediate surroundings can constitute a network. A network is a social structure made of nodes which are generally associated with an individual or organization. The network indicates the way in which members are connected through various social familiarities ranging from casual acquaintance to close familiar bonds. In a social network, social relationship is viewed in terms of nodes and ties. Nodes are individual actors within the network and ties are the relationship between the actors (Social Network Encyclopedia 2002).

The shape of the social network helps to determine a network's usefulness of its members. Smaller and tighter networks can be less useful to their members than networks with a lot of loose connections to individuals outside the main network. More open networks - with weak ties and social connections - are more likely to introduce new ideas and opportunities to their members than close networks with many redundant ties (Social Network Encyclopedia 2002).

Connections between individuals, according to Hill and Dunbar (2002), are inherent in any given network and are the degrees at which an individual lies between other members in the network. Furthermore, Hill and Dunbar listed integration, rediality, reach, structural equivalence, and structural hole as qualities of a social network. Becker (1995) indicates that a flexible group arrangement of network provide members with an opportunity to increase participation, interact with their member and establish goals. In the view of Johnson and Johnson (1994), heterogeneous network will be able to provide both effective and cognitive benefits to members of both high and low ability than homogeneous network.

Clark (2005) observed that social support is one of the most important factors predicting the physical health and well being of network members ranging from childhood through older adult age. The absence of social support shows some disadvantages to network members. In most cases, it can predict the deterioration of physical and mental health among network of peers. Stice, Ragan, and Randall (2004), reported that peer social support is the most important element in the lives of adolescents who grow up, to expect a lot of support from members that love, care, value and think well for them.

The social contact support and involvement with physical activities have significantly demonstrated a relationship with lowering blood pressure (Uchino, Cacioppo, & Kiecolt, 1996). The scholars of this report further stated that anyone who has high social support on physical activity tends to have less chances of getting depression and anxiety disorder. Maddi, Barton, and Puccelt (1987) stated that there is a strong relationship between physical activities oriented social support and absence of coronary heart diseases.

Regular physical activity has been shown to reduce certain chronic diseases including high blood pressure, stroke, coronary artery disease, type 11 diabetes, colon-cancer, and osteoporosis (Anderson, Schnor, Schoroll, & Hein, 2000). Harjula (2000) viewed physical activity as a key factor in achieving and maintaining a

healthy body weight for children and adult. Performance in regular vigorous physical activity may vary according to gender. A study carried out by Centers for Disease Control and Prevention (CDC, 2006) showed that 57% of girls participated regularly in vigorous physical activity compared to 20% of boys. Seefeldt and Ewing (1997) found that girls join organized sports program at later ages than boys and dropout at younger ages. This phenomenon can determine an adolescent's inclination and progression in physical activity considering the type of peer network she or he maintains.

Prospective peer social network oriented studies have centered on negative behaviors among adolescents. These negative behaviors include smoking, substance abuse, cultism, and risk behaviors associated with sexuality. Such studies that have focused on negative behavior peer networks have neglected positive behavior oriented aspects of physical activity related to social network involving adolescents. Therefore, it is important to understand the physical activity pattern of peer social network of Nnamdi Azikiwe University students and whether or not group related physical activity results in higher or lower intensity activity. This is the major purpose of this study.

Methods

The study used a cross sectional design in order to meet the purpose of the research endeavor. Data were collected from a convenience sample of 325 students of Nnamdi Azikiwe University, Awka, in Anambra State, Nigeria. The population of this convenience sample was obtained from the management information unit of the university. The overall number of undergraduate students in the faculty of education is 2,693. Based on this number the department of health and physical education is 202, educational foundation is 694, science education is 336, library and information science is 99, and the vocational and adult education is 1,363. These segments made up the total number of students reported above.

The instrument used in this study consisted of demographic variables (i.e., department, sex, age, location) and a 24-item questionnaire related to the social network of physical activity. Out of the 325 questionnaires administered, only 296 copies were collected. This number was used in all computations. Cronbach alpha coefficient was computed using SPSS software. The reliability coefficient of .88 was obtained. For the statistical analysis, the t-test was used to compare the mean responses of social network of students' sex on involvement in physical activity and mean responses of most physical activities performed by peer network in relation to location. A one–way analysis of variance (ANOVA) was used to compare the mean response of students' age and their social network in relation to physical activity. Means and standard deviations were used for the analysis of data on the research questions. The criterion mean set for the study was 2.50. The null hypotheses were tested at the .05 level of significance. All computation was done using SPSS software.

Results

The first table (Table 1) illustrates the various demographic results from this study. For the respondents in this study, 50.7% were female and 43.9% of both the male and female respondents were between 21 and 25 years of age.

Table 1. ***Charater of the Subjects***

	Frequency	Percent	Valid Percent	Cumulative Percent
Department				
Health & Physical Education	61	20.6	20.6	20.6
Educational Foundations	62	20.9	20.9	41.6
Science Education	57	19.3	19.3	60.8
Lib. & Information Science	19	6.4	6.4	67.2
Vocational & Adult Education	97	32.8	32.8	100.0
Total	296	100.0	100.0	
Sex				
Male	146	49.3	49.3	49.3
Female	150	50.7	50.7	100.0
Total	296	100.0	100.0	
Age				
16 to 20 years	129	43.6	43.6	43.6
21 to 25 years	130	43.9	43.9	87.5
26 to 30 years	29	9.8	9.8	97.3
30 years and above	8	2.7	2.7	100.0
Total	296	100.0	100.0	
Location				
School	172	58.1	58.1	58.1
Home	94	31.8	31.8	89.9
Other Places	30	10.1	10.1	100.0
Total	296	100.0	100.0	

Table 2 shows that for items 2, 3, 4, 5, and 7, they had a mean score above the criterion mean. Therefore, these findings reveal that the subjects' views on the statements were positive. By implication, items 2, 3, and 4 reveals that the subjects' opinion on the statements were positive. Items 5 and 7 shows how close they were, hence they played together and members asked one another to participate in sporting activities. Subjects' responses on items 1 and 6 fell below the criterion mean.

Table 2. ***Mean Responses on Girls' Physical Activity Level in Relation to Their Friends***

S/N	Item Statement	N	$\overline{X}$	SD	Decision
1.	My friends are of the same sex	296	2.3243	1.0999	Disagree
2.	Majority of my friends if not all are physically active	296	2.9764	.9035	Agree
3.	My friends belong to the university Sports team	296	2.5912	.9343	Agree
4.	My friend encourages me to be physically active with them	296	2.9730	.9091	Agree
5.	I often play together with my friends	296	3.0034	.9514	Agree
6.	Incidentally my friends are inactive type	296	1.9932	.9672	Disagree
7.	Sometimes my friends will ask me to join him/her in sporting activities	296	2.8750	.8604	Agree

The next table (Table 3) illustrates how items 8, 11, and 12 had mean scores above the set mean of 2.50. These findings mean that the subjects agree with the items and - by implication - item

8 shows that most members of the boys' social network are of the same sex. Item 11 shows that majority of the boys and their friends belonged to the university soccer team. Item 12 reveals that outside the games of basketball and soccer subjects do participate in jogging. The views of the respondents on items 9, 10, and 13 were negative as evidenced in the shortfall on the criterion mean of 2.50.

Table 3. ***Mean Responses on the Boys' Social Network and Type of Activity Performed by Members***

S/N	Item Statement	N	$\overline{X}$	SD	Decision
8.	Majority of my friends are boys	296	2.5980	1.0369	Agree
9.	In fact all my friends are boys who play basketball with me	296	2.9764	.9035	Disagree
10.	My cycle of friends prefer performing Aerobic exercise in the fitness centre	296	2.3480	.9516	Disagree
11.	My friends strive to be in the university soccer team with me	296	2.5878	1.1494	Agree
12.	Apart from basketball and soccer we do jog sometimes	296	2.9628	.9448	Agree
13.	My friends and I do not like taking part in any sport at all	296	1.9649	.9648	Disagree

Table 4 indicates that the responses of the subjects on items 14, 15, and 16 are above the criterion mean of 2.50. This is a clear indication that subjects' opinion on the statement are in the affirmative. This means that location is not a hindrance to any physical activity by peer network in as much as there are available and functional facilities. Items 17 and 18 show the respondents were very much aware of places they can participate in physical activities. According to respondents' view on item 19, their academic activities are likely not to be a hindrance for involvement in physical activities.

Table 4. ***Mean Responses on Peer Network of Students' Physical Activities in Relation to Location***

S/N	Item Statement	N	$\overline{X}$	SD	Decision
14.	Most physical activities performed by my friends are at school	296	2.7872	2.0941	Agree
15.	Because we live in the same neighbourhood we practice some activities at home	296	2.7804	.9995	Agree
16.	As a member of religious organization we participate in physical activities at church premises	296	2.5709	.9751	Agree
17.	Apart from the school, there is no place of choice for us to be physically active	296	1.8919	.9890	Disagree
18.	I am not aware of any place one can be involved in any type of physical activity	296	2.1216	.9908	Disagree
19.	Because of the hassles of academic we prefer to be actively involved in sports during holidays	296	2.4493	.9446	Disagree

The next table (Table 5) shows that items 22 and 23 are weighted above the criterion mean of 2.50. Therefore, the findings of these items mean that their responses were positive to these items. This means that students peer network are conscious of being physically active and have the tendency to spend about 30 minutes. The results further reveal for items 20, 21, and 24 the responses were below the criterion mean of 2.50. However, this does not suggest that peer network of students are inactive because a disagreement to the statement cannot lead one into such a conclusion.

Table 5. ***Mean Responses on Frequency of Involvement in Physical Activity Among Peer Network of Students***

S/N	Item Statement	N	$\overline{X}$	SD	Decision
20.	There is never a time my friends participated in physical activity	296	1.9257	1.2162	Disagree
21.	We participate in physical activity on weekends only	296	2.3615	.8950	Disagree
22.	Most of my friends prefer involvement in physical activities after school activities	296	2.7970	.8622	Agree
23.	If we commence any activity in sport we spend about 30 minutes everyday	296	2.6723	.9624	Agree
24.	We see ourselves saddled with academic activities to the extent that no time is devoted to physical activity	296	2.2635	1.2802	Disagree

Table 6 shows the independent sample test and Levene's test for equality of variances used to compare unrelated samples. This table indicates the value for equal variance assumed as 3.132 which is greater than 0.5 confidence level, thus accepting the null hypothesis of no significant difference 3.132 > .05.

Table 6. ***Summary of t-test on Mean Responses of Social Network of Students' Sex on Involvement in Physical Activity***

Group Statistics

Sex	N	Mean	Standard Deviation	Standard Error of Mean
Male	146	2.5148	.4437	3.672E-02
Female	149	2.3456	.4828	3.956E-02

Independent Sample Test

Levene's Test for Equality of Variances/t-test for Equality of Means

	t	df	Sig (2-Tailed)	Mean Diff.	Standard Error Diff.	95% Confidence Interval of the Diff.	
						Lower	Upper
Equal Variance Assumed	3.132	293	.002	.1692	5.402E-02	6.288E-02	.2755
Equal Variance Not Assumed	3.132	291.808	.002	.1692	5.398E-02	6.297E-02	.2754

The next table (Table 7) shows independent sample test and Levene's test for equality of variances used to compare unrelated samples. This table indicates the t-value for equal variances

assumed as -.305 which is greater than .05 acceptable error rate, therefore, accepting the null hypothesis of no significant difference -.305> ± .05.

Table 7. ***Summary of t-test on Mean Responses of Most Physical Activities by Peer Network in Relation to Location***

Group Statistics

Location	N	Mean	Standard Deviation	Standard Error of Mean
School	197	2.3993	.4084	2.910E-02
Home	94	2.4149	.4044	4.171E-02

Independent Sample Test

Levene's Test for Equality of Variances/t-test for Equality of Means

	t	df	Sig (2-Tailed)	Mean Diff.	Standard Error Diff.	95% Confidence Interval of the Diff.	
						Lower	Upper
Equal Variance Assumed	-.305	289	.761	-1.5570E-02	5.104E-02	-.11608	.488E-02
Equal Variance Not Assumed	-.306	184.800	.760	-1.5570E-02	5.086E-02	-.11598	.477E-02

Table 8 shows the summary of the one-way analysis of variance (ANOVA) for hypothesis three for differences in mean responses of students' age and their social network in relation to physical activity.

The acceptable error rate is .05. Therefore, because the F-value of 5.188 is greater than the error rate of .05, the null hypothesis is accepted.

Table 8. ***Mean Responses of Students' Age and their Social Network in Relation to Physical Activity***

Source of Variance	Sum of Square	df	Mean Square	F
Between Group	3.298	3	1.099	5.188
Within Group	61.879	292	.212	
Total	65.177	295		

Discussion

There are many interesting and unique findings in this study. First, the findings of this study indicate that the physical activity level of the female students relates to that of their social network. The data revealed that their social network was not made up of entirely students of the same sex. It could be perceived that the peer network of female students is the loose type which is open to novel discoveries, breakthroughs, and ideas as it allows foreign bodies to come into it. The peer social network of girls used in this study possesses the characteristics for social network which according to Hill and Dumbar (2002) involve the concepts of "betweeness" and closeness. This, however; accounted for the relatedness of their physical activity pattern in relation to that of their friends. It was also found that girls used in this study are more socially receptive than their male counterparts as their social network was open to people of opposite sex.

Second, the findings of the study showed that the boys' social network was close knit as it was predominantly boys. The network that constitutes of boys alone lends itself to organized team sports. This means that such a network is highly restrictive because members cannot relate to those outside their network. This kind of cohesiveness suggests that their ability to possess the required skill needed for performance in organized team sports.

Third, the findings of the study showed that the location of the students' network will not influence their involvement in physical activity. This revelation collaborates the findings of Voorhees, Murray, Welk, Birnhaum, Ribish, Johnson, Pfeiffer, Saksrig, and Jobe (2005), who discovered that peer social network of adolescent girls in relation to their physical activity was not influenced by location. Although, their study used adolescent girls, the present study was not gender conscious and considered both boys and girls. However, it was discovered that network of students and their physical activity involvement would not be affected by their academic activities. This finding is interesting because the network of students recognized the need for spare time and for the participation in physical activity outside the students' academic learning time.

What is encouraging from this study is that students exceeded the recommended time (30 minutes) per day of physical activity. This is important because guideline for exercise promoting health moved away from strenuous forms and simple prescriptions of walking 30 minutes per day is effective in reducing the risk of coronary heart disease and osteoporosis. Along this line, Hu (2005) reported that this time limit required for physical activity engenders low risk of stroke, coronary heart disease, and cancer. Therefore, the students who participated in this study are not as likely to develop obesity, become overweight, or suffer from depression and bone disease as much as their counterparts who do not conform to the recommended 30 minutes per day physical activity duration. Clark (2005) equally upheld the above view.

The null hypothesis of no significant difference in the mean responses of social network of students' sex in relation to their involvement in physical activity was accepted. This shows that the sex of the student is not a factor to be considered when the peer network of students gets involved in physical activity. A significant difference in the mean responses of network of students' age in relation to their involvement in physical activity was found. Finally, the peer network of students' location was found to have not affected their involvement in physical activity.

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A Quantitative Investigation of Sub-Maximal Conditions of Steady State

by Frank B. Wyatt, Aruna Swaminathan and Rosemary Myles

Abstract

This study investigated physiological measures at sub-maximal levels to quantitatively identify steady state. Methods: Twenty (N=20) volunteers aged 26.2 (±3.6) y acted as subjects. Each performed a maximal test on the cycle ergometer to volitional fatigue. Oxygen consumption (VO_2, ml*kg^{-1}*min.$^{-1}$), heart rate (HR, b*min.$^{-1}$) and expired ventilation (V_E, L* min.$^{-1}$) were measured. Rate change (RC) and effect size (ES) calculations were performed and averaged across subjects. Results: Mean quantitative changes during sub-maximal work at steady state for HR and VO_2 were 3.38 (b*min.$^{-1}$) and 1.47 (ml*kg^{-1}*min.$^{-1}$), respectively. Conclusion: Quantitative steady state exists with varying fluctuations allowing for steady state to be determined within a range of physiological values.

Introduction

The cardio-respiratory system responds acutely to various exercise intensities. The ventilatory system in combination with the cardiovascular system meets many biological needs of the body. For example, the need for gas exchange by supplying oxygen required in metabolism, eliminating carbon dioxide produced, and regulating hydrogen ion concentration to maintain acid-base balance. During various sub-maximal exercise intensities, increases in heart rate, oxygen uptake (VO_2) and carbon dioxide production (VCO_2) are evident (Whipp, Ward, Lamarra, Davis & Wasserman, 1982). The extent of increase in oxygen consumption and carbon dioxide production, as well as heart rate (HR) response depends on the intensity of the exercise (Pearce & Milhorn, 1977; Witte, Thackray, Lindsay, Cleland, & Clark, 2005). The term steady state describes the period of time in which the body achieves a balance between the work demands and physiological responses to those demands (Power & Howley, 2004). In terms of gas exchange, this would mean that the ventilatory system is able to balance VO_2 and VCO_2. Oxygen consumption and HR have shown associated rate changes at different intensities during steady state exercise (Schumaker & Samsel, 1989). To determine steady state in physiological measures during dynamic exercise periods, the term needs a quantitative identity.

Research pertaining to quantifying steady state is vague. Plowman and Smith (2003) describe steady state as a balance between energy expenditure and the amount of energy required to perform the exercise when performed for at least 1-3 minutes and specifically balancing at the 2-minute period. From this statement, a time factor associated with response and adjustment to a steady state seems established (i.e., 1-3 minutes). However, Knuttgen (2003) explains that steady state attainment is between 5 and 10 minutes following initiation of exercise. This time factor may be specific to the initiation of exercise and the abrupt change noted by Whipp (1994) as the "Phase I" response in ventilation (337). Qualitatively, steady state is a dynamic constancy other than the level of homeostasis noted during resting conditions (Robergs and Keteyian, 2003). Baron, Dekerle, Robin, et al. (2003) noted that while variations in some measures were minimal, arterial carbon dioxide pressure (PCO_2), arterial systolic blood pressure, pH, respiratory rate and HR showed significant changes during assumed conditions of steady state. To determine steady state in quantitative terms warrants an analysis of a more specific range of heart rate and ventilatory functions during various intensities of exercise. The purpose of this study is to investigate physiological measures involving ventilation and heart rate dynamics during various levels of work to determine quantitative steady state measures.

Methods

Subjects

Twenty (N=20) subjects age 26.2 (±3.6) y volunteered as subjects. Inclusion criteria included those that trained primarily on the bicycle (i.e., ≥ 4 days per week). All subjects signed a university approved IRB informed consent and filled out a medical questionnaire prior to testing. Based on their training regimes and the medical questionnaire, all subjects were considered healthy, fit and of low risk. Subjects were instructed to show up for testing in a euhydrated state, no less than 3 hours post-absorptive with no caffeine ingested on the day of testing. Pre-exercise measures included the following: height (cm); weight (kg); resting heart rate (b*min.$^{-1}$). Each subject performed a modified Astrand maximal test with increasing work rate every 4 minutes on the cycle ergometer (Monark™) to volitional fatigue. Beginning workload was set at 100watts with increased work every stage by 50watts. This protocol was determined for the following reasons: 1) the 4-minute period allowed time for subjects to reach steady state at various workload intensities. The Astrand protocol generally calls for 3-minute stages to allow for steady state at lower workload intensities (Adams, 2002). Also, Whipp (1994) established that the Phase II (i.e., adjustment to steady state) component had a longer time phase for adjustment because it was not neural mediated; 2) stages lasting beyond 4 minutes were discounted for fear of subject peripheral fatigue at higher sub-maximal workload intensities. Oxygen consumption (ml*kg^{-1}*min.$^{-1}$) and heart rate (b*min.$^{-1}$) were continually measured and averaged every twenty (20) seconds (SensorMedics™). Descriptive statistics included means (SD). Rate change (RC) and effect size (ES) calculations for each 4-minute stage were performed and averaged across subjects. The following equations were used, respectively: RC= $(M_2-M_1)/4$; ES= $(M_2-M_1)/Sp$, where M_2=mean at the 4th minute (from three 20 s, averages of breath-by-breath) of the stage, M_1=mean at the 1st minute (from three 20 s, averages of breath-by-breath) of the stage, and Sp=pooled standard deviations of M_2 and M_1. The Sp was calculated from the equation:

$$\sqrt{\frac{[SD_2^2(N\text{-}1)+SD_1^2(N\text{-}1)]}{(N+N\text{-}2)}}$$

, where SD_2 and SD_1 are the standard deviations of M_2 and M_1, respectively

and N=sample size. Because the intent of the study was to quantify steady state conditions, the first and fourth minute of each stage were used for calculations. While some would argue that steady state was not established in the first minute, the acute response to new workloads factors into the eventual condition referred to as steady state. To arbitrarily select data within the stage allowing for reduced variance between M_1 and M_2 would yield spurious results and erroneous conditions of steady state.

Effect size classifications were in accordance with an established ES scale by Rhea (2004). Without a numerical range for physiological steady state, comparisons utilizing an independent t-Test or *X* square analysis to past values is inappropriate. Therefore, a within group single sample *t*-Test computed variance in HR and VO_2 RC between stages. Statistical significance was set a *priori* at $p \leq 0.05$.

Results

Descriptive means (SD) were the following: Age, 21.8 (1.4) y; Height, 166.3 (5.6) cm; Weight, 65.6 (10.9) kg; Resting HR, 71.4(8) b*min.$^{-1}$; Max VO_2, 46.3 (8.3) ml*kg^{-1}*min.$^{-1}$. Table 1 shows rate change and effect size values for HR and VO_2 within each stage.

Table 1. ***Rate Change and Effect Size for Heart Rate and VO_2***

	Heart Rate (b*min.$^{-1}$)		VO2 (ml*kg^{-1}*min.$^{-1}$)	
Stage	RC	ES	RC	ES
1	2.6	.73	1.3	1.47
2	6.2	1.47	1.7	1.8
3	4.1	.98	1	1.18
4	2.4	.61	1.1	.54
5	3.4	1.81	1.56	.59
Mean (SD)	3.74 (1.5)		1.33 (.29)	

From Table 1, the mean (SD) HR rate change was 3.74 (1.5) b*min.$^{-1}$ across different workloads. The single sample t-Test for determining variance between stages revealed significant ($p< 0.05$) HR rate change. The greatest HR rate changes were stages 2, 3 and 5 at 6.2, 4.1 and 3.4 b*min.$^{-1}$, respectively. The mean (SD) rate change for VO_2 was 1.33 (.29) ml*kg^{-1}*min.$^{-1}$. Comparisons of VO_2 between stages indicated significant ($p<0.05$) differences in VO_2 rate change. Stages 2 and 5 showed greatest rate changes in VO_2 at 1.7 and 1.56 ml*kg^{-1}*min.$^{-1}$, respectively.

In relation to ES, stages 1 and 4 heart rate ES were below 0.8. Stages 2, 3, and 5 showed effect sizes greater than 0.8. Oxygen consumption (VO_2) effect sizes for stage 1 through stage 3 were greater than 0.8. Stages 4 and 5 showed results less than 0.8 but greater than 0.5.

Discussion

The average HR change for the 4 minute stages had a rate change of about 3.74 (b*min.$^{-1}$), or approximately 4 beats per minute. Results seen in Table 1 indicate that the subjects performed work at various intensities with levels of physiological rate change. Gene Adams's (2002) guidelines for establishing steady state heart rate indicate a $\pm$ 10 beat per minute range for a given sub-maximal workload through a 3 minute data time-period. The range of HR change in this research indicated 2 to 6 (b*min.$^{-1}$) during steady workload conditions of varying intensity. The steady state HR variation between stages can be explained through the current study's protocol involving multiple intensities of sub-maximal work conditions. In reference to the Adams stipulation of $\pm$ 10 b*min.$^{-1}$ steady state condition, this is considered during a workload that only elicits a heart rate range between 140 and 149 b*min.$^{-1}$. While investigating physiological conditions of steady state, this study looked at sub-maximal levels of work to the point of individual volitional fatigue. Figure 1 indicates the mean group heart rate for every 20 seconds of work performed. Comparing the graph with values of rate change in Table 1, plateaus indicating steady state are evident in the early stages of low intensity work while noted gradual increases occur during later stages. However, even the later stages at increased workloads do not vary by more that 6 b*min.$^{-1}$.

Figure 1
Heart Rate Relationship to Work Rate Increases

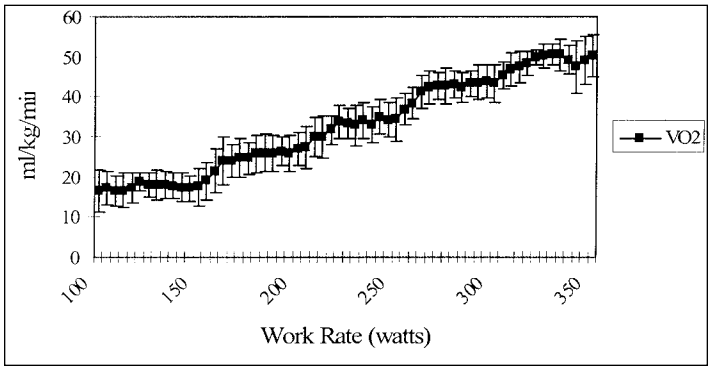
Effect size calculations determined if rate change values within each stage were substantially different. In reference to Table 1, every 4-minute interval indicates a moderate to high rate change. These resultant rate changes for HR provide information that a 2 to 6 (b*min.$^{-1}$) range is considered moderate to high rate change, respectively. A preceding study utilizing two endurance tests of varying work intensities, found a clear condition of steady state during work of approximately 60% of Max VO_2 (Hofmann, Bunc, Letiner, et al.,1994). Their heart rate and VO_2 values indicate variance of 4.7 (b*min.$^{-1}$) and 0.47 (ml*kg^{-1}*min.$^{-1}$), respectively during this condition of steady state. Through the ES calculations of the current study, the rate change for heart rate at any particular stage is statistically considerable. Yet one could argue that in an applied sense, 2 to 6 b*min.$^{-1}$ for heart rate variability is minimal

In relation to VO_2, our findings of 1 to 1.56 (ml*kg^{-1}*min.$^{-1}$) change would indicate a moderate to high ES, respectively. Figure 2 reveals group mean (SD) oxygen consumption across work rate increases. As with heart rate, Table 1 values for VO_2 indicate high to moderate effect size values related to VO_2 rate change.

Conclusion

Multiple body systems allocate resources to perform exercise tests until the dynamic equilibrium is lost and the resources are

Figure 2
Oxygen Consumption Relationship to Work Rate Increases



no longer available to perform the activity (Lemura & Duvillard, 2004). Aforementioned results show indications of plateaus at each level of intensity until volitional fatigue. None of the definitions in our research gave us quantitative ranges for steady state heart rate during the portion of the test when steady state may be evident. Astrand and Rodahl (1986) note that when constant levels of heart rate are attained, steady state has been reached. Our definition, based upon the parameters of our research is a dynamic constancy in heart rate limited to a range of 2 to 6 b*min.$^{-1}$. In addition, this research quantifies VO_2 steady state at between 1 and 1.5 ml*kg^{-1}*min.$^{-1}$. Because ES calculations indicated moderate to large values with both HR and VO_2 values, there is reduced variation for established physiological quantitative steady state. This may allow for a more sensitive quantitative measure of steady state.

Additional research is required for a better determination of the parameters of steady state and associated physiological changes. Quantitative determination of steady state conditions allow for greater accuracy in defining physiological reactions to work.

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Teachers' Ascription of Motives to Girls Involved in Sport: A Preliminary Investigation

By Jimoh Shehu and Dele Akpata

Abstract

Over the years, various studies have examined the factors motivating young people to participate in sports. Yet, for all the attention that has been paid to this line of research, an important variant has remained virtually unexplored: schoolteachers' gendered ascription of motives to young people involved in sport. This study examines the sport participation motives that teachers ascribed to schoolgirls in Tanzania. A Gendered Ascription of Sport Participation Motives Questionnaire (GASPMQ) was administered to 305 (Males=168 and Females=137) Tanzanian secondary school teachers. Fitness motives were ascribed to girls to a larger extent, compared to reasons related to competitiveness, recreation, mastery, social skills, esteem and economic empowerment.

Teachers' Ascription of Motives to Girls Involved in Sport: A Preliminary Investigation

It is axiomatic that teachers are the primary mediators of various curricular and co-curricular activities in the school system. In the context of school sport in Africa, schoolteachers generally act as sport coaches, umpires, and organizers of intra- and extra-mural sport events. As a result, teachers in most African countries are positioned to deepen, heighten and widen youth sport participation, inspire life-long physical activity, and encourage attainment of self-directed sport aspirations. At the same time, however, the teachers' negative preconceptions about sport in the lives of young people can result in concerted efforts to create a non-inclusive, non-responsive, and non-affirming sport policy environment for students.

School sport, as a medium of learning entails the transformation of content into activities geared towards meeting certain objectives. Essentially these activities tend to reflect purposes that adults consider standard, and are likely to validate gendered myths traditions, imaginations, and customs, thereby allowing or disallowing specific ways of experiencing sport and physical education (Flintoff & Scraton, 2001; Hargreaves, 1994).

With regards to the African context, schoolteachers' interpretations and construction of the purposes of sport in the lives of students will influence the policy options they pursue and the amount of emphasis placed on student athletes' integrated learning and self-direction in sport interactions (Ennis, Chen & Ross, 1997, 1999). In this context, gender stereotypes held by teachers will influence their attitudes towards their students' sport participation motivation in a systematic way.

Indeed, research shows that teacher practices are based on stereotyped expectations or belief systems, and that these conceptual bases tend to mediate students' access and success in various school activities (Brophy, 1998; Fang, 1996; Fernandez-Balboa, 1993; Piotrowski, 2000; Scraton, 1993). Researchers have drawn attention to the saliency of cultural and social expectations as determinants of gender differences in school participation, interest, performance, and persistence (Jones & Wheatley, 1990; Parson, Kaczala & Meece, 1982 Spear, 1987). Teachers' social location (Apple, 1990; Heidegger, 1985; Segal, 1998) and the cultural context in which their schools are embedded crucially influence their sensitivity and attitudes towards what students do and the extent to which students are empowered to fulfill activities that are important to them. The situational cues presented by teachers to girls and boys in terms of nature and complexity of tasks, tasks evaluation standards and incentives, as well as the level of autonomy granted to female and male students can encourage or discourage self-regulation, mastery orientation, and gender stereotypic behaviors in students (Ames, 1992; Archer & Scevak, 1998; Grossman & Grossman, 1994).

Generally, the values and structures of youth sport function to reproduce social hierarchy and assumptions about masculinity and femininity (Jarvie, 2006; Coakley, 2001; Sage, 1990 & 1993). As a consequence, young people's participation motives deemed incongruent with the much taken-for-granted gender conventions often get discouraged by teachers as a preventive mode of gender discipline and experiential regulation (Choi, 1999; Gilbert, 1997; Hargreaves, 1994; West & Fenstermaker, 2002; West & Zimmerman, 1987). In particular, studies have demonstrated that girls' attitudes toward sport and sport participation and performance are vulnerable to adults' gender-specific expectations and reinforcement (Coakley, 2001; Cox, 1998; Jarvis, 1999).

The idea that all kinds of social interactions or engagements contain a varying mixture of consensus and constraint, imposing both possibilities and restriction upon the participants, has been noted within symbolic interactionist sociology (Craib, 1992; Cuff, Sharrok & Francis, 1990; Stryker, 1981). Similarly, studies drawing on the self-determination theory (Deci & Ryan, 1985) have increasingly demonstrated powerful links between social factors and the cognitive processes that feed or weaken intrinsic and extrinsic motivations as well as amotivation (Iwasaki and Mannell, 1999; Ryan & Deci, 2000a; Vallerand & Lossier, 1999).

Motivation is a well studied concept among sport psychologists and physical educators in a concerted effort to more fully understand determinants of involvement in sport and physical activity (Duda, 1992; Erpic, Skof, Boban & Zabukovec, 2005; Martens & Webber, 2002; Roberts, 2001; Vallerand & Rousseau, 2001). Motivation is considered critical to sport participation and performance because it demonstrates the intention, activation and regulation or the driving force of a behavior. These are the cognitive processes impelling and facilitating persistent investment of efforts toward attainment of particular objectives (Alexandria, Grouios, Torbatzoudis & Bliatson, 2001; Roberts, 2001; Ryan & Deci, 2000a; Vallerand & Losier, 1999).

Ryan and Deci (2000b) distinguished between level (how much) and orientation (type) of motivation, both of which are affected by the educational process (Harackiewiez & Barron,

1998). A student can be greatly moved to participate in sport because it is interesting, enjoyable, and welfare-enhancing or because he/she wants to appease or obey an authority figure. Studies show that both types of motivation (intrinsic and extrinsic) have implications for students' self determination, self-esteem, competence, relatedness, participation goals and commitment (Chen & Ennis, 2004; Ryan, Stiller & Lynch, 1994; Smith & Smoll, 1990). Contemporary evidence indicates that sport participation motivation occurs along a continuum ranging from intrinsic through extrinsic motivation and amotivation (Landry & Solmon, 2002, 2004; Ryan & Deci, 2000a). The point where a student is located along this continuum - engaging in sporting activity for its own sake (intrinsic motivation), doing it for other goals or ends (extrinsic motivation) and being unsure about the contingencies and benefits of participation (amotivation) is influenced by the actions of key adult figures, actions which have consequences for the student's sport development (Rose, Markland & Parfitt, 2001). This implies that motivation is both a dependent and independent variable, subject to both the individual's volition or agency and the intentional influence of institutions and persons in the wider social networks.

Over the years, various studies focusing on the sport participation motivation of girls and boys reveal that young people are attracted to sport for reasons related to fun, fitness, involvement, skill development, recognition, energy release, and team affiliation (Gill, Gross & Huddleston, 1983; Gould, Feltz & Weiss, 1985; Weiss & Williams, 2004). Yet, for all the attention that has been paid to participation motivation among young people, and the significant influences of parents and coaches in youth sport programs (Horn, Kimiecik, Maltbie, Wong & Rojas 1999; Mageau & Vallerand, 2003; Smith & Smoll, 1990; Weiss, 2003), an important variant has remained virtually unexplored; schoolteachers' ascription of motives to girls and boys involved in sport.

This study measures the sport participation motivations that secondary school teachers in Tanzania ascribe to girls. Ascription of sport participation motives is conceptualized here in terms of ideology or cultural models (Gee, 1996; Strauss & Quinn, 1997) about what constitute legitimate mode of sporting aspirations and expressions for each gender. According to Gee (1996), cultural models include stereotypical conceptions of what is acceptable and unacceptable based on ways of knowing, or in other word, the discursive construction of a phenomenon within a social context. Participation in sport is an embodied and culturally-situated experience predicated on norms, desire, traditions and expectations (Hargreaves, 1986; Sage, 1990). Given the interfacial demands placed on young people in various endeavors by the widely held views and prejudices of significant adults in school and beyond (Volman, Van Eck & Ten Dam, 1995), knowledge of what motivates schoolchildren and youth must be combined with insights about what teachers in general consider appropriate sporting experiences and outcomes for young people.

The study is significant in that it provides an initial informative snapshot of the extent to which secondary school teachers in Tanzanian are more or less favorably disposed toward certain sporting outcomes for girls, thus contributing to the discussions about the psycho-social and structural factors impacting on equity, engagement and self-determination in youth sport settings. Moreover, the results invite teachers to be self-reflective about their assumptions about girls in sport; to view sport participation motivations as overlapping, constructed, contestable and embodied rather than natural; and to appreciate the need for school sport programs that embrace multiple, fluid, and changing subjectivities.

The first objective of this study was to answer one main question; namely, given an array of probable sport participation motives, which of them will Tanzanian secondary school teachers typically ascribe to girls? We expect teachers would regard certain motives as more or less suited to schoolgirls. The second objective was to stratify the ascribed motives based on the magnitude and direction of the teachers' responses. This was based on the expectation that teachers' responses will be grounded on the assumption that some motives are salient. The third objective was to determine gender differences in the responses of the teachers. The expectation was that a teacher's gender will shape the sport participation motives he/she ascribes to girls.

Methods

Participants

Three hundred and fifty Gendered Ascription of Sport Participation Motives Questionnaire (GASPMQ) questionnaires were distributed to teachers at 35 secondary schools by the researchers and research assistants to increase participation. Three hundred and five questionnaires were retrieved, yielding a response rate of 87%. The 305 teachers who participated in this study represented public secondary schools located in eight regions of Tanzania: Dar es Salaam, Zanzibar, Morogoro, Mbeya, Tabora, Ruvuma, Mtwara, and Rukwa.

Instrument

The GASPMQ was developed by the researchers to collect the primary data for this study. The first part of the questionnaire requested demographic information and the second section contained 40 sport participation motivation items. Respondents were asked to indicate the extent to which they agree that given statements describe the motives of girls involved in sport. Responses to the GASPMQ were based on a five-point scale (1=strongly disagree and 5=strongly agree). Respondents were informed about the aims of the study, assured of confidentiality and anonymity, and instructed that the data collected would be used solely for statistical reporting and analysis.

Some of the GASPMQ items were adapted from the Participation Motivation Questionnaire (PMQ) and the Perceived Purposes of Sport Questionnaire (PPSQ) developed by Gill et al. (1983) and Duda (1989) respectively. The first-person pronouns - '*I*', '*we*' and '*us*' - used in the PMQ and PPSQ were replace with '*to*' in the GASPMQ, indicating the subject's purpose or motivation for sport participation.

Twelve items, 1, 2, 5, 9, 17, 20, 21, 22, 25, 31, 39, and 40, were adapted from the PMQ. The original PMQ statements were: "*I want to be physically fit*", " *I like to have fun*", "*I want to improve my skills*", " *I want to gain status of recognition*", "*I like to meet new friends*", "*I like being on the team*", "*I want to stay in shape*", "*I want to become popular*", "*I want to be with my friends*", "*I like to get exercise*", "*I like to feel important*", "*I like the rewards*."

The nine items adapted from the PPSQ were 7, 10, 14, 15, 23, 24, 27, 35 and 37, which were originally phrased: '*give us a chance to become a professional athlete*", "*teach us to be good in sport*", "*prepare us for jobs in the community*", "*prepare us to do things we have to, even if we don't want to*", "*teach us to work together with others*", "*help us move into jobs that pays good money*", "*help us to keep working even when it is difficult*", "*give us self-confidence*", "*teach us how to compete with others*."

Validity and Reliability

The revised instrument was carefully reviewed by the researchers and two colleagues to ensure content and face validity. Additionally, the instrument was pilot-tested by administering it to 20 teachers who were randomly selected from five secondary schools in Dar es Salaam. Feedback from the pilot test was used to further improve the clarity of the items and instructions. The instrument was further examined for reliability and internal consistency, using the Cronbach's Alpha and split-half statistical tests. Results of both tests yielded a score of .99. Cronbach's Alpha scores for the seven sub-scales outlined in Table 1 were .97, .96, .97, .94, .97, .99, and .99 respectively. These scores suggest that the instrument and sub-scales were reliable.

Table 1. ***Inter-correlation Matrix for the Motive Clusters***

Subscales	C1	C2	C3	C4	C5	C6	C7
C1: Physical Fitness	-						
C2: Social Skills	.243*	-					
C3: Competitiveness	.258*	.158*	-				
C4: Recreation	.282*	.336*	.766*	-			
C5: High Esteem	.359*	.792*	.340*	.417*	-		
C6: Personal Mastery	.238*	.402*	.436*	.684*	.322*	-	
C7: Economic Empowerment	.439*	.781*	.324*	.400*	.901*	.306*	-

Note. *Correlation is significant at the p < 0.01 level, two-tailed.

Data Analysis

Data were entered into a Statistical Package for the Social Sciences, Version 15 (SPSS Inc. 2006). Frequencies of responses to the items by the female and male teachers were compared, using the Chi-square tests. Significance level was set at $p < 0.05$. Means, standard deviations and ranking were also computed to compare the magnitude, rank order, and manifest gender differences in the teachers' responses. For tabulation convenience, the responses were categorized as "Disagree", "Neither agree nor disagree" and "Agree" in Table 2. The 40 items on the questionnaire were segmented into seven meaningful clusters to tease out the broader dimensions of ascribed motives. The clusters were based on items conceptually related to the factor solution emerging from previous research on young people's motives for participating in sport. The inter-correlation coefficients for the seven clusters are shown in Table 1.

Table 2. ***Chi-square Tests of Association Between Motive Ascription and Teacher Gender***

	Disagree		Neither agree nor disagree		Agree		Chi-square*	
Statement	F[a]	M	F	M	F	M	F	M	
1. To keep fit	00.0	00.0	1.5	3.6	98.5	96.4	213.8	
2. To have fun	26.3	26.2	4.4	19.6	79.3	54.2	73.0	
3. To relax	29.9	13.7	4.4	8.9	65.7	77.4	179.9	
4. To enjoy herself	8.1	3.6	6.6	23.2	85.4	73.3	208.4	
5. To improve her sporting skills	00.0	10.1	1.5	7.7	98.5	82.2	313.6	
6. To become slim	12.4	10.7	3.6	12.5	84.0	76.8	210.1	
7. To become a successful athlete	30.6	31.5	15.3	17.9	53.1	50.6	81.2	
8. To have a nice time	15.3	12.5	1.5	11.9	83.2	75.6	228.6	
9. To gain recognition	18.3	17.3	8.0	11.3	73.7	81.4	181.4	
10. To become knowledgeable about sports	27.0	20.8	4.4	8.9	68.6	70.3	137.3	
11. To make her family proud of her	32.9	31.6	18.2	12.5	48.9	55.9	39.2	
12. To experience the joys of sport	37.2	30.0	8.1	13.1	54.7	55.9	50.7	
13. To expand her range of capabilities	73.0	63.6	4.4	9.6	22.6	26.8	131.9	
14. To build a career in sport	32.1	26.2	8.8	14.9	59.1	58.9	65.1	
15. To exercise herself discipline	6.6	10.1	6.6	3.0	86.8	86.9	288.3	
16. To display her sporting talents	3.0	6.6	3.5	8.9	93.5	84.5	314.1	
17. To make new friends	66.4	54.2	8.8	9.5	24.8	36.3	54.3	
18. To inspire her peers to excel	26.3	28.0	6.5	13.6	67.2	58.4	102.4	
19. To keep healthy	6.6	9.0	3.7	5.8	89.7	85.2	286.0	
20. To make the school team	26.3	26.2	11.0	17.2	62.7	56.6	117.3	
21. To keep in shape	25.5	22.0	13.2	11.3	61.3	66.7	90.9	
22. To become popular	21.2	19.7	11.6	13.1	67.2	67.2	144.2	
23. To learn networking	6.6	12.5	8.8	13.1	84.6	74.4	213.3	
24. To make money from sport	28.5	22.6	15.3	12.5	56.2	64.9	105.9	
25. To be with her friends	8.0	10.7	2.9	11.9	89.1	77.4	271.6	
26. To become strong	8.0	11.9	3.0	10.1	89.0	78.0	268.8	
27. To learn how to handle challenges	10.2	13.7	5.1	15.5	84.7	70.8	205.9	
28. To impress the audience	14.6	21.4	6.6	13.1	78.8	65.5	160.7	
29. To become a sport administrator	42.3	27.3	20.5	20.9	37.2	51.8	18.6	
30. To gain leadership skills	22.6	18.4	11.0	19.0	66.4	62.5	125.6	
31. To take exercise	2.2	7.8	4.4	10.1	93.4	82.1	286.5	
32. To socialize with other athletes	8.8	13.1	6.6	12.5	84.6	74.4	218.8	
33. To learn from winning and losing	13.9	14.9	8.7	15.5	77.4	69.6	176.2	
34. To have a powerful body	13.8	9.6	8.8	16.0	77.4	74.4	205.5	
35. To gain self-confidence	2.2	3.6	3.6	13.7	94.2	82.7	303.6	
36. To gain sponsorship	35.0	28.6	17.6	23.8	47.4	47.6	33.4	
37. To learn to compete with her peers	21.1	23.8	16.1	22.0	62.8	54.8	112.1	
38. To become a coach	35.8	25.6	24.0	23.2	40.2	51.2	45.5	
39. To feel important	30.7	22.0	8.7	17.8	60.6	60.2	89.6	
40. To receive awards	23.3	21.4	11.7	19.7	65.0	58.9	92.1	

Note. [a]F = Female; M = Male. *All Chi-square significant at p < 0.0, two-tailed.

Results

Demographics Data

Of the 305 participants in this study, 137 (45%) were female and 168 (55%) were male. About 72% were Diploma holders; 24% held Bachelor's degrees; and 4% held Master's degrees. Seventy-eight percent of the respondents were under the age of 40 while 22% were between the ages of 40 and 50. Sixty-one percent had between 5-10 years of experience, 28% had 11-15 years while 11% had between 16 and 20 years.

Questionnaire Data

Table 2 presents the frequencies of responses to the 40 items. Evidence suggests most respondents (range = 22.6% - 98.5%) recognized and agreed that girls involved in sport may hold a range of motives. On one hand, female teachers were more likely than the males to ascribe to girls sport participation motives related, for example, to having fun (79.3 vs. 54.2); improving sport skills (98.5 vs. 82.2); becoming slim (84.0 vs. 76.8); keeping fit (98.5 vs. 96.4); having a nice time (83.2 vs. 75.6); displaying of sporting talents (93.5 vs. 84.5); making the school team (62.7 vs. 56.6); networking (84.6 vs. 74.4); being with friends (89.1 vs. 77.4); having bodily strength (89.0 vs. 78.0); learning how to handle challenges (84.7 vs. 70.8); impressing the audience (78.8 vs. 65.5); gaining self-confidence (94.2 vs. 82.7); taking exercise (93.4 vs. 82.1); socializing with other athletes (84.6 vs. 74.4); competing with peers (62.8 vs. 54.8); and winning awards (65.0 vs. 58.9). Male teachers on the other hand, were more likely than the females to ascribe to girls motives related to gaining recognition (81.4 vs. 73.7); making new friends (36.3 vs. 24.8); keeping in shape (66.7 vs. 61.3); and making money from sport (64.9 vs. 56.2). Results of the Chi-square tests used to compare the female and male teachers' responses were statistically significant at $p < 0.01$, implying that responses to the items were gender dependent (Table 2).

A weighted mean score based on the five-point scale (with a value of 1 through 5) was calculated for each variable and seven motive clusters or sub-scales. The clusters typify motivations related to Physical Fitness, Competitiveness, Recreation, Personal Mastery, Social Skills, High Esteem, and Economic Empowerment. A comparison of the ranks and means detailed in Table 3 reveal some interesting patterns. On the whole the female teachers in this study were more likely to report higher agreement than males on six of the seven clusters: Physical Fitness (4.18 vs. 4.03; Competitiveness (3.98 vs. 3.79); Recreation (3.76 vs. 3.69); Personal Mastery (3.70 vs. 3.65); Social Skills (3.64 vs. 3.54); High Esteem (3.59 vs. 3.54); and Economic Empowerment (3.18 vs. 3.35). In terms of individual items, fewer respondents agreed on motives such as "To expand her range of capabilities" and "To make new friends" (range = 22.6% - 36.3%). It can be seen from the data presented in Table 3 that the ranking of mean scores for both female and male teachers are remarkably similar despite statistically significant differences in response frequencies.

Table 3. ***Means and Ranks for Ascribed Motives by Gender of Respondents***

	Overall (N=305)		Male (N-168)		Female (N=137)	
Items[a]	Mean	SD	M	SD	M	SD
1. Physical Fitness	**4.10**	**1.01**	**4.18**	**1.00**	**4.03**	**1.02**
To keep fit	4.68	.52	4.72	.48	4.64	.55
To become slim	4.08	1.01	4.18	1.01	3.99	1.00
To keep healthy	4.23	.95	4.31	.88	4.16	1.01
To keep in shape	3.55	1.29	3.47	1.34	3.61	1.24
To become strong	4.03	.94	4.18	.86	3.90	.98
To take exercise	4.25	.86	4.45	.69	4.09	.95
To have a powerful body	3.88	1.01	3.91	1.05	3.85	.99
2. Competitiveness	**3.86**	**1.10**	**3.95**	**1.04**	**3.79**	**1.13**
To improve her sporting skills	4.29	.85	4.51	.53	4.11	1.01
To display her sporting talents	4.32	.88	4.37	.76	4.29	.96
To make the school team	3.44	1.16	3.49	.12	3.39	1.19
To learn from winning and losing	3.80	1.08	3.88	1.09	3.74	1.08
To learn to compete with her peers	3.46	1.12	3.52	.11	3.40	1.13
3. Recreation	**3.72**	**1.18**	**3.76**	**1.18**	**3.69**	**1.18**
To have fun	3.55	1.26	3.66	1.17	3.46	1.32
To relax	3.74	1.13	3.56	1.25	3.88	.99
To enjoy herself	4.08	.94	4.21	.94	3.97	.93
To have a nice time	3.92	1.03	4.00	1.06	3.85	1.00
To experience the joys of sport	3.33	1.35	3.35	1.26	3.31	1.41
4. Personal Mastery	**3.67**	**1.33**	**3.70**	**1.33**	**3.65**	**1.34**
To become knowledgeable about sports	3.67	1.23	3.61	1.22	3.71	1.24
To expand her range of capabilities	2.22	1.35	2.18	1.35	2.25	1.36
To exercise herself discipline	4.25	.94	4.26	.90	4.24	.98
To learn how to handle challenges	3.89	1.05	4.02	.98	3.79	1.95
To gain self-confidence	4.32	.82	4.42	.70	4.24	.90
5. Social Skills	**3.58**	**1.27**	**3.64**	**1.29**	**3.54**	**1.26**
To make new friends	2.56	1.47	2.33	1.42	2.76	1.76
To inspire her peers to excel	3.40	1.34	3.50	1.36	3.32	1.31
To learn networking	3.98	1.00	4.11	.90	3.88	1.07
To be with her friends	4.01	.94	4.18	.83	3.87	1.00
To gain leadership skills	3.58	1.14	3.61	1.12	3.57	1.16
To socialize with other athletes	3.94	1.03	4.09	.94	3.83	1.09
6. High Esteem	**3.56**	**1.20**	**3.59**	**1.19**	**3.54**	**1.21**
To gain recognition	3.76	1.09	3.77	1.04	3.75	1.13
To make her family proud	3.31	1.31	3.25	1.32	3.36	1.30
To become popular	3.65	1.12	3.64	1.13	3.66	1.12
To impress the audience	3.71	1.17	3.88	1.09	3.57	1.22
To feel important	3.43	1.26	3.42	1.29	3.49	1.24
To receive awards	3.52	1.21	3.58	1.61	3.48	1.24
7. Economic Empowerment	**3.28**	**1.26**	**3.18**	**1.30**	**3.35**	**1.22**
To become a successful athlete	3.26	1.20	3.28	1.24	3.24	1.18
To build a career in sport	3.43	1.30	3.37	1.25	3.48	1.34
To make money from sport	3.41	1.27	3.26	1.37	3.54	1.17
To become a sport administrator	3.17	1.29	2.97	1.37	3.33	1.21
To gain sponsorship	3.18	1.27	3.11	1.34	3.24	1.22
To become a coach	3.20	1.20	3.09	1.21	3.30	1.19

Note. [a]Scale ranges from "1=Strongly disagree" to "5= Strongly agree." Means above 4 indicate usually ascribed motives

Discussion

This preliminary study measures the sport participation motives ascribed to girls by female and male teachers in Tanzanian secondary schools. The basic postulate of the study was that teachers' explicit or implicit construction of purposes of sport for

girls has implications for the enactment of school sport programs and the constitution of support services for female students. For instance, if the motives that teachers admit to are not within a girl's discursive terms, the intents and desire associated with the girl's subjective positioning could be relegated to irrelevancy or worse, seen as competing with or undermining the official programme objectives. Therefore, if teachers' ascribed sport participation motives are known, the resulting information could be useful in the transformation of school sport on many levels, including: (a) access, (b) participation, (c) administration, (d) instruction, (e) evaluation, and (f) distribution of resources (e.g., material, spatial, financial, temporal, social and political).

On the basis of central tendency, teachers in this study tended to view girls as participating in sport for motives pertaining to physical fitness than to reasons related to competitiveness, recreation, personal mastery, social skills, high esteem, and economic empowerment in that order. Thus, in line with research expectations, teachers in this study are well disposed to certain sport participation motives for girls. Also in line with expectations, the resulting pattern of motive ascriptions tended to be hierarchical. Furthermore, there were significant differences between the responses of male and female teachers. It is noteworthy that respondents in this study were least likely to endorse motives relating to economic empowerment of girls through sport. Various explanations of the findings are possible. It may be that teachers in this study regard sport as a mode of improving fitness level amongst girls. Perhaps the teachers regard physical fitness as a means of contesting the fragility and passivity commonly attributed to female bodies (Lenskyj, 1994; Theberge, 1987; Wright, 1996). The general pattern of the female and male teachers' responses could be subtle intimation of their expectations regarding ways of doing gender in sport or their assumptions about girls (i.e., how they should behave and who they should become). Undoubtedly, such assumptions are implicated in the way school sport rationale is framed and justified, and the way girls are situated as sport participants (Thorne, 1993; William, 1996). They also influence how female and male teachers might go about the distribution of sport resources in relation to needs and demands and how girls' desires are disciplined in sport settings.

One interesting feature of sport participation motives, as exemplified by the items used in this study is just how diverse they are. Indeed, motivational profiles of young sport participants derived from cross-cultural studies (Chen & Hancock, 2006; Kolt, Kirby, Bar-Eli, Blumenstein, Chadha, Liu & Kerr, 1999) suggest a plurality of reasons, implying that any attempts to recognize and affirm some must at the same time fully recognize that the others are equally legitimate. What this implies is that adult's value judgments of what goals or ends 'should' or 'ought' to motivate young people in sport need to be continually deconstructed to insure what is right and best for young people' development and well-being. For some youth, fitness is the pre-eminent reason for participating in sport. However, many others get involved in sport primarily for fun, learning, competition, self-expression, mastery and future utility (Lee, Whitehead & Balchin, 2000; Ntoumanis & Biddle, 1999; Weiss & Williams, 2004; White, Duda, & Keller, 1998). There is mounting evidence that girls are poised and constructed to benefit from sport in many ways. But the way sporting activities are framed, organized, and regulated by adults often limit girls' creative, recreational, developmental and entrepreneurial opportunities in sport settings (Castelnuovo & Guthrie, 1998; Messner & Sabo, 1990). For that reason, educators must continually impress upon all pre-service and in-service teachers, regardless of specializations, that sport can and does help girls keep fit, become psychologically-empowered, develop social bonding skills, enhance personal mastery, achieve performance goals and social recognition, succeed at their chosen careers, and access opportunities for positive, healthy engagement with their schools and community (Frost & Moore, 2006; Theberge, 1987; Wang & Biddle, 2001). Therefore, to prevent motivational deprivation and enhance the right of all students to the multi-dimensional benefits of sport, teachers in charge of school sport must confront their ambivalence to certain sport participation motives.

Conclusion

Given the hidden curriculum of teachers' values and expectations in promoting equalities or deepening inequalities in sport development of young people (Apple, 1990; Fernandez-Balboa, 1993), this paper examined the normative participation motives that Tanzanian teachers attribute to secondary school girls engaged in sport. The sport participation motives that the teachers ascribe to girls cut across multiple goal systems, which have been shown to vary in salience, depending on the context and to interact in an intricate manner in any motivated action (Urdan & Maehr, 1995). On the whole, female teachers were more likely than males to attribute to girls motive clusters related to physical fitness, competitiveness, recreation, personal mastery, social skills, and high esteem. Conversely, the male teachers were more likely than their female counterparts to ascribe to girls motives related to economic sufficiency. Undoubtedly, further in-depth studies and associated theory building are needed to validate and deepen the preliminary results presented in this paper.

The gaps in this study include the non-inclusion of analysis related to boys, and failure to compare the perspectives of girls and their schoolteachers. Future studies combining quantitative and qualitative methods might focus on how girls negotiate, rework, and contest the gendered sport participation motives ascribed to them by their teachers. Instead of merely asking the teachers to come out for or against predetermined items, which tend to limit teachers' responses, it may be desirable to supplement quantitative measures with qualitative data, inviting the teachers to construct nuanced positions on the sport participation motives they attribute to girls and boys.

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Knowledge and Sources of Information of HIV/AIDS among Secondary School Students in Imo State, Nigeria

by Ignatius O. Nwimo and Lois N. Omaka

Abstract

This study was conducted to ascertain the knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria. A sample of 2800 students, aged 16-17 years completed the questionnaire designed for the study. Percentages of correct responses to HIV/AIDS questions were used to describe the knowledge the students had regarding HIV/AIDS. T-test and chi-square were used to verify hypotheses one and two, respectively. Results showed participants had moderate to high level of knowledge in all aspects of HIV/AIDS with boys (M = 58.8%) having, overall, lower level of knowledge than girls (M = 62.1%). T-test showed significant differences in all aspects of HIV/AIDS with girls having higher scores on all subscales. Major sources participants obtained HIV/AIDS information included radio, banners and posters, print media, television, and friends and peers. Chi-square test showed significant differences between boys and girls in most of the sources of HIV/AIDS information. It is recommended that HIV/AIDS education be made an integral part of secondary school curriculum.

Knowledge and Sources of Information of HIV/AIDS among Secondary School Students in Imo State, Nigeria

HIV/AIDS has emerged as a grave public health threat in sub-Saharan Africa, including Nigeria. With more than two-thirds of global HIV infection, sub-Saharan Africa is by far the most affected region of the world. At the end of 2004, it was estimated that about 29 million people were living with HIV infection in this region, with nearly 9% of adults infected (The Joint United Nations Program on AIDS and World Health Organization [UNAIDS/WHO], 2005).

The first case of AIDS was identified in Nigeria in 1986 and the HIV/AIDS prevalence rate rose from 1.8% in 1988 to 5.8% in 2003 (National AIDS and STDs Control Program, 2006). Since 1991 the Federal Ministry of Health has carried a National HIV/Syphilis Sentinel Seroprevalence Survey every 2 years. The most recent survey was completed in 2005 and it was estimated that there were 3,300,000 adults living with HIV/AIDS in Nigeria. In the 2005 survey, the national prevalence rate had dropped to 5% from 5.8% in 2003. However, it found that states' prevalence rates vary from as low as 1.2% in Osun State to as high as 12% in Cross River State. Overall, 13 of Nigeria's 36 states have a prevalence rate of over 5%. These figures give support to the claim that there are explosive, localized epidemics in some states. Presently, in Nigeria it is estimated that over 60% of new HIV infections are in the 15-25 years old age group (USAID, 2007) and this has been attributed to lack of knowledge and unreliable sources of information regarding HIV/AIDS.

It is necessary to ensure that young people have basic correct knowledge about HIV/AIDS. Clear and consistent information can help young people change their sexual behavior (Fee & Rajani, 1995). Education is a key factor in helping people to overcome their fears, ignorance and prejudices and also to reduce the spread of HIV/AIDS. However, lack of knowledge about HIV/AIDS is one of the possible barriers to HIV/AIDS prevention (Chela & Mensah, 1996).

Secondary school is a terminal point for many students, where they are exposed to formal education. Some subjects taught in the secondary school include health education, health science, integrated science and biology, among others. The secondary school age is also very important with regard to the issue of HIV/AIDS knowledge because many of the students are in the stage of adolescence (Rahman & Kabir, 2005), a period characterized by experimentation and imitation. Thus, students may want to try out behaviors, which they have observed among other students or even among non-students around them.

Imo State was created in 1976 by the defunct military administration led by late Major General Murtala Mohammed. The state, though not quite rich, is bordered by neighboring oil rich River State and the commercial Anambra State. The students, especially the girls, often migrate into these states where the rich class can prey them. This situation is capable of increasing the tendency for risk-taking behavior, thus, emphasizing the need for knowledge about HIV/AIDS and desirable sources of information of HIV/AIDS as a strategy for prevention.

In Nigeria, adolescent sexual activity is fast on the increase particularly for those in the secondary school, which exposes them to sex-related problems, including HIV/AIDS (Ezedum, 2001; Ezedum, 2002; Ezedum, 2003; Okafor 1997). Therefore the secondary school is a vital point in the educational system to determine the level of knowledge and sources of information regarding HIV/AIDS so that the students' conceptions and misconceptions could be determined and thus used in planning health education activities concerning HIV/AIDS.

The discussion of issues concerning HIV/AIDS as in this study like any other communicable disease could be conveniently guided by the basic epidemiological format essentially for understanding of communicable disease. Benensen (1975) presented this format as consisting of the definition or meaning of the disease, the causative agent or organism, the manifestations or signs and symptoms, the mode of transmission and the preventive and control measures. This format was adopted in this study in determining the level of knowledge of the students regarding HIV/AIDS.

Several studies guided the selection of known sources of HIV/AIDS information (Hogan & Palmer, 2005; Li, Lin, Gao, Stanton, Fang, Yin, & Wu, 2004; Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000). These sources of information of HIV/AIDS were considered vital for inclusion in this study.

Studies showed secondary school students and other young adults possess low level of knowledge regarding HIV/AIDS. They receive HIV/AIDS information from friends, peers, TV/Video,

magazines and other print media and rarely do they get information from teachers and medical personnel (Sanches, 2002; Sangowawa, Owoaje, & Faseru, 2004). However, the low level of knowledge reported by the secondary school students must have resulted from their sources of HIV/AIDS information. Hartell (2005) had reported that general inadequate knowledge of adolescents about transmission of diseases was associated with conflicting messages about sex and sexuality.

Oladepo and Brieger (1994) found 72.6% of participants in their study indicated kissing, hugging and shaking of hands were the ways by which HIV/AIDS is spread. These beliefs must be countered with more facts and correct information about HIV/AIDS. Regarding sources of information about HIV/AIDS, Oladepo and Brieger (1994) found 51.7% of their participants got their information about HIV/AIDS from newspapers, 10.3% from magazines and journals, 6.8% from radio and 3.6% from television. Underwood (2001) observed many young people were unaware of what constituted risky sexual behavior and young women had far less knowledge about HIV/AIDS than young men (Omoteso, 2004; UNICEF, 2000).

Boyer and Keggles (1997) observed that when young people are not rightly informed about HIV/AIDS, they are more likely to have unprotected sexual intercourse, which might lead to infection with HIV. Many students are at risk because no one including health educators, counselors, health workers, parents and the mass media had told them much about HIV/AIDS despite international recognition of the need for education and communication about HIV/AIDS (El-Gawhary, 2000). Young people today still have limited opportunities to learn about the virus and AIDS.

Thus the purpose of the study was to ascertain the knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria. Two hypotheses were postulated for verification at $p < .05$, thus:

1. There is no significant difference in HIV/AIDS knowledge between boys and girls, and

2. There is no significant difference in the sources of HIV/AIDS information between boys and girls.

Methods

Participants and Setting

Between January and March 2007, a cross sectional survey was carried out among 2800 (boys 1400, girls 1400; age 16-17 years; class Senior Secondary [SS] 2-3) 11th and 12th grades students of both genders randomly drawn from 28 (14 rural, 14 urban) co-educational secondary schools in Imo State, Nigeria. The secondary schools were selected from two (Orlu and Owerri) out of three education zones in Imo State. In each school 50 boys (SS2 25, SS3 25) and 50 girls (SS2 25, SS3 25) were randomly selected using systematic random sampling technique. Compiling two lists one for boys and the other for girls, with respect to grade, facilitated this.

Instrument

The researchers used a self-developed questionnaire, the knowledge and sources of information of HIV/AIDS questionnaire (KSIHQ), which consisted of 48 items arranged in three sections; A, B, and C. Section A, contained three questions about the gender, age and class of the participants. Section B, consisted of 33 items on knowledge of HIV/AIDS. Section C, contained 12 items in which the participants were given the opportunity to select any applicable sources of HIV/AIDS information (See Appendix).

Five experts in health education from two institutions of higher learning in Enugu State were used for validating the KSIHQ. Thirty-two secondary school students (16 each from a rural and an urban school) of both genders (graders 11 and 12) in Okigwe education zone, not included in the study were used for test of reliability. The data yielded a reliability coefficient of 0.78. A further reliability computation of each cluster (knowledge of HIV/AIDS $r = 0.84$, sources of information of HIV/AIDS $r = 0.76$) of the KSIHQ was done. The reliability coefficients were higher than Ogbazi and Okpala's (1994) criteria of 0.60 acceptable for good instruments.

Procedure

Permission was granted from the principal of each secondary school participating in the study prior to data collection. A consent note with the explanation for the research purpose, method of response and assurance of anonymity was attached to each copy of the KSIHQ. Because of the knowledge questions, the participants were seated and supervised in an examination condition during the administration of the KSIHQ. The teachers in charge of the classes used in the study assisted the researchers in supervising the participants. The participants were allowed 45 minutes to complete the KSIHQ.

Data Analysis

The completed copies of the KSIHQ were examined for completeness of responses and copies that had incomplete responses were discarded. Out of 2800 copies of the KSIHQ administered; 2789 (boys 1393, girls 1396) representing about 99.6% return rate, were used for analysis. In describing the participants' HIV/AIDS knowledge, a proportion of less than 20% correct responses was considered 'very low' level of knowledge; 21-39%, 'low'; 40-59%, 'moderate'; 60-80%, 'high', and above 80%, 'very high' level of knowledge (Ashur, 1977; Okafor, 1997). A T-test statistic and chi-square were used to analyze data in order to ascertain the differences in HIV/AIDS knowledge and in sources of HIV/AIDS information, respectively, between boys and girls. An alpha level of .05 was set for both sets of t-test and chi-square test. All data analyses were done with Statistical Package for Social Sciences (SPSS) Version 14.0 for Windows.

Results

Percentages of correct responses to the HIV/AIDS questions and results of t-test are listed in Table 1. The participants possessed high level of knowledge in overall and moderate to high knowledge in all aspects of HIV/AIDS as shown in column one. When boys were compared to girls, girls had higher mean scores in three aspects of HIV/AIDS (meaning, modes of transmission, and preventive and control measures) and in overall knowledge; boys demonstrated better knowledge in the other two aspects (causative organism and signs and symptoms) than girls. T-test indicated all differences in the possession of knowledge between boys and girls were significant with girls scoring higher on most subscales.

Table 1. ***Means, Standard Deviations and T-test Results of Knowledge of HIV/AIDS Questions Between Boys and Girls (N = 2789)***

Aspects of HIV/AIDS	Mean Correct Responses to HIV/AIDS Questions: Overall	Boys (n=1393)		Girls (n=1396)		T-Value
	M+	M+	SD	M+	SD	
Meaning	58.9	57.5	12.8	62.2	11.9	-5.77*
Causative organism	60.6	62.2	14.4	58.9	13.8	6.18*
Signs and symptoms	59.1	63.4	13.9	54.7	13.5	16.77*
Modes of transmission	62.5	52.8	15.7	72.3	18.3	-44.77*
Preventive and control measures	61.5	58.3	15.5	64.6	12.9	-11.67*
Overall	60.5	58.8	13.3	62.1	17.6	-8.84*

+M = Mean in percentages

T-critical for df of 2787 = 1.96,

*Significant at $p < .05$

Percentages of sources of information of HIV/AIDS and results of chi-square test are listed in Table 2. The participants' main sources of information of HIV/AIDS included radio, banners and posters, print media (e.g., books and newspapers), television, and friends and peers. When boys were statistically compared to girls; the boys were superior to girls in three sources of information of HIV/AIDS namely: print media, banners and posters, and movies, cinema and film; girls were superior in other nine sources of HIV/AIDS information studied. Chi-square test indicated differences in most sources of HIV/AIDS information between boys and girls were significant.

Table 2. ***Percentages and Chi-square Test Results of Sources of Information of HIV/AIDS Between Boys and Girls (N=2789)***

Sources	Overall %	Boys (n=1393) %	Girls (n=1396) %	X^2-Value
Radio	81.8	74.4	89.2	18.96*
Print media (e.g., books)	78.8	82.1	74.6	4.67*
School (Teacher)	35.9	22.5	49.2	138.24*
Church	35.5	28.4	42.6	39.20*
Handbills and leaflets	29.5	14.9	44.1	200.14*
Banners and posters	80.9	82.3	79.4	.61
Family members	41.4	18.4	64.3	354.63*
Friends and peers	61.7	57.4	66.0	8.64*
HIV/AIDS campaigns	25.6	16.2	35.0	96.87*
Movies, cinema and film	29.1	47.2	11.1	309.11*
Doctors and nurses	30.3	9.1	51.4	411.95*
Television	73.2	58.7	87.7	80.32*

X^2 – critical for df of 1 = 3.84

$p < .05$

Discussion

The present study determined the knowledge and sources of information among secondary school students in Imo State, Nigeria regarding HIV/AIDS. Results of the study demonstrated that, overall, the participants had high level of knowledge about HIV/AIDS. Regarding the specific aspects of HIV/AIDS, the participants had moderate level of knowledge about meaning of HIV/AIDS, modes of transmission and preventive and control measures. On the other hand, they had high level of knowledge of causative organism, and signs and symptoms. When boys and girls were compared statistically in overall and in specific aspects of HIV/AIDS, it was observed that all differences were significant ($p < .05$) with girls having higher mean scores on most subscales (Table 1).

The participants having high level of knowledge of overall HIV/AIDS; its causative organism and signs and symptoms was interesting since, according to Silverman (1989), the knowledge people have about any disease condition determines what they do about the condition. Recent studies in both developed and developing countries revealed consistent findings among the participants (Ball & Mazarurwi, 2003; Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000; Nwimo, 2006; Tavoosi, Zaferani, Enzevaei, Tajik, & Ahmadinezhad, 2004). Similarly, Omoteso (2004) found gender differences in HIV/AIDS knowledge among the students she studied. One explanation for the consistency in the findings of the present study with those of previous ones is that students across the globe share same characteristics, such as risk-related sexual behaviors, which make them have similar conception about HIV/AIDS. Therefore the findings of the present study are considered plausible and not misleading.

The students' moderate level of knowledge regarding meaning, modes of transmission, and preventive and control measures related to HIV/AIDS are not consistent with those of Mahat and Scoloveno (2006) who found that the adolescents they studied instead lacked knowledge of modes of transmission and most other aspects of HIV/AIDS. The adolescents used in the previous study might have contributed to the inconsistency in the findings.

Regarding sources of information of HIV/AIDS, the participants reported their main sources of information included radio, banners and posters, print media, television, and friends and peers. When boys and girls were compared, statistical significant differences were found in most sources of information of HIV/AIDS (Table 2). From the results, it is evident that the vast majority of the participants received their information on HIV/AIDS from the mass media. Very little communication regarding HIV/AIDS occurred between the participants and their parents, teachers or health workers (e.g., doctors and nurses). This scenario, most often, is as a result of lack of interest on the part of teachers, culture on the part of parents and non-involvement in the organization of school health services on the part health workers. This suggests the importance of involving parents, teachers, health workers and even students in HIV/AIDS education programs. The stimulation of interest in parents, teachers and health workers concerning HIV/AIDS may help them to educate themselves and their children/or students regarding the subject matter (Maswanya, Moji, Horiguchi, Nagata, Aoyagi, Honda, & Takemoto, 1999). Previous studies revealed consistent findings with those of the present study (Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000; Sangowawa, Owoaje, & Faseru, 2004). The implication of the findings of the present study underscores the need for a formal HIV/AIDS education in the secondary school health education or health science curriculum where teachers might have the opportunity of providing scientific information on HIV/AIDS to the students.

Conclusion and Recommendation

One important way of reducing the spread of HIV/AIDS is through provision of worthwhile information on the subject matter. When people are provided with accurate information on HIV/AIDS, they become better able to make informed decisions about their sexual behaviors (Action Health Incorporated, 2003). Though the participants demonstrated an overall high level of knowledge regarding HIV/AIDS, there should be increased teaching efforts in schools with regard to HIV/AIDS. Coalition of the media, non-governmental organizations (NGOs) that are active in grassroots levels and religious leaders who understand what is at stake, are needed in HIV/AIDS information provision because it is possible to reach a great number of people through this coalition. There is considerable rationale to include HIV/AIDS education as an integral part of secondary school curriculum in order to get every teacher compulsorily involved in the provision of HIV/AIDS information.

The results of the study may not be extrapolated to other population groups in Nigeria who may differ substantially in age, sex distribution and economic status. The students surveyed represent an important group of the Nigerian population and information generated will be useful in the planning of future HIV/AIDS programs in secondary schools in Nigeria and other developing countries in Africa.

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Appendix

Questionnaire

This questionnaire is concerned with obtaining relevant information on the Knowledge and Sources of Information of HIV/AIDS among Secondary School Students in Imo State, Nigeria. We assure you that the response you give will be used strictly for the purpose of this study, and that no part of it will be used against you or against your school. Do not write your name or that of your school on any part of the questionnaire. You are required to place a tick (√) where applicable.

Section A: Personal Data

In numbers 1-3, place a tick (√) in the box provided against the option that best expresses your opinion.

1. What is your gender?
   a. Male (boy) [ ]
   b. Female (girl) [ ]
2. How old are you?
   a. Less than 16 years [ ]
   b. 16 years [ ]
   c. 17 years [ ]
3. In which class are you?
   a. Senior Secondary (SS) 2 [ ]
   b. Senior Secondary (SS) 3 [ ]

Section B: Knowledge of HIV/AIDS

In number 4, place a tick (√) in the box provided against the option that best expresses your opinion about the meaning of HIV/AIDS.

4. HIV/AIDS means:
   a. Human Immuno-deficiency Vitamin and Acquired Immune Deficiency Syndrome [ ]
   b. Human Amino-deficiency Virus and Acquired Immune Deficiency Syndrome [ ]
   c. Human Immuno-deficiency Virus and Acquired Immune Deficiency Syndrome [ ]
   d. Human Albino-deficiency Virus and Animal Immune Deficiency Syndrome [ ]

In numbers 5 and 6, place a tick (√) in the box provided against the option that best expresses your opinion about the causative organism of HIV/AIDS.

	True	False
5. Human Immune Disease Virus is the organism that causes AIDS	[ ]	[ ]
6. Human Immune Deficiency Virus is the organism that causes AIDS	[ ]	[ ]

From numbers 7-22, place a tick (√) in the box provided against the option that best expresses your opinion about the signs and symptom of HIV/AIDS.

	True	False
7. Excessive diarrhea for more than one month	[ ]	[ ]
8. Excessive vomiting for more than one month	[ ]	[ ]
9. Excessive passing of urine for more than one month	[ ]	[ ]
10. Excessive spitting for more than one month	[ ]	[ ]
11. Excessive weight loss	[ ]	[ ]
12. Excessive weight gain	[ ]	[ ]
13. Excessive appetite	[ ]	[ ]
14. Excessive loss of appetite	[ ]	[ ]
15. Common cold for one month	[ ]	[ ]
16. Sneezing for one month	[ ]	[ ]
17. Sore throat for one month	[ ]	[ ]
18. Persistent shivering for one month	[ ]	[ ]
19. Persistent fever for more than one month	[ ]	[ ]
20. Cough for more than one month	[ ]	[ ]
21. Persistent skin irritation for one month	[ ]	[ ]
22. Rashes on the skin for one month	[ ]	[ ]

In numbers 23-30, place a tick (√) in the box provided against the option that best expresses your opinion about the mode of transmission of HIV/AIDS.

	True	False
23. Hugging or shaking hands with an infected person	[ ]	[ ]
24. Having sexual intercourse with many partners	[ ]	[ ]
25. Sharing toilet seats with an infected person	[ ]	[ ]
26. Mosquito or insect bites	[ ]	[ ]
27. Transfusion of an unscreened blood	[ ]	[ ]
28. Sharing food with an infected person	[ ]	[ ]
29. Sharing of shaving razor blades	[ ]	[ ]
30. Use of syringes and needles used on an infected person	[ ]	[ ]

In numbers 31-36, place a tick (√) in the box provided against the option that expresses your opinion about the preventive and control measures of HIV/AIDS.

	True	False
31. Taking some antibiotics before and after sexual intercourse	[ ]	[ ]
32. Use of condom during sexual intercourse	[ ]	[ ]
33. Using contraceptive pills	[ ]	[ ]
34. Immunization against HIV/AIDS	[ ]	[ ]
35. Use of herbs from the traditional medicine man	[ ]	[ ]
36. Sticking to one sexual partner who is not infected	[ ]	[ ]

Section C: Sources of Information of HIV/AIDS

From which of the following sources do you receive information about HIV/AIDS? Tick (√) as many as are applicable to you.

37. Radio [ ]
38. Print media (e.g., books, newspapers, magazines etc.) [ ]
39. School (Teacher) [ ]
40. Church (Pastor or Reverend) [ ]
41. Handbills and leaflets [ ]
42. Banners and posters [ ]
43. Family members (e.g., parents) [ ]
44. Friends and peers [ ]
45. HIV/AIDS campaigns [ ]
46. Movies, cinema and film [ ]
47. Health workers (e.g., doctors and nurses) [ ]
48. Television [ ]

■

Physiological responses during shallow water exercise in elderly females

by Leo D'Acquisto, Debra D'Acquisto and Dave Renne

Abstract

The purpose of this investigation was to examine oxygen uptake (VO_2), heart rate (HR), oxygen pulse (VO_2/HR), and ventilatory (V_E) responses of elderly females performing walking and jogging movements in a shallow water medium. Sixteen females (66.3±1.3 yr) performed five, eight min., shallow water exercise (SWE) bouts ranging from low (bout 1) to moderate effort (bout 5). Metabolic response was measured by collecting expired air (open-circuit spirometry), while HR was assessed by telemetry. SWE elicited the following range of physiological responses for bouts 1 to 5: (1) HR and VO_2 ranged from 90±3 to 120±3 bpm (~62 to 83% estimated peak HR) and 0.57±0.02 to 1.19±0.06 $l \cdot min^{-1}$ (~33 to 69% estimated peak VO_2), respectively ($p<0.05$); (2) oxygen pulse increased steadily from 6.3±0.2 to 9.9±0.4 $ml O_2 \cdot beat^{-1}$ ($p<0.05$); and, (3) V_E increased from 13.97±0.93 to 28.00± 1.72 $l \cdot min^{-1}$ ($p<0.05$). Shallow water exercise efforts involving brisk walking, jogging with arms pumping at sides, or jogging in combination with breaststroke arm-like movements resulted in physiological responses conducive to maintaining cardiovascular fitness.

Key words: elderly, shallow water exercise, oxygen uptake, heart rate, ventilation

Rhythmic and continuous limb movements when exercising in a water medium provides a training stimulus for both cardiovascular and muscular development (Hasson, 1998; Kravitz & Mayo, 1997; Takeshima, Rogers, Watanabe, Brechue, Okada, Yamada, Islam, and Hayano, 2002; Tsourlou, Benik, Dipla, Zafeiridis, and Kellis, 2006; Weinstein, 1986). In addition, the buoyancy experienced while exercising in water minimizes compressive joint forces, therefore making water aerobic exercise an attractive physical activity for individuals who are overweight and/or have orthopedic disorders (Hasson, 1998; Kravitz & Mayo, 1997; Weinstein, 1986; Hall, Grant, Blake, Taylor, and Garbutt, 2004). Despite the many positive attributes of water based activity, and the fact that many studies have investigated the physiological responses of deep and shallow water exercise in younger populations (Benelli, Massimiliano, and De Vito, 2004; Gleim & Nicholas, 1989; Hoeger, W., Hopkins, D, & Barber, D. 1995; Svendenhag and Seger, 1992; Town and Bradley, 1991), little research regarding general physiological responses of healthy elderly females performing shallow water locomotion exists (D'Acquisto, D'Acquisto & Renne, 2001; Campbell, D'Acquisto, D'Acquisto, & Cline, 2003)

Metabolic and cardiovascular data presented in the present study is part of a larger scale aquatic exercise investigation (D'Acquisto, et al., 2001). This latter study focused on physiological responses during a continuous 40 minute water exercise class in older females (~67 yrs). Investigators concentrated on reporting metabolic response, expressed as metabolic equivalent, heart rate and rating of perception for select parts (warmup, body, and cooldown) of the 40 minute water exercise session. Members of the University's senior aquatic exercise program participated. These individuals, on average, had participated in aquatic exercise for a number of years, thereby providing the investigators with a unique population to study.

Other aspects of D'Aquisto et al.'s 2001 investigation were measurements of physiological responses during a series of shorter duration (8 minutes) shallow water exercise bouts (walking and jogging) ranging from low to moderate effort. Walking and jogging movements were performed over a 25 meter distance from one end of the shallow water pool to the other while measurements (i.e., open circuit spirometry) were conducted. Another feature of the D'Acquisto et al. (2001) study was that participants were given standard verbal instructions regarding the intensity of effort just before each exercise bout. Although it may be argued that such an approach may not fully optimize control of intensity among participants for each work bout, it does reflect a real field approach in which the instructor delivers a variety of verbal instructions from pool side to participants in order to regulate intensity.

The intent of the present investigation was to describe the metabolic (oxygen uptake (VO_2), carbon dioxide production (VCO_2), cardiovascular (HR and O_2 pulse, (VO_2/HR), and ventilatory responses to submaximal shallow water exercise consisting of walking and jogging performed by older females. In addition, peak VO_2 was estimated based on extrapolating submaximal VO_2 versus heart rate response to predicted HR peak. Knowing estimated peak VO_2 allowed for the computation of relative physiological load (%VO_2 peak) associated with the submaximal exercise efforts. This specific information is not reported in the 2001 study by D'Acquisto et al., and consequently, such data would add to our general understanding of the physiological demands associated with water exercise in older females. Given the popularity of aquatic exercise, an understanding of the general physiological responses to walking and jogging is of importance to the aquatic instructor when prescribing shallow water exercise to an older female clientele.

Methods

Participants

Members of the University Senior Water Exercise Program were screened with a questionnaire developed to determine exercise and medical history. In addition, a Physical Activity Readiness Questionnaire (PAR-Q) was employed to determine readiness to participate in exercise (Kenny, Humphrey & Bryant, 1995). Sixteen females (66.3±1.3 yr, Wt. 76.3±3.2 kg, Ht. 166.1±1.6 cm) who passed the PAR-Q and who were not taking medications to regulate cardiac function, participated in the project after reading and signing an informed consent. Subjects had participated in aquacise exercise for an average of 6 yrs, 3-4 sessions per week, and 40 minutes per session. This study was approved by the University Human Subjects Review Committee.Determination

of oxygen uptake versus heart rate response to shallow water exercise.

Participants were asked to avoid rigorous exercise the day prior to testing, to rest well the evening prior to testing, and to arrive to the morning (~6-9 a.m.) testing session following a 12 hour fast and in a hydrated state. Upon arrival to the pool, participants were pre-fitted with a breathing apparatus (Hans Rudolph, Inc., Kansas City, MO) and a heart rate monitor (Polar). During a standard warmup, participants practiced moving in the shallow end of a standard 25 meter pool while performing walking and jogging like motions. Water temperature ranged from 27.5-28 ^{0}C. In addition, part of the warmup in the water involved the participants moving while wearing the breathing apparatus for familiarization purposes.

Subsequently, participants performed five shallow water exercise bouts ranging in intensity from low to moderate effort. Water level ranged from approximately the xiphoid process to the axillary region (pool depth, 1.2 m). Prior to each exercise effort, standard verbal instructions were read to the participant by the same member of the research team (Table 1). The intent of the verbal instructions was to elicit exercise efforts ranging from low (bouts 1, 2, 3) to moderate intensity (bouts 4 and 5). All participants started with bout 1 and progressed to bouts 2, 3, 4 and 5 with a three minute break between bouts. During the break, participants moved around (walking easy) and stretched. Participants were provided with periodic verbal feedback during each exercise bout to help maintain a steady effort.

Table 1. ***Standard verbal instructions delivered to participants just prior to performing shallow water exercise bouts one through five***

Bout	Instructions
One	Do not use your arms, let arms rest (float) on top of water. Be relaxed, and remember, use no arms. Your legs are walking at a normal pace. Should be able to carry on a conversation and not be out of breath. Maintain an even pace.
Two	Bring arms down to sides and swing naturally through the water. Legs are walking at a normal pace. Should be able to carry on a conversation and not be out of breath. Maintain an even pace.
Three	Use slightly bigger steps, longer strides, with your legs. Keep arms down at sides and swing naturally through the water. Should feel that you are walking with a purpose, like to answer the phone when it is ringing, walking to the golfball after you have hit it, or going after the grandchild. You should still be able to carry on a conversation and not be out of breath. Maintain an even pace.
Four	Legs are now in a jog with arms pumping at sides and underwater. Should feel like you are folk dancing or performing some type of rhythmical dance at a fairly good pace. No kicking or high knees, though. Maintain an even pace.
Five	Jog with arms performing breaststroke movements under and toward the surface of the water. You should feel like you are in an aquacise class working on a particular exercise routine. Maintain an even pace.

Each exercise bout lasted eight minutes. Following approximately three minutes of exercise, subjects were stopped and fitted with the breathing valve. Stop time ranged from 15 to 30 seconds. Subsequently, subjects resumed exercise. After two more minutes of exercise (total elapsed exercise time, ~ 5.0 minutes), two samples of expired air were collected (~75-90 sec collection periods) for the remainder of the exercise bout (3 minutes) through a low resistance collection apparatus (Daniels, 1971) into meteorological balloons and analyzed with a calibrated metabolic unit (Quinton Q-Plex) and a dry gas meter. Metabolic values obtained from the two bags were averaged. It has been reported that a metabolic steady-rate is established with the aforementioned shallow water exercise protocol Campbell, et al. 2003). Average HR over the final three minutes represented the HR response for the exercise bout.

Statistics.

Simple linear regression analysis was employed for oxygen uptake versus heart rate. Individual regression equations were used to project submaximal heart rate to an estimated peak heart rate (210- age; Hoeger, et al., 1995) in order to estimate VO2 peak for shallow water exercise. One way analysis of variance with repeated measures was employed to examine for main effect of shallow water exercise bouts. Post hoc analysis (Tukey) was employed if a significant F value was found. Level of significance was set a-priori at $p \leq 0.05$.

Results

Table 2. ***Summary of regression analysis for oxygen consumption versus heart rate response during shallow water exercise (N=16)***

Variable	Mean	SE	Max	Min
Intercept	-1.467	.226	-.241	-4.479
Slope	.022	.002	.041	.009
r	.987	.002	.998	.964
R^2	.973	.005	.996	.930

Note: SE = Standard Error; Max = Maximum; Min = Minimum

Table 2 provides descriptive data for regression analysis of submaximal oxygen consumption on heart rate response. Individual regression equations were used to estimate each participant's peak VO_2. The average estimated peak VO_2 was 1.76±0.09 l·min^{-1} (23.30±1.18 mlO_2·min^{-1}·kg^{-1}), while estimated peak HR was 144±1bpm. Knowing the estimated peak VO_2 and heart rate (210-HR) allowed for the prediction of relative physiological load (% VO_2 peak, %HR peak) for each exercise bout (presented below).

Metabolic and cardiovascular responses for the five shallow water exercise (SWE) bouts are presented in Table 3. For SWE bouts one to five, VO_2 increased from 0.57 to ~1.20 l·min^{-1}, whereas VCO_2 increased from 0.44 to 0.98 l·min^{-1}. Heart rate ranged from ~ 90 bpm to 120 bpm for bouts 1 to 5 ($p<0.05$). Percentage of predicted peak heart rate varied from ~62 to 83 percent, while %VO_2 peak varied from ~33 to 69 percent for bouts one to five ($p<0.05$). Ventilation increased steadily from 13.97±0.93 to 28.00±1.72 l·min^{-1} (bout 1 to bout 5) ($p<0.05$).

Table 3. ***Metabolic and cardiovascular responses to shallow water exercise bouts one through five***

	Shallow water exercise bout				
Variable	One	Two	Three	Four	Five
VO_2 ($l.min^{-1}$)	0.57±0.02	0.68±0.03	0.84±0.04	1.03±0.06	1.19±0.06
VO_2 ($ml.min^{-1}.kg^{-1}$)	7.50±0.31	9.02±0.31	11.10±0.44	13.71±0.66	15.71±0.83
VCO_2 ($l.min^{-1}$)	0.44±0.02	0.52±0.02	0.66±0.03	0.84±0.05	0.98±0.06
V_E ($l.min^{-1}$)	13.97±0.93	15.89±0.78	18.97±1.10	24.03±1.31	28.00±1.72
HR (bpm)	89.8+3.0	94.2±3.0	100.5±3.2	109.7±3.0	119.5±3.3
% VO_2 peak	33.2±2.0	40.0±2.2	49.4±3.0	60.0±3.0	68.8±3.6
% HR max	62.5±2.1	65.6±2.1	70.0±2.3	76.3±2.0	83.1±2.3

Note: Values expressed as mean+SE. All pair wise comparisons are significant ($p<0.05$) with the exception of bout one versus bout two for VCO2, HR, %VO2 and %HRmax.

Oxygen pulse (ml $O_2 \cdot beat^{-1}$) for bouts 1, 2, 3, 4 and 5 were 6.3±0.2, 7.3±0.3, 8.4±0.3, 9.4±0.4, and 9.9±0.4, respectively. With the exception of bout 4 vs. bout 5, all other pair wise comparisons for oxygen pulse were different from one another ($p<0.05$). The predicted peak oxygen pulse is the quotient of the predicted peak VO_2 and HR . The predicted peak oxygen pulse was 12.3±0.6 ml $O_2 \cdot beat^{-1}$ (0.16±0.008 ml $O_2 \cdot kg^{-1} \cdot min^{-1} \cdot beat^{-1}$).

Discussion

Few studies have reported on the general physiological responses of healthy elderly females performing submaximal shallow water exercise involving whole body translocation consisting of walking and jogging movements ((D'Acquisto, et al., 2001; Campbell et al., 2003). One reason for the lack of research attention may be the difficulty in selecting and establishing an evenly paced shallow water exercise effort which would result in a steady-rate physiological response while the participant is moving from one end of the pool to the other. A second reason may be challenges in establishing a controlled incremental increase in work intensity over a wide range of submaximal efforts.

This investigation found that older females are able to perform shallow water exercise efforts yielding a strong, linear response between oxygen uptake and heart rate when provided with verbal information devised to elicit a steady effort over a continuum of submaximal shallow water exercise exertions. Furthermore, results from the linear regression analysis show considerable variation in slope and intercept values among the participants (Table 2). This may reflect differences in specific walking and jogging movement patterns through the water. This finding suggests that developing individual VO_2-HR regression equations is important, in particular when the intent is to predict VO_2 peak or energy expenditure from estimated peak HR and measured submaximal heart rate response during a shallow water exercise effort.

The average estimated peak VO_2 value was 1.7 $l \cdot min^{-1}$ or 23.3 $mlO_2 \cdot min^{-1} \cdot kg^{-1}$. The estimated peak aerobic power value in this study is reasonable in light of Shepard's (Shepard, 1997) summary report of research showing VO_2 max values ranging from ~20 to 25 ml $O_2 \cdot min^{-1} \cdot kg^{-1}$ for 60-65 year old females for land based activities, and Campbell's (2003) finding of ~22 ml $O_2 \cdot min^{-1} \cdot kg^{-1}$ in females (~67 yrs old) performing maximal shallow water exercise. Despite the strong linear relationship between oxygen uptake and heart rate, one must interpret the estimated peak VO_2 with some caution. Firstly, one is not sure that the VO_2-HR relationship remains linear at higher submaximal shallow water exercise intensities. If the VO_2-HR relationship is exponential at higher workloads (i.e., >70% VO_2 peak), the estimated peak VO_2 of 1.76 $l \cdot min^{-1}$ may be an underestimation of the actual VO_2 peak. Secondly, an estimated HR peak (210-age (Hoeger, et al., 1995)) was utilized in the regression equation to predict VO_2 peak. The associated error with this method of predicting peak HR can be 10-12 bpm (Adams, 1998)).

Campbell et al. (2003) measured a peak HR of 156±5 bpm in healthy, physically active, elderly females (67±1 yr) during a maximal shallow water exercise bout. In comparison, the present study estimated a peak HR of 144±1 bpm. It appears that using the 210-age equation, on average, may result in an underestimation of true max HR achieved by elderly females during shallow water exercise, and consequently, may lead to an under prediction of peak oxygen uptake. For land based activities, 220-age is a popular equation for estimating max HR. The rationale for adjusting the latter equation down by 10 bpm (210-age) for prediction of peak HR during water exercise is that the hydrostatic pressure on the body results in a lowered HR response due to an increased stroke volume secondary to an increased venous return (Svedenhag and Segar, 1992). Additional studies are warranted to confirm the use of 210-age for the prediction peak HR in the water. Such insight would have important implications for exercise prescription for an individual performing exercise in a shallow water medium.

Oxygen uptake for efforts involving easy walking (bouts 1 and 2) to more aggressive walking (bout 3) resulted in a relative physiological load ranging from ~ 33 to 50 %VO_2 peak. Whereas, jogging (bout 4) and jogging with arms undergoing breaststroke like movements (bout 5) elicited a load of ~60 and 69 % VO_2, respectively. The associated increase in oxygen uptake from bout one (0.57 $l \cdot min^{-1}$) to five (1.19 $l \cdot min^{-1}$) was ~ 109% and this was matched with a similar relative increase in ventilation (~ 14 $l \cdot min^{-1}$ (bout 1) to 28 $l \cdot min^{-1}$ (bout 5), 100% increase). These finding suggest that the increase in ventilation was not disproportionate to the rise in oxygen demand associated with performing more demanding movements in the water. This highlights that the older, healthy females did not experience ventilatory distress when performing shallow water exercise efforts eliciting a substantial metabolic demand.

Predicted peak O_2 pulse was 12 ml $O_2 \cdot beat^{-1}$ (0.16 ml $O_2 \cdot kg^{-1} \cdot min^{-1} \cdot beat^{-1}$). Wasserman et al. (1994) has predicted a max O_2 pulse for a 70 year old woman of 8 ml $O_2 \cdot beat^{-1}$, and has indicated that considerably greater values in a cardiovascularly fit person could be possible. Seals, Hagberg, Hurley, Ellsani, & Holloszy (1984) investigated the effects of low (LI) and high intensity (HI) endurance training on maximal aerobic power and its determinants in healthy men and women (age range, 61-67 yr). Estimated O_2 pulse from maximal exercise response presented by Seals et al. (1984), yields values of ~.15 (before training), ~.17 (after LI

training) and ~.19 ml $O_2 \cdot kg^{-1} \cdot min^{-1} \cdot beat^{-1}$ (after HI training). In light of these data, our predicted peak O_2 pulse value of 0.16 seems reasonable.

In addition, submaximal O_2 pulse values increased steadily from 6.3 to ~ 10 ml $O_2 \cdot beat^{-1}$ for movements ranging from walking to jogging with breaststroke-like arm actions, respectively. The change in O_2 pulse most likely indicates an increase in both stroke volume and/or arterial-venous oxygen difference as exercise intensity increased (Wasserman, Hansen, Sue, Whipp & Casabur, 1994).

This study has illustrated that shallow water exercise efforts involving brisk walking, jogging with arms pumping at sides, or jogging in combination with breaststroke arm-like movements resulted in physiological responses which would be classified as moderate intensity (60-79 %HR max, 50-74% VO_2 max) according to Pollock and Wilmore, 1990. The American College of Sports Medicine (Kenny, 1995) recommends an intensity level corresponding to 50-85 % VO_2 max and 60-90% HR max in order to establish cardiorespiratory fitness and muscular endurance in the healthy adult. Although the exercise bouts were eight minutes in duration, D'Acquisto et al. (2001) have illustrated that elderly females can comfortably sustained an average intensity of ~ 52 % of peak metabolic equivalent, and ~ 70% of HR peak for a forty minute shallow water exercise session. In conclusion, the shallow water exercise efforts performed in this study elicited metabolic and cardiovascular responses conducive to developing and maintaining cardiorespiratory fitness and muscular endurance in elderly females. Furthermore, this study provides information regarding the general physiological responses of elderly females performing submaximal exercise in a shallow water medium.

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The Course to Tee off: Golfers' Participation Constraints, Age, Income, and Leisure Identity Salience

by Doyeon Won and Sunhwan Hwang

Abstract

The aim of this study was to investigate whether perceived constraints in playing golf (social isolation, access, personal reasons, cost, time, and facilities) differed based on golfers' age, income level, and leisure identity salience (LIS) as a golfer. A multivariate analysis of variance revealed the significant main effects of age, income level, and LIS on perceived constraints in playing golf. A subsequent multivariate of covariance found that, after controlling for golfers' age and income level, highly identified golfers perceived greater constraints in access, personal reasons, and facilities-related constraints than did less identified golfers. Findings suggest that golfers' socio-demographic characteristics and leisure identity salience may be useful in developing better management or marketing strategies.

The Course to Tee off: Golfers' Participation Constraints, Age, Income, and Leisure Identity Salience

Playing a full round of golf at a golf course requires at least four hours of time, relatively expensive equipment, and payment of substantial user fees. It is well known that golf is a leisure or sport activity that requires a considerable amount of time, money, and effort to participate. Consequently, golf is a leisure activity that comes with a variety of constraints. These constraints could perhaps be the root of the recently observed decline in the total number of golfers in the United States (National Golf Foundation, 2006). According to the NGF, the total number of golfers has declined from 30 million to 26 million since 2000 (NGF, 2006). From this perspective, it is essential to investigate the barriers that prevent people who would like to play golf from participating in the activity. Mitigation of these barriers can provide potential and current golfers with more opportunities for access to golf.

The participation in golf as a leisure activity brings substantial direct and indirect economic impact to adjacent communities. For example, it was estimated that in 2005 the golf industry in the state of Virginia alone generated a direct impact of $1.591 billion, and an indirect and induced economic impact of $1.629 billion (Golf 20/20, 2006). Similarly, the state of South Carolina generated $180 million in federal, state, and local taxes from golf-related expenditures in 2004 (Golf 20/20, 2006). In the case of the Canadian golf industry, it was estimated that golfers spent CND $12.9 billion in 2006 on direct golf expenditures such as greens fees, membership, equipment, and travel expenses (Royal Canadian Golf Association, 2006). Consequently, the Canadian golf community generated substantial tax revenues to local and provincial governments. Therefore, maintaining or increasing the participation in golfing activities by understanding golfers' constraints has substantial monetary value for both individual golf course operators and state and local governments.

Barriers that confine one's capability to participate in leisure and recreational activities, to spend more time doing these activities, to take advantage of leisure services, or to reach a desired level of satisfaction, have been defined as 'constraints to leisure' (Jackson, 1988). In order to encourage people to initiate or continue their leisure activities, knowledge about these limitations is needed. For the current study, researchers investigated the types of active golfers' constraints to golfing activities. Specifically, the influences on these constraints from golfers' demographics (age), socio-economic status (income), and identity salience in golfing activity were explored.

Literature Review

Leisure Constraints in Golf

Previous researchers have categorized leisure constraints in several ways. Crawford, Jackson, and Godbey (1991) proposed three types of constraints: intrapersonal, interpersonal, and structural constraints. Intrapersonal constraints are individual attributes, beliefs, or perceptions that hinder individuals' participation in leisure activities (Crawford & Godbey, 1987; Mannell & Kleiber, 1997). Examples of intrapersonal constraints include negative perceptions toward physical activities and lack of interest. More externally, interpersonal constraints are barriers that arise from interactions or relationships with others when participating in a leisure activity (Crawford & Godbey, 1987; Mannell & Kleiber, 1997). Finally, structural constraints are barriers such as lack of time, money, opportunities or facilities that stand in the way of leisure participation (Crawford & Godbey, 1987; Mannell & Kleiber, 1997).

As alternative categorizations of leisure constraints, Kay and Jackson's (1991) study dealt with the most frequently reported barriers, financial and time constraints while Jackson (1993) and Hultsman (1995) categorized constraints into six categories: social isolation, accessibility, personal reasons, costs, time commitments, and facilities. In addition, Jackson and Rucks (1995) employed eight specific constraints: commitments and time, lack of skills, problems with interpersonal relations, health and physical fitness, geographic accessibility, cost/lack of money, facilities, and other.

Despite the fact that researchers have suggested several different sets of leisure constraints, the basic thrust remains that overall, these constraints "limit people's participation in leisure activities, people's use of leisure services, or people's enjoyment of current activities" (Jackson & Scott, 1999, p. 301). In playing golf as a leisure or sport activity, it is expected that golfers would confront a myriad of these leisure constraints. For example, Petrick, Backman, Bixler, and Norman (2001) suggested that green fees cost, tee-time availability, and lack of time could be primary constraints for golfers. Similarly, time constraints were one of the key influencing factors in selecting a golf vacation package (Geissler, 2005). Because leisure and sport managers can benefit from the analysis of leisure constraints in developing management or marketing strategies to attract leisure participants (Jackson,

1994), golf course managers should identify which constraints most influence golfers' leisure behaviors. Thus, the current study explored the importance (or magnitude) of each leisure constraint in playing golf.

Golfers' Socio-Demographic Characteristics and Perceived Constraints

Certain socio-demographic characteristics are known to influence various leisure behaviors and perceptions; for example, perceptions concerning leisure constraints (Alexandris & Carroll, 1997). Among individual characteristics, socio-economic status (income) and demographic characteristics (e.g., age, gender) are known to influence the level of perceived leisure constraints (e.g., Brown, Brown, Miller, & Hansen, 2001; Scott & Munson, 1994; Searle & Jackson, 1985; Shores, Scott, & Floyd, 2007). For example, leisure participants with low incomes experienced greater or frequent constraints in visiting parks (Scott & Munson, 1994) and in considering a new recreation activity (Searle & Jackson, 1985). In comparison to male counterparts, female leisure participants perceive greater time-related constraints in enjoying their leisure activities (Alexandris & Caroll, 1997; Gunthorpe & Lyons, 2004; Talbot, 1979). Younger individuals perceive more financial constraints than do older individuals in their leisure activities (Jackson, 1993).

As for golfers' income levels, it is expected that lower-income golfers might perceive stronger constraints than higher-income golfers. It is also possible that the types of constraints perceived might be different based on golfers' income levels. For example, golfers higher in income might be less concerned about cost (or expenditure) relative to other constraints, than golfers with lower incomes. Similarly, when considering a golfer's age, it is expected that older golfers, especially retirees, might have more time to play golf. These suppositions led us to choose age and income level as potential factors influencing golfers' perceived constraints.

Leisure Identity Salience (LIS)

According to social identity theory, an individual's identity salience with an object or group is a predictor of their subsequent activities (Tajfel & Turner, 1979). This has been shown to include athletic participation (Santee & Jackson, 1979) and fitness activities (Laverie, 1998). In the context of leisure, leisure identity salience (LIS) is known to correlate positively with the level of effort and skill involved in a leisure activity, time invested (Shamir, 1992), as well as motivations to participate in a fitness activity (Laverie, 1998). In terms of the relationship between leisure constraints and involvement level in a leisure activity, Kay and Jackson (1991) claimed that active participants (high identity salience) perceive stronger constraints (or barriers) than non-participants. If we extend this logic, it is expected that more highly identified golfers would perceived greater constraints in playing golf than less identified golfers. For example, since more highly identified golfers are eager to and actually play more golf rounds than less identified golfers, highly identified golfers are more likely to frequently confront barriers to playing golf.

Through this review, it is clearly appropriate to explore the constraints facing golf participants in order to replicate or refute previous leisure research findings in an alternative context. Additionally, as the above research illustrates, it is important to consider factors that can influence participants' perceptions of leisure constraints. Specifically, socio-demographic and LIS influences have found support in previous study and are applicable to this present investigation. Identifying the influences of these factors on golfers' leisure constraints can be valuable to practitioners in their marketing and management decisions.

Research Purpose

In summary, the primary purpose of the current study was to investigate (a) the relative importance and strength of constraints to playing golf and (b) the relationships of the constraints with golfers' age, income level, and identity salience as a golfer. In addition, the study aimed to explore the influence of LIS as a golfer on perceived constraints after accounting for golfers' age and income level.

Method

Sample and Procedure

The data were collected from 156 golfers at three different public courses in a Southeastern state. Initially, 200 surveys were distributed, of which 164 were returned (82%). Of 164 returned, eight surveys were returned either incomplete or not answered clearly by respondents. Thus, the final data set included 156 surveys. A convenience sampling method was used to collect the data. All participants voluntarily took part in this study and responded to a paper-and-pencil questionnaire.

The average age of the respondents was about 38 years old (M = 37.88, SD = 14.19). The majority of the respondents were male (n = 127; 81.4%) and White/Caucasian Americans (n = 100; 64.1%). The average reported household income was $66,350 ($SD$ = $40,583). The participants played golf an average of 5.35 rounds per month (SD = 5.33), with a median of 4 rounds per month, and have played golf for about 10 years (SD = 10.47), with a median of 6 years. Each golfer reported annually spending $1,573 for golf-related activities (SD = 1,907) with a median of $1,000.

Measures

The questionnaire included 23 items that assessed perceived leisure constraints in golf (16 items) and leisure identity salience in golf (7 items) as well as demographic questions.

Leisure Constraints in Golf. Leisure constraints were measured using a 16 item measure adapted from Jackson's (1993) study (see Table 1). Respondents were asked to rate the extent to which each of the 16 barriers were limiting how much golf they would play if they would like to play more. The responses were measured on a 5-point scale (5 being very much a barrier). This scale was intended to measure golfers' perceived constraints in six areas. Those areas were social isolation (3 items), access (3 items), personal reasons (3 items), cost (2 items), time (3 items), and facilities (2 items). The Cronbach alpha scores for the six subscales were more than acceptable, ranging from .74 to .87.

Leisure Identity Salience in Golf. Participants' identity salience in golfing activities was measured with a 7-item measure adapted from the scales developed by Shamir (1993) and Hoelter (1983).

Table 1. ***Constraints in Golf: Items and Reliability Scores***

Dimension	Item	Alpha
Social isolation		.83
	SI 1. Do not know where to learn golf.	
	SI 2. Do not know where to take part.	
	SI 3. Difficult to find others.	
Accessibility		.80
	AC 1. Cost of transportation.	
	AC 2. Lack of transportation.	
	AC 3. No opportunity near home.	
Personal reasons		.87
	PR 1. No physical abilities to play golf.	
	PR 2. Physically unable to take part in golf.	
	PR 3. Not at ease in social situations.	
Cost		.79
	CO 1. Cost of equipment.	
	CO 2. Green fees and other charges.	
Time		.74
	TI 1. Too busy with my work.	
	TI 2. Too busy with my family.	
	TI 3. Too busy with other leisure activities.	
Facilities		.74
	FA 1. Overcrowded golf courses/club house.	
	FA 2. Poorly maintained facilities/areas.	

All items were measured using a 5-point Likert scale, ranging from 1 as "strongly disagree" to 5 as "strongly agree". An example item reads: "Golf allows me to express myself." The scale had a Cronbach's alpha reliability of .94.

Personal Information. Survey participants were asked to provide their socio-economic characteristics including age, gender, ethnic background, and household income. In addition, they also provided golf-related information such as frequency of participation, years of golf experience, and money spent on golfing activities.

Data Analyses

Descriptive statistics were used to report demographic and golf-related information. Correlational analyses were conducted to explore the relationships among the variables in this study. Three separate analysis of variances (ANOVAs) were carried out to investigate the influences of golfers' age, income level, and golfer LIS on perceived constraints. Results from the ANOVA tests could be utilized to segment the recreational golfer market. Well-defined market segmentations, identified with relevant segmentation bases, can help golf course mangers to develop better marketing and management plans. Further, such analyses could help leisure policy makers in accommodating recreational golfers' needs. A subsequent multivariate analysis of covariance (MANCOVA) was conducted to explore the influence of LIS on perceived constraints in playing golf after controlling for golfers' age and income level.

Results

Descriptive and Correlational Analyses

The results of the descriptive statistics revealed that cost was the biggest constraint in playing golf (M = 3.00, SD = 1.18), followed by time (M = 2.86, SD = 0.98), facilities (M = 2.54, SD = 1.07), social isolation (M = 2.40, SD = 1.05), access (M = 2.31, SD = 1.10), and personal reasons (M = 2.22, SD = 1.20). The results of the item specific analyses indicated that 'green fees and other charges' (M = 3.19, SD = 1.29) was the most important constraint, followed by 'I am too busy with my work' (M = 3.04, SD = 1.24), 'I am too busy with my family' (M = 2.97, SD = 1.23), 'cost of equipment' (M = 2.80, SD = 1.30), and 'facilities/areas are poorly maintained' (M = 2.63, SD = 1.20).

Table 2 reports the means, standard deviations, and correlation coefficients among all variables used in this study. Among the six constraints, the highest correlation was found between access and personal reasons (r = .73, p < .001) and the lowest, but significant, correlation was found between social isolation and time (r = .33, p < .01). As for socio-demographic variables, Age was negatively and significantly correlated with time (r = -.24) while income level had a significant negative correlation with access (r = -.22), personal reasons (r = -.22), and cost (r = -.25). However, gender

Table 2. ***Means, SDs and Corelations among Variables***

Variables	1	2	3	4	5	6	7	8	9	10
Constraints										
1. Soc-isolation	--	.65[c]	.57 [c]	.45 [c]	.33 [c]	.44 [c]	.21 [a]	-.10	.13	-.14
2. Access		--	.73 [c]	.58 [c]	.37 [c]	.68 [c]	.34 [c]	-.04	.07	-.22 [b]
3. Personal			--	.56 [c]	.36 [c]	.50 [c]	.26 [c]	.00	.09	-.22 [b]
4. Cost				--	.42 [c]	.50 [c]	.07	-.07	.00	-.25 [b]
5. Time					--	.41 [c]	.04	-.24[b]	.02	.01
6. Facilities						--	.31 [c]	.04	.09	-.13
LIS										
7. LIS							--	-.12	-.11	.00
Demographic										
8. Age								--	-.08	.26 [c]
9. Gender									--	-.14
10. Income										--
M	2.40	2.31	2.22	3.00	2.86	2.54	2.67	37.88	1.19	66.35
SD	1.05	1.10	1.20	1.18	0.98	1.07	1.01	14.19	0.39	40.58

Note: p^a < .05, p^b < .01, p^c < .001

was found to have no correlation with any constraints. In terms of the relationships between LIS and constraints, LIS had significant positive correlations with access (r = .34), facilities (r = .31), personal reasons (r = .26), and social isolation (r = .21), but not with cost and time.

As reported, the results indicate that perceived constraints in golfing activities are correlated with LIS, golfers' age, and economic status (income level), but not with golfers' gender. To further explore the effect of LIS, age, and income level on constraints, three seperate analysis of variance (ANOVA) tests were conducted. Gender was not included in the further analysis due to (a) lack of correlations with other variables examined and (b) the small sample size of female golfers in this study. For each of three independent variables, a 40-40 split was chosen to reduce errors associated with a median split method (Cacioppo, Petty, & Morris, 1983). The respondents who occupied the upper 40% in LIS, age, and income level were classified as the 'highly identified', 'older', and 'high income' golfers, respectively, while those in the lower 40% of the distribution were classfied as the 'less identified', 'younger', and 'low income' golfers. The remaining 20% of the respondents were excluded from analyses.

ANOVA: Influence of Golfers' Age, Income Level, and LIS

Three separate ANOVA tests were conducted to test the effects of golfers' age, income level, and identity salience as a golfer on perceived constraints in playing golf (see Table 3). For golfers' age, and income level, 40-40 splits (the top 40% vs. the bottom 40%) were used to define younger (M = 24.52 years old; n = 64) and older (M = 51.45 years old; n = 67) groups as well as low (M = $34,510; n = 63) and high (M = $100,300; n = 64) income groups. A 40-40 split produced high LIS (highly identified, M = 3.65; n = 63) and low LIS (less identified, M = 1.70; n = 62) groups.

As shown in Table 3, ANOVA on each of the six constraints indicated that the effect of LIS is significant for social isolation, $F(1, 123) = 4.26$, $p = .041$, access $F(1, 123) = 15.65$, $p < .001$, personal reasons, $F(1, 123) = 9.06$, $p = .003$, and facilities, $F(1, 123) = 8.60$, $p = .004$, with the highly identified golfers more strongly expressing their concerns about these four types of constraints. Regarding the effect of golfers' age, younger golfers considered time as a greater constraint than did older golfers, $F(1, 129) = 9.98$, $p = .002$. The ANOVA also revealed a significant difference between lower and higher income groups on personal reasons, $F(1, 125) = 6.94$, $p = .009$, and cost, $F(1, 125) = 4.30$, $p = .04$, with the lower income golfers more strongly concerned about personal reasons and cost as constraints.

MANCOVA: Unique Influence of LIS

A multiple analysis of covariance (MANCOVA) was conducted to explore the effect of LIS on perceived constraints while controlling the effects of golfers' age and income. Reported LIS was included as between-subjects factors, six constraints were the dependent variables, and participants' age and income level were included as covariates. Results are summarized in Table 4.

Table 4. ***Summary of Multivariate Test (MANCOVA) with References to Main Effects for Leisure Identity Salience (LIS) and Tests of Between-Subjects Effect***

Test	*Value*	*F*	*df*	*p*	η^2
Multivariate					
Wilks' λ	.79	5.03	6, 116	.000	.207
Univariate test of between-subjects effects of LIS on Constraints					
Social isolation		3.87	1	n.s.	.031
Access		16.46	1	.000	.120
Personal reasons		9.88	1	.002	.075
Cost		0.01	1	n.s.	.000
Time		0.06	1	n.s.	.000
Facilities		9.54	1	.002	.073

With the use of the Wilks' λ criterion, the effect of LIS on the mean vector involving six dependent variables (six constraints) combined, was found to be significant after controlling for the

Table 3. ***Analysis of Variance (ANOVA) for LIS, Age, and Income Level on Perceived Leisure Constraints in Golf***

	Age			Income			LIS		
	Younger	Older	*F* (1,129)	Low	High	*F*(1, 125)	Low	High	*F*(1, 123)
Social isolation	2.54	2.21	2.84	2.48	2.34	0.53	2.19	2.58	4.26[a]
	(1.14)	(0.90)		(1.06)	(1.08)		(0.89)	(1.19)	
Access	2.31	2.16	0.59	2.53	2.19	3.01	1.88	2.61	15.65[c]
	(1.16)	(0.97)		(1.16)	(1.02)		(0.90)	(1.15)	
Personal reasons	2.23	2.06	0.62	2.49	1.94	6.94[b]	1.91	2.54	9.06[b]
	(1.32)	(1.05)		(1.28)	(1.03)		(1.08)	(1.23)	
Cost	3.12	2.75	3.33	3.18	2.77	4.30[a]	2.98	3.02	0.02
	(1.27)	(1.05)		(1.15)	(1.07)		(1.26)	(1.22)	
Time	3.07	2.55	9.98b	2.98	2.92	0.14	2.85	2.88	0.04
	(0.93)	(0.96)		(0.92)	(0.94)		(0.99)	(1.04)	
Facilities	2.48	2.43	0.08	2.63	2.46	0.89	2.29	2.84	8.60[b]
	(1.12)	(1.01)		(1.05)	(1.03)		(1.01)	(1.09)	

Note 1: Standard deviations are in parentheses.
Note 2: $p^a < .05$, $p^b < .01$, $p^c < .001$

combined effects of covariates, Wilks' $\lambda = .79$, $F(6, 116) = 5.03$, $p < .001$. The results indicates that there are statistically significant differences among LIS groups in terms of their perceived leisure constraints in golf, after adjustment for golfers' age and income level.

The Univariate ANOVA tests revealed significant differences for three of the six dependent variables. The univariate test revealed significant group differences in (a) access, $F = 16.46$ at $p < .001$, (b) personal reasons, $F = 9.88$, $p = .002$, and (c) facilities, $F = 9.54$, $p = .002$. This meant that golfers who highly identify themselves to golf (high LIS group) tended to perceive those three constraints as bigger constraints than those who less strongly identify themselves to golf even after accounting for golfers' age and income level. For the covariate effects, golfers' income levels had significant effects on access, personal reasons, cost, and facilities, while age had a significant effect on one dependent variable, namely time.

Discussion

The current study aimed to investigate the types of perceived constraints in golfing activities for active golfers. In addition, the perceived strengths of the constraints were examined in relation to golfers' demographic and socio-economic status (i.e., age, income level) and their identity salience as golfers.

The results of the descriptive statistics showed that cost was the biggest constraint to the golfers, followed by time, facilities, social isolation, access, and personal reasons. It is clear that most golfers tend to think of golf as a prohibitively expensive leisure activity. As the number of golf courses increases, the managers of golf courses should strive to provide and promote competitive green fees in order to attract more golfers. In addition, various special discounts for green fees can help more golfers overcome this cost constraint. In order to remove some of the other golfers' constraints, golf course managers should consider such practices as maintaining golf courses properly (facilities), hiring more golf instructors (personal reasons), and establishing efficient booking systems (time) based on their targeted golfers' needs and perceptions. Such activities can allow golf course managers to expand their customer base while promoting the sport of golf as a participant sport.

Findings also revealed that there are significant and positive relationships between constraints in golf and the level of LIS. This means that golfers who highly identified themselves with golf are more likely to perceive stronger constraints in their golfing activities. On the other hand, golfers who are less identified as a golfer are likely to consider constraints as weaker barriers. This finding is consistent with Kay and Jackson's (1991) suggestion that leisure participants more frequently report constraints than did non-participants in a leisure activity. As highly identified golfers actually play more golf (golf rounds) and are more eager to play more golf than less identified golfers, highly identified golfers are likely to be exposed to constraints more frequently (Kay & Jackson, 1991). As Crawford et al. (1991) asserted, leisure constraints not only influence whether individuals participate or opt to not participate in a leisure activity, but also affect active participants' choice whether or not to specialize themselves into a leisure activity. Findings from the current study suggest that constraints are strongly perceived by more highly identified golfers than less highly identified golfers. Specifically, in terms of correlations, golfers' LIS was strongly associated with Social Isolation, access, personal reasons, and facilities. It should be noted that golf course managers or leisure policy makers cannot remove all the constraints or barriers for golfers. However, some of the barriers can be mitigated. For example, a golf course manager could actively promote their golf course's availability of instructional programs to remove constraints related to personal reasons ("do not know where to learn golf"), or established buddy program (i.e., a service that provides golf partners) for club members to remove constraints related to social isolation ("difficulty to find others").

Golfers' age and income level were strongly associated with time, access, personal reasons, and cost. These results indicated that older golfers perhaps have more time to play golf than younger golfers, and concurrently that golfers with lower income experienced access, personal reasons, and cost constraints more heavily than golfers with higher income. In interpreting these results, managers should develop marketing strategies to attract more golfers by providing golfers in these specific segments with better ways to navigate these constraints.

The results of the three separate ANOVA clearly demonstrated significant main effects of golfers' age, income, and LIS on perceived constraints in golfing activities as well. Specifically, golfers who more highly identified themselves as a golfer perceived greater constraints in terms of access, personal reasons, social isolation, and facilities than did those who weakly identified themselves as a golfer. Younger golfers felt strongly about time-related constraints than did older golfers. In addition, lower-income golfers considered personal reasons and cost as stronger constraints than did higher-income golfers. As the results indicate, golf course mangers, in understanding their customers, should consider golfers' socio-economic characteristics jointly with their identity salience as golfers. Such understanding should be the first step in developing better marketing strategies or more effective leisure policies.

Finally, the current study illustrated, using a MANCOVA, that the influence of LIS on constraints was significant even after controlling for golfers' age and income level. Improved booking systems, and improved facility maintenance could help address facility-related constraints. Operating a shuttle bus system and providing a buddy program could be some of the exemplary practices to remove constraints related to personal reasons and accessibility. When developing a new golf course, developers could consider potential golfers' accessibility to the new golf course as cost of transportation as these can be problematic issues for many golfers.

'*Core*' golfers, defined as golfers who play more than eight rounds per year, accounted for 91% of rounds played and 87% of golf-related spending (Golf 20/20, 2007). Given that all of the participants in this study are "core" golfers, findings from the current study can provide critical information to golf course managers and leisure policy makers. Constraints for core golfers should be identified and removed to accommodate core golfers' needs. In doing so, golf course mangers and leisure policy makers should understand the influence of golfers' age, income level, and identity salience on these constraints.

Limitations and Future Studies

The results should be read with several limitations. The first limitation is related to the sampling method used in this study. As indicated, a convenience sampling method was employed to explore the perceived constraints of golfers. In addition, due to the sample size, the current study could not explore the influence of golfers' additional demographic characteristics such as gender and ethnic backgrounds. According to the National Golf Foundation's (NGF) report (2006), women golfers comprised approximately 24% of all the U.S. golfers. While the proportion of the female respondents in this study was small (18.6%; 29 female respondents out of 156 total respondents) and did not yield a sufficient number to perform further gender-based statistical analysis, it was still reasonably in line with that of the current U.S. golfers' market. The recent market trends indicate that the number of female golfers has increased steadily in recent years (NGF, 2006), and it is clear that the importance of female golfers in the U.S. golf industry will be greater as (a) the growth rates of female golfers in every age category are faster than those of male golfers, and (b) the popularity of the Ladies Professional Golf Association (LPGA) is increasing (Berkley Consulting, 2004). Consequently, future studies should examine female golfers' perceived constraints in their golf-related activities. In order to ensure the generalizability of the study's findings, as well as a sufficient sample size for a gender-based analysis, further studies should include broader samples with different sampling methods.

As the focus of the current study was to explore the influence of golfers' socio-economic status and identity salience as golfers on leisure constraints in golfing activities, the relationship between leisure constraints and other related constructs such as constraints negotiation (Samdahl & Jekubovich, 1993), leisure affordances (Pierskalla & Lee, 1998), and facilitators to leisure (Raymore, 2002) were not explored. To find better ways to remove golfers' constraints, further studies should explore the causal relationships among constructs mentioned above.

In addition, the researchers suggest that golfers' constraints can be studied in conjunction with the concept of service quality (Zeithaml, Parasuraman, & Berry, 1990) because golf can be considered as a sport or leisure service. Some of the service quality dimensions are directly or indirectly related to leisure constraints. For example, Ko and Pastore (2005) suggested that such service quality (sub)dimensions as sociability, operating time, program information, facility ambience, and design were critical in recreational sports. Those service quality dimensions would be related to such constraints as time (operating time), facilities (facility ambience), and personal reasons (sociability). Given that the level of service quality influences the clients' satisfaction, purchase/usage intention, and repeat patronage (Murray & Howat, 2002; Yu, Chang, & Huang, 2006); further studies should closely examine the relationships between leisure constraints and service quality, including subsequent outcomes such as customer satisfaction and re-purchase intention.

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Promoting the Health and Fitness of School Faculty, Staff, and Administrators in a Southeastern Louisiana School District

by Millie Naquin, Ph.D., C.H.E.S.; Marie Zannis, Ph.D., C.H.E.S.; and Angelle Lowe, M.A.

Abstract

Over 400 individuals were sent an online survey with sixteen items concerning the development of a school-based employee health promotion program. Subjects included employees of three high schools and a school board, staff and administrators, school board members, and retirees. Of the 116 respondents, 73% were female and 59% were faculty members. Over 62% cited physical activity or exercise as the most important program component while 20% chose stress management and 17% nutrition. Respondents expressed most interest in walking (78%), weight lifting (54%), and Pilates and Yoga (35% each). Other activities of interest were relaxation techniques (59%) and presentations by nutritionists or chefs (56%).

Promoting the Health and Fitness of School Faculty, Staff, and Administrators in a Southeastern Louisiana School District

An essential component of a Coordinated School Health Program (CSHP) is health promotion for faculty and staff (Allensworth & Kolbe, 1987). This key component of CSHP not only improves the quality of life of employees but impacts the health outcomes of students through adults modeling healthful behaviors to students (Eaton, Marx & Bowie, 2007). Health promotion for employees is a necessity for helping schools with rising health care costs. In a study conducted in a Nevada school district, it was found that for every dollar spent on a school employee wellness program, there was a savings of over fifteen dollars due to reduced absenteeism (Aldana, Merrill, Price, Hardy & Hager, 2005). Gebhardt and Crump (1990) also noted decreased health care costs, less workplace absenteeism, an increase in levels of fitness and decreases in coronary heart disease as a result of worksite health promotion programs (WHPP).

The United States government recognizes and encourages health promotion and disease prevention and strongly supports employees' participation in WHPP (U.S. Office of Personnel Management [OPM], 2006). In order to help reduce the risk of premature morbidity, mortality, and disability, an increasing number of worksites are adopting health policies and programs. According to the Centers for Disease Control and Prevention (CDC, 2006), diseases could be prevented or controlled if individuals adopted healthy behaviors in such areas as physical activity, nutrition, and alcohol and tobacco use. WHPP promote ways to live a healthy lifestyle and support a healthy environment. Since one of the best ways to reach people is through the work place, it is considered effective and convenient for employees to receive health information and services at the worksite.

WHPP can greatly enhance the work force effectiveness. Therefore Healthy People 2010 recommends the following objectives for WHPP (U.S. Department of Health and Human Services [USDHHS], 2000):

- Increase the proportion of worksites that offer comprehensive employee health promotion programs.
- Increase the proportion of worksites offering employer-sponsored physical activity and fitness programs.
- Increase the proportion of worksites employing 50 or more persons that provide programs to prevent or reduce employee stress.
- Increase the proportion of employees who participate in employer-sponsored health promotion activities.

One of the main goals in WHPP is to encourage and motivate individuals to make positive health behavior changes. In designing WHPP, it is important to identify potential participants' wants and needs. As noted by Marcooci (1990, p.531), "Wellness programs are designed to fit employees' level of readiness to adopt healthy behaviors." According to Anspaugh, Hunter, and Mosley (1995), to assure an appropriate impact on health care costs, WHPP should be adequately marketed, planned, timed and all workers should be considered.

The purpose of this study was to determine if a health promotion program would be of interest to faculty, staff, and administrators as a part of a Coordinated School Health Program in rural Louisiana and to discover in which activities employees would be willing to participate and which other health behavior changes they would be likely to adopt.

Methods

A pilot survey was created using an online website, Survey Monkey (www.surveymonkey.com, 2007), to solicit information about the development of a school-based health promotion program in a school district located in southeastern Louisiana. The content of the survey was reviewed by four experts in worksite health promotion. From this review, revisions were made to the content and format of the survey. Afterwards the survey was emailed to twelve teachers who completed it online. Based on their comments, additional changes in format or content were made and an estimate of the time needed to complete the survey was determined.

Over 400 individuals in a school district in southeastern Louisiana were emailed the final online copy of the survey. Potential respondents included faculty, staff and administrators from all three high schools in the school district (parish or county), school board members, and administrators and staff employed at the local school board. After two weeks, non-respondents were sent an additional email, prompting participation. Of the potential respondents (N = 430), 116 responded to the survey (22 individuals declined participation and 291 did not respond).

The final 16-item survey consisted of demographic questions as well as items related to WHPP preferences and format. Demographic questions solicited information such as gender, professional status, years of work in public schools, and birth year. Items dealing with the WHPP aspects of the survey included

information about preferred program components (physical activity or exercise, nutrition and stress management) and specific activities in each component; possible length of time of after-school WHPP sessions; willingness to receive well-tested recipes for healthful foods and instruction via internet; and the likelihood of attending WHPP face-to-face sessions.

Descriptive statistics were calculated to describe individuals by demographic variables and to determine WHPP preferences and format. Chi-square statistics were performed to determine possible differences by selected demographic variables and WHPP issues. Open-ended questions were reviewed qualitatively.

Results

Of the 116 respondents, 27% were male and 73% were female. Within the three high schools and school board, 59% were faculty members, 26% were staff, 3% were retirees and 12% indicated "other." This sample had 1-38 years of experience in public schools.

Over 62% of employees cited physical activity or exercise as the most important program component, 21% favored stress management and 17% cited nutrition as the most important component. Differences in program component preferences were examined by gender. These data are presented in Table 1.

Table 1. ***WHPP components preferences by gender***

WHPP Components	Males *N* (%)	Females *N* (%)
Nutrition	6 (21)	12 (16)
Physical Activity or Exercise	13 (45)	53 (69)
Stress Management	10 (35)	12 (16)
$\chi^2(2, N = 106) = 5.89$, p = .05 *Percentages are rounded.		

Of the 116 respondents, 74% said they would most likely participate in an after-school WHPP. The interest in the types of physical activities varied among the respondents. Seventy-eight percent expressed a strong interest in walking, while weightlifting was favored by 54%, and Pilates and Yoga were favored by 35% of the employees. Other activities, such as learning relaxation techniques, were of interest to 59% of the respondents, and attending presentations by nutritionists or chefs was favored by 56% of them. There were statistical differences in the types of physical activity preferences by gender and by status (faculty or staff member) (Tables 2 and 3).

Seventy-four percent of the respondents said that they would be willing to exercise a third day on their own outside of the program to enhance their physical fitness and weight management. In addition, 81% were interested in receiving some instruction about health promotion activities via the internet. Finally 95% were interested in well-tested recipes for preparing healthy foods.

Respondents were able to make written comments regarding the development of a WHPP. Several agreed to participate in the program, indicating they were excited and looking forward to the program. One person stated he/she was "thrilled that the school board is finally recognizing the importance of fitness and wellness for all employees." This person also indicated that he/she would like to see WHPP continue and other disease prevention programs developed. Another person thought the WHPP "sounds awesome" and would like to see WHPP expanded to faculty and staff in the elementary levels. A majority of the respondents supported the idea of the WHPP.

Table 2. ***Physical activities preferences by gender***

	Male N (%)	Female N (%)	$\chi 2$	p Value
Walking				
Yes	17 (59)	65 (84)	8.00	.005
No	12 (41)	12 (16)		
Jogging				
Yes	9 (31)	10 (13)	4.66	.031
No	20 (69)	67 (87)		
Pilates				
Yes	4 (14)	31 (40)	6.67	.010
No	25 (86)	46 (60)		
Aerobics				
Yes	3 (10)	30 (39)	8.05	.005
No	26 (90)	47 (61)		
*df = 1 for all above.				

Table 3. ***Physical activities preferences by staff or faculty status***

	Staff N (%)	Faculty N (%)	$\chi 2$	p Value
Balancing				
Yes	6 (14)	21 (34)	5.55	.018
No	38 (86)	41 (66)		
Yoga				
Yes	11 (25)	27 (44)	3.85	.05
No	33 (75)	35 (56)		
*df = 1 for all above.				

Other comments were from people who were interested in the program but for some reason would not be able to participate. Some of the reasons they could not participate were time constraints and that program days would conflict with their schedules. Other reasons for not participating were obligations outside of work such as picking up their children. One respondent commented that he/she would rather not exercise with a group because of feeling self conscious about his/her weight.

A few individuals gave suggestions for the program such as adding more days, or offering other days and times that could work with several time schedules. A suggestion of an additional day for physical activity within the program was made since some individuals would not exercise on their own for a third day because of no access to equipment or a lack of motivation. A question was raised about whether or not participants needed to stay for all three program components, physical activity, stress management and healthful eating. Overall, respondents thought the idea of the

development of the WHPP for employees was a "fantastic idea."

Discussion

Although more U.S. adults are becoming less physically active (Barnes, 2007), our respondents (75%) indicated a strong interest in the WHPP, especially in the physical activity component for two days a week. Further, a majority of the respondents indicated they would exercise on their own for a third day not associated with the planned program. Most of the respondents said they would be willing to receive health promotion instruction through the internet. Health promotion especially in the form of increased physical activity among employees could improve the overall health of the participants, cut down on absenteeism, and reduce health care costs incurred by the school board.

Our findings indicate that a majority of individuals were interested in the WHPP. However, gender differences were apparent with more females indicating that they would participate in physical activities like walking and Pilates. More males expressed a desire for stress management and healthful eating strategies. Since stress may be a major factor in retention of teachers (Eaton, Marx & Bowie, 2007), stress management strategies should be incorporated into school-based health promotion programs. Differences by gender and status were apparent in this study and should be taken into account when advertising and implementing specific activities. Some of the respondents indicated interest in only one or two of the three program components; thus planners might consider this request in the final construction of a WHPP.

This survey was administered to school faculty, staff and administrators using the online software package, Survey Monkey (www.surveymonkey.com, 2007). Although there were additional emails sent to remind individuals to answer the survey, the response rate was still low. Some professionals were unable to access their emails because of local computer servers. Some could not take the time to complete the survey online. Even though this sample size might be considered small if viewed as a percentage of all 430 possible participants, the impact of 116 people in one agency improving their health-related behaviors could be extremely important. To increase response rates, future studies might provide faculty and staff with the option to answer a printed copy or an emailed survey.

Baseline data from Healthy People 2010 indicate that less than 50% of worksites with 50 or more employees offer activities for physical activity or fitness and less than 40% provide stress reduction strategies (USDHHS, 2000). Results of the School Health Policies and Program Study of 2006 revealed that most schools in the United States do not offer a comprehensive employee wellness program (Eaton, Marx & Bowie, 2007). In our survey results, employees expressed that they were heartened to know that the school board was finally recognizing the importance of employee wellness and that the school board would be providing a WHPP.

With over 140 million workers in the United States (CDC, 2006) and an estimated 6.7 million employed in schools (US Department of Education, 2007), it is essential to develop interventions to improve employees' quality of life through WHPP. This survey has provided vital information about the perceived needs of these local school board employees, faculty and staff to adequately plan and implement an effective WHPP. Although school-based health promotion programs are often the least developed component of CSHP, outcomes of such a program can include reductions in health care costs, increased savings due to less occupational injuries and use of sick leave, and quality of life improvements among more contented employees (Directors of Health Promotion and Education, 2007).

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Mentoring Young Women for Success as International Physical Educators

by Glenna G. Bower and Mary A. Hums

Abstract

The study identified knowledge and skills important for young women faculty as International Physical Educators. The study focused on three research questions, (a) what teaching advice would a mentor provide a young woman faculty member? (b) what scholarship advice would a mentor provide a young woman faculty member? and (c) what service advice would a mentor provide a young woman faculty member? A phenomenological design and constant comparative analysis were used to examine the mentoring relationship (N = 5). Results indicated the knowledge provided to protégés outweighed the teaching of skills and women were more likely to nurture the psychosocial benefits of mentoring.

There is no universal definition when it comes to defining mentoring, however, it appears terms such as facilitate, assist, help, and reciprocity seem to describe this ancient term that was first predicated in the classical vision of Odysseus (Wright & Smith, 2000). The term "mentor" actually derived from the character named Mentor. Mentor was a faithful friend of the Greek hero Odysseus in Homer's epic story *The Odyssey*. When Odysseus left for war, Mentor was left behind to serve as a tutor to his son, Telemachus. Mentor served in this role, earning a reputation of being wise, sober, and loyal. The classic understanding of the term "mentorship" evolved from the relationship of these two characters. This myth embodied many of the positive attributes associated with the mentoring relationship (Wilson & Elman, 1990). Research has consistently demonstrated that mentoring provides substantial benefits to both protégés and mentors within business (Allen, Poteet, Eby, Lentz, & Lima, 2004; Ragins, Cotton, & Miller, 2000), academia (Baker, 2002; Miller & Noland, 2003), and the sport industry (Bower, 2004; Bower, Hums, & Keedy, 2006; Weaver & Chelladurai, 2002). One area of particular importance within academia where mentoring has played a role in skill development is within physical education departments (Bower, 2006; Bower, 2007b).

If one was to define mentoring as it relates to academia, the definition may go as follows, "the practice of mentoring is to advise and guide another, providing wisdom and inspiration as a result of experience" (Miller & Noland, 2003, p. 84). Mentoring is of particular importance to women due to the perceived barriers to forming a mentoring relationship (Ragins & Cotton, 1999; Weaver & Chelladurai, 2002). Mentoring young women faculty is important early in an academic career because a mentoring relationship can provide guidance to the protégé about the world of "academia" and the respective university (Miller & Noland, 2003). The guidance may come by way of two distinct sets of mentoring functions – career and psychosocial (Kram, 1985).

The career functions include sponsorship, exposure and visibility, coaching, protection, and providing challenging assignments. Sponsorship occurs when the mentor highlights the young woman faculty to help her build a reputation within the organization. Exposure and visibility would allow the young woman faculty to become acquainted with higher administration such as the dean of her school or college. Coaching is provided through feedback on projects or presentations. During the protection phase, the mentor would shield the young woman faculty from making mistakes while taking the blame if she makes a mistake. Finally, challenging assignments help the protégé gain valuable teaching and research skills. All the career functions are most directly associated with three areas where women lag behind their male counterparts: (a) promotions, (b) salaries, and (c) power (Kram, 1983).

The psychosocial functions include role modeling, acceptance and confirmation, and friendship. Role modeling happens when the mentor effectively performs tasks or interacts with superiors, subordinates, and peers. Once the young woman faculty observes the mentor's values, attitudes and behaviors, the mentor serves as a role model. Acceptance and confirmation occurs where the mentor expresses confidence in the young faculty by creating a mutual trust, leading to support and encouragement. The mentor helps the young faculty member solve personal conflicts which are distracting from effective performance through the counseling function. Finally, the friendship function is characterized by social interaction (Kram, 1985).

Problem Statement

Although the largest body of research on mentoring has been conducted in education (Bloom, Durand-Bush, Schinke, & Salmela, 1998), limited research has focused on mentoring young faculty within physical education in North America (Bower, 2006; Bower, 2007b; Savage, Karp, & Logue, 2004; Silverman, 2003). Therefore, the purpose of the study was to identify the knowledge and skills important for the success of young women faculty as International Physical Educators. The study focused on three research questions with regard to international physical education, (a) what advice would a mentor provide to a young woman faculty member to improve her teaching? (b) what advice would a mentor provide to a young woman faculty member to improve her scholarship? and, (c) what advice would a mentor provide to a young woman faculty member to improve her service?

Method

Phenomenological Genre

A phenomenological genre was chosen to examine the lived experiences of a small number of people living a phenomenon. By utilizing the traditional German philosophy, the researchers sought to understand the deeper meaning of international academic leaders and how they articulated their mentoring experiences (Rossman & Rallis, 2003). These mentoring experiences often dictate how one may mentor future protégés in academia (Bower, 2006; Bower, 2007b).

International Academic Leaders

The International Association of Physical Education and Sport for Girls and Women (IAPESGW) board of directors were contacted to identify potential mentors for this study. A total of five (N=5) academic women from various countries were chosen to be interviewed at the IAPESGW 2005 Congress. Sample size was based on the recommendations for a phenomenological study by Rossman and Rallis (2003), who indicate it is unwise to recruit more than three to five individuals because of the three very long interviews. The study also provided saturation of the data where there was repetition in the information being reported (Seidman, 1998).

Pilot Study

The three phenomenological interviews used in this study have been used quite frequently in business settings by their creator Allen, Poteet, & Burroughs (1997). The phenomenological interviews have been tailored to meet the needs of sport and mentoring women and were introduced by Bower in 2004. Since then the interviews have been used in sport settings to study mentoring women (Bower, Hums, & Keedy, 2006), in physical education academic settings (Bower, 2006; Bower, 2007a; Bower, 2007b), and with students (Bower, Hums, & Keedy, 2006). For this pilot study, the researchers allowed an expert in the area of international physical education to examine the questions followed by interviewing one prominent international academic leader. The prominent international academic leader was asked the original proposed set of questions and, following the interview, the questions were revised.

Data Collection

Demographic information along with in-depth interviews were collected for the data analysis. An explanation of the interviews used to collect the data follows.

Demographic Information. The demographic information was asked during the first interview and consisted of age, race, number of years within academia, number of years as an international physical educator, and number of years within international sport.

Interviews. The phenomenological genre required extensive and prolonged engagement with the international academic leaders through the use of intensive, iterative in-depth interviews (Seidman, 2003). Each of the interviews served a particular purpose in examining the mentoring relationship. The first interview provided a description of the personal life history of the mentor as a protégé. During the interview, participants were first asked general demographic information and then about the dynamics of their protégé experience. The second interview focused on the present and highlighted the mentors' current relationships. This interview provided details on how the mentor guided women protégés in teaching, scholarship, and service to succeed within international academia. Finally, the third interview brought the two interviews together in providing a reflective piece. How did the mentors' experience as a protégé influence the way they mentored young women faculty within international academics?

Data Analysis Procedures

Wolcott's (1994) four phases of analyzing and interpreting were used to reduce the interview data: (a) organize, (b) familiarize, (c) categorize, and (d) code. The researchers organized the data by recording each interview and using verbatim transcription, followed by labeling each transcript with a pseudonym, journaling the data and notes, and using qualitative software HyperResearcher 2.6. The research was read and reread for familiarization of the data. HyperResearcher 2.6 allowed for coding and categorizing the data, which involved comparing all transcripts and coding them, a common method called constant comparative analysis (Glaser & Strauss, 1967). A code was any phrase or statement that stood out in describing the mentoring phenomenon for the research study. The information from the transcripts was coded and compared until categories were developed. HyperResearcher 2.6 helped the researchers to cluster the categories as themes began to emerge, and in the final stage the researchers identified preliminary words to describe the emergent themes.

Trustworthiness of the study

The researchers used several methods to produce a trustworthy study, or "findings worth paying attention to" (Lincoln & Guba, 1985, p. 290). The researchers pursued multiple perspectives about the mentoring relationship: "they searched for truths, not Truth" (Rossman & Rallis, 2003, p. 65). Several strategies helped establish the truth claims of the qualitative research at hand. First, authentic tape-recorded conversations and verbatim transcripts, structured interviews, pilot questions, and the constant comparative method were all used to maintain credibility (internal validity) of the study. Second, thick description (Erlandson, Harris, Skipper, & Allen, 1993) was illustrated through the quotes added to the results section of the paper and provided transferability (external validity). Third, external auditing; a prominent international academic leader examined the interviews, notes, and transcripts throughout the study providing dependability (reliability). Finally, premature conclusions and bias were limited by making a conscious effort to remain neutral in body language and verbal responses during the interviews which supported confirmability (objectivity).

Results and Discussion

The Protégé Experience

The personal life history of the mentor as protégé was examined during the first interview. This interview was conducted to establish some baseline demographic information on the mentor, and to examine the dynamics of the mentoring relationship as a protégé. Understanding the dynamics of the relationship may help determine how their mentoring relationship might have influenced ways to mentor women in regards to teaching, scholarship, and service within international academia.

For this study, two mentors were from Canada, two were from Germany, and one was from the United Kingdom. The mentors were involved with international sport for an average of 30 years and in academia for an average of 28 ½ years. All the mentors indicated they experienced an informal (unstructured) mentoring relationship as a protégé. A mentor talked about structured and unstructured mentoring programs in Europe,

> The mentoring was unstructured. I think the whole mentoring and all of these formalities and contracts [about mentoring] is

> still a new practice in Europe, because I think I have heard this word maybe 15 years ago and not 25 to 30 when I started my career.

Research indicates protégés perceive their informal mentors (unstructured mentoring relationships) as more effective than formal mentors (structured mentoring relationships) and they also perceive that they receive greater compensation than protégés of formal mentors (Ragins & Cotton, 1999). These attributes would support the career functions of coaching and challenging assignments mentioned in the study.

The career-related functions of sponsorship, exposure and visibility, coaching, protection, and challenging assignments (Kram, 1985) are often present in the life of a new faculty member, however for this study only coaching and challenging assignments were evident. For example, the mentor provided coaching by guiding the mentor as protégé to learn how to deal with future teachers, "well she [mentor] was a leader in the field of teaching, and I learned a lot about how to deal with future teachers of physical education by watching her." This coaching function supports research conducted with first-year faculty, presenting evidence mentors may provide knowledge and skills, as well as productive feedback on teaching skills, projects, manuscripts, and presentations to first-year faculty (Bower, 2006; Bower, 2007b).

One mentor explained the challenging assignments she received from her mentor related to physical education and dealing with people with disabilities, "I started in the 1960's and it was very unusual for someone in physical education and sport to deal with people with disabilities. . . I had encouragement from a teacher at the university to go to other places and participate in courses to learn more about disabilities." These courses were challenging to the mentor and provided her with greater responsibility to learn about a subject that was hardly known by her teachers, "These mentors themselves were not always the experts . . . they were interested to know more about it [physical education and people with disabilities]." This supports challenging assignments of first-year faculty who were given more responsibilities by their mentors to prepare them for greater responsibilities (Bower, 2006; Bower, 2007b).

Although career functions were present, they were not mentioned as often as the psychosocial functions of role modeling, acceptance and confirmation, and friendship displayed in this study. Research indicates psychosocial functions are very important during a young protégé's educational period or early career (Allen, Russell, & Maetzke, 1997). Bower's (2006) research indicated young faculty felt the most important functions provided by their mentors were encouragement, increasing their self-confidence, and serving as positive role-model functions typically psychosocial in nature.

The psychosocial function of role modeling was evident as a mentor explained the concept of what role modeling from her protégé has meant to her,

> It is important for young women to have female role models. . . I have had fantastic male role models. And they have been very valuable and I have appreciated the experience they have passed and I think I've appreciated people like my female mentors more in some ways, because they understand what they had to do in addition where they they've been. My role was easier because of what they have done.

Weaver and Chelladurai (1999) explained psychosocial functions as social interactions between the mentor and protégé. This interaction requires the protégé to share personal and work experiences with the mentor. Trusting the mentor to share personal and work experiences involves role modeling by the mentor where the protégé desires to follow.

Acceptance and confirmation were evident by the nurturing characteristics displayed by the mentors. One mentor explained,

> She [mentor] was a huge mentor for me. She was a very generous person and I never realized until later how generous she had been in giving me the space to develop and giving me support when I had new ideas. . . . she was encouraging because she wanted people to develop.

The nurturing characteristics are not uncommon in the academic setting. Baker (2002) suggested nurturing characteristics of a mentoring relationship as a means for reducing isolation for the young faculty member. Bower (2007a) found common characteristics of mentors included those that were nurturing: having the ability to be supportive, provide encouragement, to be empathetic and picking out the strengths of others within physical education settings.

Friendships often developed between the mentors and protégés. For example, "I would say that with most of my mentors I have a friendship relationship. It was not maybe in the beginning, but came over the years." Kram (1983) indicates of the five phases of the mentoring relationship, the redefinition phase (mentoring relationship turns to a friendship) will take place and provide new roles and responsibilities for the mentor and protégé. In this case, the protégé may take on the role of mentoring young faculty. The mentor will eventually come to be valued as a colleague and a resource to the former protégé. These results also support studies by Baker (2002) and Marshall, Adams, and Camerson (1998) on women in Canada and Australia who valued the importance of friendship and support as effective characteristics of a mentoring relationship.

The Mentor Experience

The personal life history of the mentor was examined during the second interview. This interview was conducted to reflect on the present and highlighted present mentoring relationships with women in international physical education departments. The focus was on detailing how the mentor guided women protégés to succeed in teaching, scholarship, and service within international physical education departments.

Knowledge and Skills – Teaching. The mentors were asked about the knowledge and skills they provide in terms of teaching to young women in physical education within international academic setting. The mentors introduced two themes as important for women teaching physical education in this environment. The mentors talked about the importance of learning pedagogy. The first category discussed was the need to expand teaching capabilities by attending other colleagues' lectures,

> Go out and listen to lectures in other areas and other disciplines. I think this is something that kind of broadens your horizons. We sometimes tend to specialize and specialize and specialize and that's okay, but also have a broader perspective and if you can develop some language skills, then that's absolutely necessary.

The second category dealt with ways to test students fairly. A mentor explained, "I would say to my protégé [young faculty member], you should be looking for different ways of testing students, what kind of exams, how to mark, and grade fairly." The third category established the importance of an evaluation system for young faculty to improve on their teaching, "I recommended people coming in and evaluating the young woman faculty while they were teaching and to see if there was something different they could be doing." Finally, the fourth category included being aware of using inclusive language while teaching. A mentor explained, "I worked hard at mentoring young faculty to get to use inclusive language. . . teaching health issues can have some pretty sensitive issues, like eating disorders, sexuality, or alcoholism."

The second theme included teaching the young women faculty to be professional. First, the mentors established the importance of not having personal relationships with students. A mentor explained,

> You don't mix work and personal relationships, particularly professional relationships and I've been in that as well, particularly between students and staff, you know, it's a no-no and yet it's so frequent, sadly. Because I think the power relationship's abused in that respect.

Second, the mentors discussed the importance of establishing morals and ethics in terms of making decisions. The participants suggested not allowing students to play on your emotions when making decisions in terms of changing a grade, missing class, or changing a policy. A part of being professional is making a decision that is morally and ethically right. For example,

> I teach young women faculty about morals and ethics in terms of decision making. Be cautious about emotion based decision making. It (decision making) is all about making the right decision and suffering the emotional consequences.

Finally, the mentors stressed the importance of a young woman understanding gender equity. A woman described what this means,

> I think it's a betrayal if women to use their femininity to beguile, for instance, or cry gender and equity if it's not there. I mean if it's there, cry it loud and clear, but either way, I think you have to be professional.

These teaching attributes are related to career functions of coaching and challenging assignments (Kram, 1985). Mentoring behaviors such as these are more directly related to enhancement of the task-related aspects at work and facilitating career success (Allen et. al, 2004). These teaching attributes are not uncommon in the academic literature within physical education. Bower (2007a) reported on chairs mentoring young faculty within physical education departments. Similar teaching attributes found in Bower's (2007a) study included developing a teaching style, understanding course evaluations, and developing and changing exams. Miller and Noland (2003) also found similar recommendations on improving teaching through observation of good teachers and obtaining feedback.

Knowledge and Skills – Scholarship. The mentors were asked about the knowledge and skills they provide in terms of scholarship for young women in physical education in an international setting. The mentors introduced one theme important in terms of scholarship for young women in physical education in this work setting. The mentors discussed the importance of research early in a young woman's career. The first category consisted of developing a research agenda. The mentor focused on stressing to the young women faculty to establish a research agenda with awareness that we are living in a multicultural society. A mentor explained,

> I think we are living really in a multicultural society with people with disabilities, from other religious and cultural backgrounds, all this I think is very helpful in maybe developing your own agenda for the future, but also your research agenda in a way.

The second category consisted of the importance of working with students on research projects, but the ethical obligation of a faculty member providing credit for the paper when that credit is necessary. A mentor explained her story about how she was introduced to publishing and established a set of rules for herself,

> I got to know it [publishing] in the beginning like this - it was like you write a paper and the professor is publishing it. I totally disagree with this. I totally disagree. However, all the papers that people have written under my direction, were published under their name and not under my name. If we wrote it together, then it's both names.

The third category discussed the importance of a research assistant position following graduation to gain additional experience in teaching and scholarship. This mentor explained her experience as she would to a fellow protégé,

> When I was finished with my studies, I graduated and I got a position as a research assistant at this university for five years. I was a teaching staff at the University. I was not only providing seminars but also teaching volleyball, rowing, skiing . . . In addition to that, I could also do seminars for students on particular topics like sports and physical activity for children with disabilities and so on. This was parallel to teaching at a special school and not a full time job. For ten years I was not only a research assistant, but I was teaching at a special school for children with learning disabilities and intellectual disabilities.

According to Ransdell, Dinger, Beske, and Cooke (2001) scholarship usually refers to research funding, number of

professional presentations, publications of peer-reviewed journal articles, books, book chapters, and monographs, and training graduate students to be researchers. The mentors in this study focused on the research agenda, what to focus on, and the ethics and morals of student research. This is slightly different than the study conducted by Bower (2007a) and Miller and Noland (2003) who indicated it was important to establish a research agenda, but it was also important to present and work with other faculty to publish as well.

Knowledge and Skills – Service. The mentors were asked about the knowledge and skills they provide in terms of service for young women in physical education within an international setting. The first category they introduced related to how service was not going to be an issue for young women faculty entering international academia. For example, "I told the protégé [young woman faculty] she would not have an issue with serving on committees because there would be many of them." The second category stressed the importance of choosing committees wisely. A mentor explained, "I told the protégé [young woman faculty] that she would be asked to serve on many committees every year . . . she would need to pick and choose and be smart about it." Finally, the third category expressed the importance of making sure the young woman faculty does not get involved in too many committees early on in her career. A woman explained, "Be careful of your service components, because it should not be your main area of interest . . . you do not want to be on too many committees."

The mentors provided detailed information when it came to service in terms of committees. The committee involvement provides young women faculty an opportunity to grow professionally through building skills, keeping current in the field, and making connections (Miller & Noland, 2003). The mentors provided a good example of the career function of "protection" phase where the protégé does not accept too many responsibilities. This protection phase is especially important for first-year faculty in staving off burn-out and reaching true potential (Bower, 2006).

The Mentoring Relationship

The third interview focused on examining the protégé and mentoring experience. This conceptualization helped in determining how the mentors' experience as a protégé influenced the way they mentored young faculty women within international academics. The protégé experience provided career and psychosocial functions. However, there was a stronger emphasis on psychosocial support. This result is nothing new to the female population in academics.

The mentors' experience as a protégé did influence their decision to mentor young women today. A mentor explained,

> I believe in giving back. I believe there is responsibility especially for young women who don't necessarily see possibility in themselves and I would say that you have to help them see that possibility. I would say also I just think that it is important for young women to have female role models.

The majority of studies indicate mentors note the desire to help others is a primary means for mentoring (Allen, et. al, 1997). This type of mentoring is often associated with "other-oriented empathy," "which is defined as the tendency to feel empathy and responsibility for the welfare of others" (Allen, et. al, 1997, p. 83). This "other-oriented empathy" is not uncommon in sport and physical education in North America (Bower, 2004; Bower, 2006; Bower, 2007b; Bower, Hums, & Keedy, 2006).

Implications and Future Research

The study provided some interesting implications from a global standpoint for those women entering a physical education department. First, the study supports a mentoring relationship in helping women obtain the knowledge and skills necessary to strive within physical education departments. The career functions are important as the mentor and protégé work towards improving teaching, scholarship, and service. Future mentors may want to consider the importance of providing knowledge versus teaching skills. The knowledge (being professional, understanding gender equity, etc) mentors provided the protégés outweighed the teaching of skills (teaching pedagogy).

Second, although career functions were important the study indicated women were more than likely to nurture the psychosocial or emotional benefits of the mentoring relationship. Mentors need to take this into consideration when mentoring women. Women are often engaged in mentoring that is strongly associated with a psychosocial relationship developed between the mentor and protégé (Ragins & Cotton, 1999). However, the provision of psychosocial mentoring is strongly associated with the protégé's satisfaction with the mentor (Allen, et. al., 2004).

The results reveal a number of opportunities for future research. Future research should include protégé interviews to determine why they enter mentoring relationships. Second, a broader sample should be selected and a different method used for obtaining data. For example, a quantitative study could be conducted where the mentoring relationship could further be examined within international academia. Third, a closer look at the career and psychosocial functions need to be examined with women in other industries. Do women tend to lean more towards the psychosocial functions than the career functions in other industries?

Conclusion

The purpose of the study was to identify the knowledge and skills important for the success of young women faculty in international Physical Education Departments. The results revealed interesting findings supporting the knowledge these mentors provided protégés as opposed to the skills needed to succeed in the academia. The psychosocial functions cannot go unnoticed when mentoring women. Therefore, it is important to continue expanding our understanding of the mentoring relationship in order to develop our future scholars.

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An Examination of Television Coverage in U.S. High School Athletics

by Chad Seifried, Brian A. Turner, Keith Christy, Daniel F. Mahony, and Donna Pastore

Abstract

This article chronicles the positive and negative consequences of televising interscholastic athletic events. The study further explores the extent and range of television coverage for each of the 51 state high school athletic associations within the United States through 26 collected responses (51.0%) from athletic association executive directors. Specifically, the questionnaire addressed or focused on (a) how extensive television coverage of state association sponsored regular seasons games (e.g., High School Game of the Week) were in their respective state and (b) whether or not states reached an agreement to broadcast championship games/events. Overall, this study suggests a great opportunity exists for those institutions and organizations interested in broadcasting high school sport but suggests schools recognize the need to responsibly managing those broadcasts because of the age group involved. Finally, this paper offers several topics related to television and high school sports we should consider studying more closely in the future.

An Examination of Television Coverage in U.S. High School Athletics

The commercialization of high school athletics emerged as a significant topic of discussion in recent years likely due to national and regional broadcasters increasingly opening spaces for interscholastic sporting events or sport-related shows on their networks. Take for example 2006, ESPN and its sister networks (e.g. ESPN2, ESPNU, and ESPN360) contracted to broadcast twelve high school football match-ups (up from four in 2005). MTV developed an eight-week show, which documented Alabama football power, Hoover High School's 2005 season. NBC also produced a television series called "Friday Night Lights," based off the popular book and film about a high school in Texas (Spanberg, 2006). Notably, this exposure prompts the use of television to surface as a major topic for debate among school boards and their communities because some anticipate interscholastic athletic broadcasting "will become consistently profitable within five to ten years," (Spanberg, 2006 p.6).

The first regular television broadcasts of American high school athletics started during the early 1980s in a small Midwestern community as a result of their local radio station signing-off well before the start of the local school's Friday night football contests (Philadelphia Inquirer, 2001). In order to assuage local citizens' concerns about the progress of the game, a single camera was mounted on the stadium to broadcast the football contests into the community's roughly 2,000 homes (Philadelphia Inquirer, 2001). As the 1980s progressed, the cable television industry grew which allowed some select high schools to broadcast various athletic contests on local, regional, or national channels.

Debate about the appropriateness of televising high school athletics contests began in the 1980s and continues today. Again, the recent public attention high school student-athletes received from the Internet, ESPN, MTV, Fox Sports Net, NBC, and other local/regional stations along with restrictions or specifications implemented by national, state, and local association governing bodies incited dialogue and interest about the special benefits and drawbacks of combining television with high school sporting events (Spanberg, 2006). Criticism and support for the broadcasting of high school athletics materialized from a variety of individuals.

This article seeks to identify these sources and recognize the positive and negative consequences of televising U.S. high school athletic events for schools and their communities as a commercial product. In addition to this objective, the study also intends to describe the current position or status state high school athletic associations hold related to the televising of high school sport. State high school athletic associations are important to survey because they typically exist as the major governing body, which regulates, coordinates and promotes member athletic programs in their attempt to reach educational, financial, and media objectives. This article also addresses the television issue as a potential marketable product for high school institutions based on this combination of sources. Finally, this work offers future areas to study so we can understand television's impact on high school athletes and athletics in order to more adequately manage television broadcasts in this unique environment.

Negative Consequences

Sports Illustrated brought national attention to the high school sport and television debate with a series of articles and editorials between 1989 and 1990. Reilly (1989) mentioned his various concerns with SportChannel America, a national cable network appearing in 8.5 million homes in 1989, and their desire to broadcast fourteen high school football games and 24 other high school events from all across the United States. Within his article, Reilly suggested television will influence high schools to engage in more illegal recruiting, practice win or die coaching methods (e.g. playing injured players or trying to hurt others), allow sponsors to dictate the terms of the contest or student-athlete choices, and encourage the athletic department to first focus on the bottom line rather than the student-athlete experience. Additionally, Reilly posited television adversely affects the student athlete by creating more "prima donna" or vain tendencies, increasing injury rates, and perhaps negatively affecting student-athlete maturation if their failures are broadcast to thousands or millions of people.

Similarly, Freeman (2002) and Wolff (1990) also offered television coverage allows high school student-athletes to become mythical or national figures well before they start a college or professional career. For example, LeBron James was well known for his basketball ability before he started his career in the National Basketball Association (NBA). The Internet also can aid television producers seeking to broadcast high school sports stars because

fans of college programs increasingly want more information about "Blue Chip" or highly prized recruits (Spanberg, 2006). The Internet provides continuous replays for those who wish to see high school students in action. Obviously, this sort of attention could improperly intrude or disrupt the life of a young person and negatively affect their future. Wolff (1990) suggests this intrusion and image creation could provide serious problems for the likely ill-prepared student-athlete because the tremendous pressures to succeed can overwhelm his/her immature or underdeveloped coping skills. That was often the debate following the television coverage of James and other interscholastic athletic stars.

In recent years, televising high school athletics provided the opportunity for *USA Today*, Fox Sports Net, *Street & Smith*, and others to rank high school athletic teams (Fisher, 2003; Wolff, 1990). For example, Fox Sports Net (FSN) broadcasted nearly 500 hours of high school sport throughout the 1999 school year, primarily covering state and regional championships in forty states (Berry, 1999). This significant amount of airtime provided the above groups the ability to rank high school teams of various sports because increased viewing access makes it easier for them to adequately judge the playing ability of each team and compare them to other institutions. Interestingly, as a by product, this access also prompted these groups to suggest a national playoff or bowl game for its number one and two ranked high school football programs (King, 2005a). For example, recent efforts by the Television Football Network (TFN) and FSN demonstrated they made an effort to promote and produce a national high school championship game (Berry, 1999; King, 2005a; Wallace, 2003). Many criticized this effort by FSN and TFN to promote a national high school championship game for reasons similar to those discussed earlier (Berry, 1999; Wallace, 2003). Still, Berry pointed out a television prompted national high school football championship should also be criticized because it conflicts with school final exams before winter break and the start of the winter sport (e.g. basketball, wrestling, and hockey) season.

Berry (1999) additionally suggested not every state competes over the same sport calendar. Thus, as southern high schools in the United States start their seasons much earlier than northern schools, those schools from the south would likely compete under a five or six month sport season when making a national title game. Besides the length of the season, the State of Michigan also showed it would be problematic to include all states into a tournament or championship because they complete their girl's basketball season during the fall, while all other states mainly compete during the winter. Other sports like tennis, golf, and volleyball also follow different sport schedules between states to prevent a "true" national champion from being declared.

High school athletic departments also demonstrated television broadcasts impose a lot of difficulties or stressors, which they appear ill-equipped to handle. For instance, St. Vincent-St. Mary's (Akron, OH) hosted the above mentioned, NBA All-Star Guard Lebron James of the Cleveland Cavaliers, on their team from 2000 to 2003. As a desirable commodity for the entertainment and sport industry, television enticed St. Vincent-St. Mary's into moving its games from its own 1,700 seat gym to the University of Akron's arena (6,000 seats). Furthermore, television prompted them to broadcast their games on local pay-per-view and complete a near 9,000-mile tour of the United States during the 2002-2003 season (Hyde, 2003; Morgan, 2002; Smith, 2002; Steinberg, 2003; Zitrin, 2003). Overall, the small Catholic school participated in tournaments all across the United States in places like Pittsburgh (PA), Philadelphia (PA), Los Angeles (CA), Trenton (NJ), Greensboro (NC), Dayton (OH), and Columbus (OH).

The school itself first drew criticism for its pay-per-view broadcasts from Hyde (2003), who suggested the school primarily focused on revenues. Specifically, in a deal with Time-Warner Cable, nearly 400,000 subscribers of Northeast Ohio enjoyed the opportunity to pay the cable provider and the school over $7.00 a game (Morgan, 2002; Smith 2002; Zitrin, 2003). Many condemned the long road trips and the perceived impact they likely inflicted on their student-athletes, but the school itself suggested the largest problems were associated with a lack of staff and time to meet all the demands of a heavily commercialized program (Steinberg, 2003). St. Vincent-St. Mary's Athletic Director Grant Innocenzi suggested he worked eighty hours a week during the 2002-2003 season and fielded roughly 100 emails and 300 phone calls per day (Steinberg, 2003). Additional stressors arrived from attempting to coordinate press conferences, plotting escape routes for the team during home and road games, and handling the various requests of the school's 2,500 season ticket holders (Steinberg, 2003). Clearly, television impacted, if not created, all these problems for the St. Vincent-St. Mary's athletics.

In addition to the problems mentioned above, St. Vincent-St. Mary's also found television spoiled their relationships with other high school institutions. For example, Steinberg (2003) reported traditional rivals like Archbishop Hoban and Walsh Jesuit suggested they will not play St. Vincent-St. Mary's in the future because of differing philosophical positions. Each school appeared displeased about rescheduling or canceling contests to fit St. Vincent-St. Mary's national television appearances and various road trips. Additionally, rival Akron power Central-Hower cancelled future meetings with the school after a dispute over the distribution of ticket sales during their regular season game (Steinberg, 2003). Central-Hower felt they were owed their traditional share of the highly popular contests and St. Vincent-St. Mary's should not receive more because of their recent popularity.

Similar to St. Vincent-St. Mary's, De La Salle High School (Concord, CA) also emerged as a highly prized television attraction. However, in this case it was their remarkably successful football team, not one individual, surfacing as the marketable star. From 1991 to 2004, De La Salle High School's football team won an amazing 151 straight games and multiple mythical national championships. Not surprisingly, this success attracted numerous offers to play throughout their own state and the rest of the country, often on television. For example, ARCO promoted a game between De La Salle and Long Beach Poly as an unofficial national championship game in 2001 and incredibly, the game scored a 2.0 Nielsen rating (Wallace, 2003). In the United States, one Nielsen rating point equals 1% or 1,152,000 households for the 2006-07 season.

More recently, De La Salle traveled to Shreveport, LA and Seattle, WA to play Louisiana superpower Evangel Christian Academy and Washington contender Bellevue for a national television audience (Peterson, 2004; Powell, 2003). Again, making appearances against

these opponents attracted some negative publicity as Head Coach Bob Ladouceur and Athletic Director/Defensive Coordinator Terry Edison suggested some people thought of them as a "traveling circus" and challenged them as scared when not agreeing to play another (Glier, 2003 p.14c).

Travel expenses also frequently materialize as a major drawback to national contests like those mentioned above because they could make the effort of attending the road contest not worth the endeavor. For example, Spanberg (2006) revealed a two-day high school football event planned in Ohio for 2006 could impose $45,000 to $50,000 in travel expenses on out-of-state teams. Added to the likely $40,000 production cost per game, this imposes a great stressor on schools to assure event sponsors their image and public name can generate enough interest to help attract viewers and sponsors so the event can pay for itself (Spanberg, 2006).

Positive Consequences

Despite the many negative implications offered above regarding television and high school athletics, numerous proponents described how televising high school athletics helped their athletic program, community, school, and student-athletes. In a response to the Reilly (1989) column mentioned above, Dwight Thomas, Athletic Director and Head Football Coach of Escambia High School (Pensacola, FL) proposed his rationale for accepting the televising of his schools various athletic events (Thomas & Thomas, 1989). First, Thomas suggested gate receipts doubled those of the 1987 football season when the school decided to televise certain contests of the 1989 campaign (Thomas & Thomas, 1989). Consequently, the larger gate resulted in higher amounts of "revenue from parking, food concessions, and sales of programs, caps, and pennants," (Thomas & Thomas, 1989 p.8). Thomas suggested this extra money helped the entire football program generate a profit for first time in many years and offered numerous benefits to the other athletic programs offered by the school. For example, new equipment and uniforms would expectedly appear as a benefit.

Thomas and Thomas (1989) proposed the larger gate surfaced because television prompted the community to care more about the contests. Specifically, these authors offered the community responded to become more cohesive as a national or statewide-televised event did not surface in their community on a regular basis. Essentially, the community saw the televised high school athletic event as a special episode in their history and they wanted their school and community to be seen in the best light possible while on television. To demonstrate this commitment by the community, Thomas and Thomas (1989) acknowledged television served as the primary source of motivation for the many financial and volunteer contributions needed to complete the renovations of the Escambia High School stadium and beautification of the greater school grounds. Wolff (1990) also promoted communities work harder for their school when their sports are televised.

For the student-athlete, Thomas and Thomas (1989) promoted television as beneficial to their health during the hot and humid Florida weather. Timeouts were distinctively identified as a benefit to the high school athlete because they helped the competitors replenish their bodies with much needed fluids and rest to avoid heat related injuries such as cramping, exhaustion, and heat stroke. Under normal conditions (i.e. without television coverage), state rules for football provide fewer and shorter timeouts during contests. However, when events are televised those timeouts are longer and more frequent to accommodate commercial interests of the sponsors. This obviously helps the student-athlete recover better under what could be difficult conditions and possibly produce a better or more well-played event.

Student-athletes of other sports offered at the school also appear to benefit from the commercial exposure of their sports during the football contests. The promotion of their activities in live and remote attendance created not only public and school awareness, but encouraged more participation interest (i.e. tryouts and game attendance) for the winter and spring sport seasons by students (Thomas & Thomas, 1989). Thomas felt this was important to building and sustaining a solid athletic program in their school, promoting a healthy lifestyle, and strengthening the overall social community of the school.

Television broadcasts also helped promote the abilities of student-athletes to institutions of higher education. Coach Thomas felt the television exposure helped motivate his players to perform better and work harder and thus attract colleges or universities to the school to recruit them and others (Thomas & Thomas, 1989). Consistently, the literature demonstrates others support the comments made by Thomas and Thomas. For example, Wolff (1990) also suggested televising high school sporting events helps motivate the players to work harder. Additionally, Dale Mueller, Athletic Director and Head Football Coach at Highlands High School (Fort Thomas, KY) specifically identifies television and the general recognition associated with being on it as a heavy contributor to some students obtaining a chance at a higher education (Berry, 1999). Primarily, these individuals feel television exposure provides the student-athletes with an opportunity to be seen during the National Collegiate Athletic Association's (NCAA) Dead Evaluation Periods, gain access/entry into important camps or summer leagues, and earn recognition from recruiting publications or scouting services.

In addition to the exposure student-athletes received, many schools found television provided them with a valuable scheduling tool because of the publicity it generated. De La Salle and Evangel Christian Academy represent two institutions utilizing their television exposure to help them schedule future contests. Evangel Christian Academy's recent success (multiple Louisiana State Football Championships and a mythical national championship in 1999) helped them get on television, but also appeared to intimidate other Louisiana schools from playing them (Powell, 2003). Consequently, Head Football Coach Dennis Dunn sought out a national schedule and television appearances to encourage teams to schedule contests against his traditionally successful program (Powell, 2003). Similarly, De La Salle suggests television exposure and their team's success helped them attract enough competition to plan out their schedule for the years ahead which was often a challenge within the state against other institutions (Glier, 2003).

Still, athletic departments and schools give the impression television's greatest resources are its financial contributions because its money appears plentiful (Berry, 1999; Fisher, 2003; Hyde, 2003; Steinberg, 2003). Again, one only needs to examine St. Vincent-St. Mary's tour and pay-per-view deal to see this. During

the 2002-03 basketball season, according to Athletic Director Grant Innocenzi, St. Vincent-St. Mary's collected about $400,000 of income (Steinberg, 2003). This money materialized primarily from tournament road trips, which garnered the school anywhere from $10,000 to $15,000 per appearance (Hyde, 2003; Smith, 2002). Additionally, the small pay-per-view investment of $5,000 per game needed only 630 buys to break even. Thus, with roughly 400,000 available subscribers, a more than adequate buying base surfaced to help the school and cable station make a profit (Zitrin, 2003). Interestingly, many other writers mention appearances at televised tournaments should seem attractive to high schools (Berry, 1999; Fisher, 2003; Smith, 2002). For instance, the football national championship proposed by Fox Sports Net flirted with a $50,000 appearance fee for participating schools and all expenses paid for the student-athletes and their parents to award schools and their athletic departments (Berry, 1999).

Some propose television could also assist a high school athletic department with the acquisition of additional rewards from local, regional, and possibly national sponsors in the form of money or direct help through providing equipment, paying for uniforms and practice clothing, and supplying materials to maintain the athletic facilities (Harlan, 2005; King, 2005a, 2005b; Wolff, 1990). For example, Thomaselli (2004) reported that a mere mention (30-second spot) on the cable sports channel ESPN, helped Watersmeet High School (enrollment 78), located on Michigan's Upper Peninsula, earn roughly $40,000 from merchandise sales because of the school's unusual nickname, the Nimrods. The Montour High School Spartans (Montour, PA) hired NFL Hall of Fame recipient Dick Butkus as a coach for their 2005 season. As part of ESPN's "Bound for Glory," television production, the Spartans received "new uniforms and equipment courtesy of Reebok, $65,000 worth of goods and services supplied by school sponsor Dick's Sporting Goods, and a new, $40,000 scoreboard," (King, 2005a, pg. 15). Clearly, this unexpected revenue boost served both schools quite well.

The previously mentioned rankings influenced by television also reported nice incomes for those schools able to remain on the lists at the end of the year. For example, Berry (1999) reported those schools gaining a Top 50 ranking on Fox Sports Net's football watch earned $5,000 of in-kind gifts like equipment, shoes, and fan apparel. Obviously, some individuals would support gaining recognition for this accomplishment because of the attractive amount of money given out. Still, one can see the potential political battles teams or schools would likely engage in over this money could prevent some from seeking future television opportunities.

Logic further suggests coaches of high school teams appearing on television and in the various national rankings systems likely benefit financially. For instance, it is not unrealistic to think high school coaches such as Evangel Christian Academy's Dennis Dunn or Mater Dei High School (Santa Ana, CA) Gary McKnight could capitalize on their successes for their own profit. Specifically, this paper argues these individuals are more likely to attract paid speaking opportunities, earn their own private endorsement opportunities, and find an audience to buy books, workout materials, and other items designed by their accepted expertise. Additionally, this work believes television would help promote future camps and clinics offered by the head coach or institution, which could benefit them and the school. For example, athletic departments can utilize camps and clinics to supplement assistant and/or head coaches' incomes to keep departmental costs down, while still retaining a high quality staff.

Finally, there appears to be significant educational value associated with the production of a television event for the general student population. Many schools today, implementing technology courses, include television production into their curriculum and specifically embrace or highlight sport broadcasting as a major topic. Performing a Google search on "television production and high school courses" demonstrates this point effectively as television production classes overwhelming cover issues related to sporting events like: (a) camera operation; (b) single and multiple camera shooting values; (c) graphics; (d) special effects; (e) shot selection and replay; (f) audio microphones; (g) lighting and set design; (h) maintenance of equipment; (i) ratings and advertising; and (j) occupational opportunities. Many of the syllabi found also specifically list sport as a unit of study or project area to produce. Overall, the sporting event emerges as an excellent opportunity for students to practice and learn skills, which could be necessary for securing higher education opportunities, performing well academically, or achieving a desired career path.

Method

The researchers developed each of the items for the 51 state high school athletic associations to answer. Specifically, respondents were asked whether their states had agreements for the broadcasting of their high school championships (and if so, in which sports). In addition, they were asked to rate the extent of coverage they received for regular season contests on a 7-point Likert-scale (from no statewide coverage to extensive statewide coverage).

These research questions were a small addition to a much larger study dealing with current issues in high school athletics. Research questions applicable to this paper were attached to a follow-up study initially conducted by Turner, Mahony, and Pastore (2005) on interscholastic rules violations in 1999 within the *International Journal of Sport Management*. The primary purpose of that inquiry was to determine if any significant changes in the types of rules violations committed occur and whether or not those sports engaging in illegal activities changed over the five-year period. A secondary focus of this investigation also sought to advance a general understanding about high school athletic participation in the United States, with respect to rule violations.

Overall, questionnaires were sent to all 51 executive directors of state high school athletic associations, along with a cover letter explaining the purpose of this research. A follow-up postcard was sent to executive directors who did not return the questionnaire within two weeks. After one month, 20 questionnaires (39.2%) were returned. The researchers then made phone calls to those who had not returned the questionnaire. A total of 26 questionnaires (51.0%) were collected. Respondents ranged in age from 44 to 67 (M = 56.58; SD = 5.99), with only 2 of the respondents being female (7.7%). The respondents were primarily Caucasian (92.3%) but one Asian-American and Hispanic-American also completed the survey. The level of education varied but most respondents identified their highest level of education achieved as graduate

(Bachelors-8%, Masters-48%, Doctoral-44%). Respondents were also asked to identify what athletic and educational positions they held in the past. Athletically, the study's respondents indicated they previously served as assistant coaches (88.5%), head coaches (84.6%), and athletic directors (73.1%). Furthermore, within an educational context, the study's respondents indicated they held positions as teachers (96.2%), assistant principals (34.6%), principals (46.2%), district level administrators (11.5%), assistant superintendents (3.8%), and superintendents (11.5%).

To help control for non-response error, methods proposed by Miller and Smith (1983) were used. According to Miller and Smith, late respondents are often similar to non-respondents; in other words, late respondents are assumed to be typical of non-respondents. For this study, late respondents (n = 6) were defined as those who returned their questionnaire after follow-up phone calls were made. On all variables of interest for this study, chi-square tests (for categorical data) and independent sample t-tests (for continuous data) were used to determine whether there was a statistical difference between the means of early and late respondents. Results showed no significant difference between early and late respondents on all variables of interest. Thus, it was concluded that the non-respondents were not different from the respondents.

Table 1. ***Number of states broadcasting championship games (by sport)***

SPORT	n	%
Baseball	2	7.7%
Basketball (Boys)	19	73.1%
Basketball (Girls)	18	69.2%
Cheerleading	3	11.5%
Cross Country (Boys)	0	0%
Cross Country (Girls)	0	0%
Field Hockey	0	0%
Football	17	65.4%
Golf (Boys)	0	0%
Golf (Girls)	0	0%
Ice Hockey (Boys)	4	15.4%
Ice Hockey (Girls)	0	0%
Indoor Track & Field (Boys)	1	3.8%
Indoor Track & Field (Girls)	1	3.8%
Lacrosse (Boys)	0	0%
Lacrosse (Girls)	0	0%
Outdoor Track & Field (Boys)	0	0%
Outdoor Track & Field (Girls)	0	0%
Soccer (Boys)	0	0%
Soccer (Girls)	0	0%
Softball	2	7.7%
Swimming & Diving (Boys)	1	3.8%
Swimming & Diving (Girls)	1	3.8%
Tennis (Boys)	0	0%
Tennis (Girls)	1	3.8%
Volleyball (Boys)	0	0%
Volleyball (Girls)	6	23.1%
Wrestling (Individual)	3	11.5%
Wrestling (Team)	1	3.8%

Results

Statewide Coverage of High School Championships

Of the 26 respondents to the questionnaire, 14 (53.8%) stated they had an agreement to broadcast their states' championship games/events. The sports with the most states broadcasting their championships were boys' basketball (n = 19; 73.1%), girls' basketball (n = 18; 69.2%), and football (n = 17; 65.4%). Fifteen different sports received coverage in at least one state (see Table 1).

Extent of Regular Season Television Coverage

Each of the state executive directors were asked how extensive television coverage of state association sponsored regular seasons games (e.g., High School Game of the Week) was in their respective state on a 7-point Likert-scale. The average rating was only 1.73 (out of 7) with 15 of 22 respondents giving their state a "1" (no statewide coverage). In addition, only one executive director gave their state a "7" (extensive statewide coverage).

Discussion/Concluding Remarks

Despite the limited exploratory nature of this investigation, the results of the survey indicate that while the televising of high school sports may be growing, its potential has not yet been maximized. For example, many state associations indicated they currently only control championship coverage and do not seek to control access over regular season or other playoff contests. Interestingly, some states also acknowledged they did not broadcast the championship games of the most popular American sports (e.g. football and basketball). It was even more limited in the other sports along with regular season games too. Data from this study also shows over 25% of surveyed state associations fail to sell any television championship rights to popular revenue producing sports like football and boys' or girls' basketball (See Table 1).

Taken together, the results suggest state associations and high school athletic programs are likely leaving a lot of possible financial, political, social, and educational benefits listed "on the table" by not fully utilizing the television opportunities. Thus, if one peers into the future, as Burke Magnus, vice president and general manager of ESPNU has, he or she might see high school athletics and television hold a promising opportunity to expand their relationship for the profit of each (King, 2005a). Rashid Ghazi, vice president of marketing and sales for the Paragon Marketing Group (Skokie, IL), a co-producer of several high school contests aired on ESPN, also espouses this belief as he feels the high school market possesses incredible potential for growth with the television industry (King, 2005a; Spanberg, 2006).

Financially, this concept is important to recognize because high school athletic departments all across the country are experiencing budget cuts. Therefore, they must search for alternative sources of revenue to assure the survival of their athletic programs (King, 2005b). Concurrently, local or national businesses also search for opportunities to advertise their products and services to potential and current customers. The significant audience numbers (up to 2.0 Nielsen ratings) achieved for recent high school football and boys' basketball broadcasts demonstrate television transmissions exist as a potential revenue stream for high school athletic departments and sponsors (Martzke, 2002; Reed, 2003; Smith,

2005a; Spanberg, 2006; Wallace, 2003). The evidence shown here indicates many institutions and state athletic associations across the United States support the use of television to broadcast high school athletic events and that television broadcasting of these contests are not rare episodes and can be supported even by the school's own students. Thus, television and high school sport can be a suitable match.

For example, towns and high schools in Central Massachusetts annually broadcast football games during the Thanksgiving weekend through Charter Communications. Utilizing four to five camera locations and providing instant replay, these simple broadcasts regularly earn positive feedback from the community (Doyle, 2003). Additionally, Cox Communications demonstrated its interactive broadcasting of high school sports in Mesa, Arizona appears popular enough for local businesses to promote their products and services to the surrounding community (Taylor, 2003). Politically, in these instances, television provided an excellent opportunity for a positive connection of both the school and sponsor to the viewer at home because of their preference for high school sport or a certain product or service. Still, state high school associations, governing bodies, and individual school districts looking to secure television contracts should examine the market to make certain it is not too saturated. Furthermore, they should scrutinize possible sponsors before jumping into production to make sure they exist as an appropriate match for their institution. This is especially important in communities or cities with multiple private or public high school athletic programs.

Ghazi suggests the college model currently serves as an exemplary standard for high school athletics to follow for this purpose because they traditionally host marketing and sponsorship personnel within their athletic departments and educational setting who help make such decisions about market saturation and sponsorship match (Spanberg, 2006). In the future, high school athletic departments might want to take advantage of the college model to recruit sponsors and develop marketing plans for their events. Unfortunately, Ghazi indicates most high school athletic departments do not realize this possibility because their athletic directors and district administrators appear uninformed or unaware to the many marketing, sponsorship, and educational opportunities television provides. Therefore, as colleges and high schools each similarly operate to protect students and service their community, high schools should look into expanding the size of their athletic department through embracing the technology faculty need, hiring marketing and sponsorship personnel, or developing marketing and sponsorship proposals themselves with student help to take advantage of television's opportunity properly.

Clearly, this research supports the notion that high school principals, athletic directors, and community members need to recognize and implement safe procedures to protect their student-athletes and schools from the negative consequences of television listed above. Undoubtedly, multiple athletic associations possess the ability to sell exclusive broadcasting rights to championship and playoff contests for a variety of sports. Additionally, individual high schools can benefit greatly from the educational opportunities and the marketing of their athletic events through television. Yet, as this study shows, not all associations or schools attempted to reach for the rewards television broadcasts can provide and many might hesitate to embrace television because of the various negative consequences offered above. Consequently, this work advises schools to work together through conference or state associations in order to increase efficiency and develop an approach that would increase cohesion and avoid many problems that emerge when schools work alone.

Finally, this piece calls for more research on television coverage of high school events because this work was exploratory research and limited by the size of the initial instrument. Future inquiries could address many of the topics listed above. For example, we could more closely examine television broadcasting and webcasting by schools and how sports impact and/or aid student learning. Also future research could more formally examine television's impact on game attendance, participation rates, and athletic program finances. Next, we could analyze how illegal recruiting, injury rates, and event scheduling relate to television. Television's influence on coaching salaries or supplemental income could also be measured along with its effect on identifying recruits by college coaches and camp invites received by high school students. Lastly, this work offers we could determine more distinctly how television affects the nature of high school sporting events or how they are conducted.

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Middle School Children's Attitudes toward Physical Activity

by Wenhao Liu, Jianyu Wang, and Furong Xu

Abstract

This study was designed to examine middle school children's attitudes toward physical activity. A sample of 199 middle school children from a middle school in the United States participated in the study. The Children's Attitudes Toward Physical Activity inventory and a survey of organized sports participation was administered to the participants. Inferential and descriptive statistics were used to examine and describe differences in attitudes toward physical activity among groups. The children were found to value health, enjoyment, and social interaction benefits of physical activity most. But they did not enjoy physical activities involving risk-taking movement and hard practice very much. When compared between genders, boys were found to enjoy risk-taking movements more than girls, whereas girls liked physical activities with beautiful movements more than boys. Further, it was found that organized sports participants demonstrated significantly more positive attitudes toward health, enjoyment, and social interaction aspects of physical activity than those who did not participate in any organized sports. It is concluded that participating in organized sports is positively associated with children's attitudes toward physical activity.

The health benefits of regular physical activity participation and consequences of sedentary lifestyle are officially documented (U.S. Department of Health and Human Services [USDHHS], 1996, 2000). These health benefits and consequences for children are meaningful not only because of current blood pressure control, weight management, and cardiorespiratory function, but because a physically active or inactive lifestyle adopted early in life may continue into adulthood (USDHHS, 2000). Recent research in the tracking of physical activity has provided increasingly more evidence that levels of physical activity in childhood track, to some degree, into adulthood (Malina, 2001a, 2001b; Telama et al., 2005; Yang et al., 2007). Specifically, research reveals that physical inactivity and obesity remain more stable than physical activity from childhood to adulthood (Anderssen, Wold, & Torsheim, 2005; Janz, Burns, & Levy, 2005; Matton et al., 2005; Raitakari, Juonala, & Viikari, 2005; Yang et al., 2007). That is, compared with physically active lifestyles during childhood, sedentary lifestyles adopted early in life tend to track into adulthood at a higher rate. The finding helps explain the well known facts that physical activity levels decline from childhood to adulthood and that more than half (54.1%) of adults do not engage in physical activity at the minimum recommended level (Center for Disease Control and Prevention [CDC], 2005).

As a result, the goal of public health is to get physically active children remain physically active through adulthood and, more importantly, to get sedentary children "untracked" and become physically active (Corbin, 2001; Malina, 2001b). In fact, the promotion of lifelong physical activity participation has been recognized as the ultimate goal of school physical education programs (Rink, 2006), and physical activity ranks top in the ten Leading Health Indicators (USDHHS, 2000). Despite all this, participation in all types of physical activity among children continues to decline strikingly as age or grade in school increases (Corbin, Pangrazi, & Le-Masurier, 2004), and more children are among the sedentary and/or obese category (CDC, 2007; Ogden et al., 2006).

Identifying and understanding correlates of children's physical activity participation are critical to promoting current and lifelong physical activity participation of children (Sallis, Prochaska, & Taylor, 2000). Among other factors, children's attitudes are considered to be a key element influencing physical activity participation (Biddle & Mutrie, 2001; Hagger, Chatzisarantis, & Biddle, 2002; Solmon, 2003; Subramaniam & Silverman, 2007). Children who have more positive attitudes toward physical activity are reported to be more likely to participate in physical activity outside of school (Biddle & Chatzisarantis, 1999; Chung & Phillips, 2002; Hagger et al., 2002; Liu, 2002; Liu & Chepyator-Thomson, 2008; McKenzie, 2003, Portman, 2003) and demonstrate higher physical activity amounts (Hagger, Cale, & Almond, 1995; Liu, 2002; Liu & Chepyator-Thomson, 2008) than those with less positive attitudes. Thus, fostering children's positive attitudes toward physical activity would be conducive to the promotion of current and lifelong physical activity participation of children (McKenzie, 2003; Subramaniam & Silverman, 2007).

According to a recent review by Solmon (2003), child characteristics and contextual factors are two major factors that are related to children's attitudes. Child characteristics refer to children's age, gender, sports skill, etc. Contextual factors include quality of physical education programs, accessibility of after school physical activities, etc. With regard to the child characteristics, elementary children are found to have more positive attitudes than secondary children (Lee, 2004; Martin, 2000; Solmon & Carter, 1995; Xiang, McBride, & Guan, 2004), and children's attitudes become less positive as they progress through their schooling (Biddle & Mutrie, 2001; Lee, 2004; Prochaska, Sallis, Slymen, & McKenzie, 2003; Silverman & Subramaniam, 1999; Subramaniam & Silverman, 2007; Xiang, McBride, & Guan, 2004). It is also found that elementary children express very favorable attitudes toward health, fitness, enjoyment, and social interaction benefits of physical activity, but do not enjoy physical activities involving hard practice and risk-taking movement (Patterson & Faucette, 1990). Younger children's higher interests, values, and more positive attitudes toward physical activity, however, may not be realistic due to their low ability of self-evaluation (Lee, 2004).

Gender differences in attitude toward physical activity are also reported in research, although results are not quite consistent. Greenwood and Stillwell (2001) report that male children demonstrate strong interest in archery, bowling, flag football, and

wrestling, whereas female children prefer gymnastics, softball, and volleyball. Further, boys are reported to have more positive attitudes than girls toward physical activities bringing them risk-taking experience and reducing stress, whereas girls are more positive than boys in physical activities with beautiful and graceful movements (Colley, Comber, & Hargreaves, 1994; Ewy, 1993; Folsom-Meek, 1992; Hughes, 1994; Hicks, Wiggins, Crist, & Moode, 2001; Hunt, 1995; Parkhurst, 2000; Patterson & Faucette, 1990). In addition, boys, in general, are more positive than girls in attitudes towards physical activity (Biddle & Mutrie, 2001; Chung & Phillips, 2002). However, Subramanian and Silverman (2007) fail to find the gender difference in attitudes in their recent study although both genders are found to demonstrate moderately positive attitudes.

Children's attitudes also vary as a function of sports skill levels. Highly athletically skilled children tend to demonstrate more positive attitudes toward participation in physical activity, whereas children with low skill levels would have less positive attitudes (Portman, 1995). Similar findings are reported that sports levels are positively related to interests in participation in physical activity (Liu, 2002; Liu & Chepyator-Thomson, 2008).

With regard to contextual factors, quality physical education programs have been reported to be a strong factor influencing children's attitudes toward physical activity. Children's positive attitudes are likely to be linked with enjoyment, perceived usefulness of the curriculum, and a sense of belongingness (Subramaniam & Silverman, 2002, 2007). Curriculum with situational interest, such as those require students to analyze and design offensive and defensive strategies, may foster students' interests in physical activity (Chen & Darst, 2001). A learning environment that promotes personal meaning is considered to be important to the development of positive attitude (Rink, 2006). Children are also likely to become more positive toward physical activity if they are in a learning environment that makes them comfortable and confident (Hagger et al., 2002). Other studies (Birtwistle & Brodie, 1991; Brodie & Birtwistle, 1990) indicate that, compared with skill-related fitness physical education programs, health-related physical education programs would bring positive changes in children's attitudes toward physical activity. In general, quality physical education programs, including health-related physical education programs, provide an important role in positively impacting children's attitudes and intentions to participate in physical activity (Mckenzie, 2001; Prochaska et al., 2003).

Many physical activity intervention programs successfully implemented in school settings have provided considerably enhanced contexts fostering children's attitudes toward physical activity, resulting in significant physical activity promotion. For example, Sports, Play and Active Recreation for Kids (SPARK), Middle School Physical Activity and Nutrition (M-SPAN), and Child and Adolescent Trail for Cardiovascular Health (CATCH) are well known school-based physical activity promotion intervention programs that have nurtured children's attitudes toward physical activity (Nader et al., 1999; Rosengard, 1995). As expected, intervention children's physical activity amount increased from 39% to 70% compared with control groups in the SPARK (Rosengard, 1995), moderate to vigorous physical activity increased by 18% during a two-year intervention in the M-SPAN (McKenzie et al., 2004), and vigorous physical activity were 26% higher than that of control groups after a three-year intervention in the CATCH (Luepker et al., 1996). What is more, a tracking study of the original CATCH cohort after three-year termination of intervention still indicates 36% more vigorous physical activity minutes than those of the original control groups (Nader et al., 1999).

Organized youth programs, including organized youth physical activities, are powerful and favorable contexts in which children actively engage in psychosocial growth (Larson, Hansen, & Moneta, 2006; Roth & Brooks-Gunn, 2003). It is widely reported that participation in organized youth sports contribute to children's development of goal setting, persistence, problem solving, teamwork, managing emotions, and managing time (Danish, Taylor, & Fazio, 2003; Duda & Ntounumis, 2005). A recent study (Larson et al., 2006) repeats the finding that children demonstrate significant development of initiative, emotional regulation, and teamwork in participation in organized youth sports. However, there is a lack of research examining association of organized youth sports participation and attitudes toward physical activity, although it is reported that children who have more positive attitudes toward physical activity are more likely to participate in physical activity outside of school (Chung & Phillips, 2002; Hagger et al., 2002; McKenzie, 2003; Portman, 2003).

As for children's negative attitudes associated with contextual factors, Carlson (1995) indicate that students will become bored if there is a lack of challenge or repeat the same activities without taking children's interests into account. Siedentop (2004) also argues that a multi-activity curriculum with a series of short-term unit will negatively influence students' attitudes. Biddle and Chatzisarantis (1999) find that it is more difficult for students to maintain interest in traditional team sports than in individual pursuits. Additionally, marginal status of physical education in the school curriculum has a negative impact on students' attitudes (Tannehill, Romar, O'sullivan, England, & Rosenberg, 1994).

Compared with research dealing with children's physical activity levels, research addressing children's attitudes toward physical activity is relatively scant, and most research targets elementary school children. As discussed previously, children at elementary schools tend to report inflated physical activity ability, interest, and attitude due to their limited developmental ability of self-evaluation, and secondary school children's self-report are more realistic (Lee, 2004). Thus, it would make more sense and be more meaningful to examine secondary school children's attitudes toward physical activity.

Moreover, how organized sports participation is associated with children's attitudes toward physical activity remains uninvestigated. Given the critical role that the positive attitudes may play in children's physical activity participation and, more importantly, tracking of physical activity and "untracking" of sedentary lifestyle, more research is needed to investigate factors that may foster children's positive attitudes toward physical activity.

The purpose of this study was to examine middle school children's attitudes toward physical activity, and compare their attitudes between genders and between organized sports participants and those who did not participate in organized sports (non-organized

sports participants). In other words, this study would investigate (a) how middle school children's attitudes toward physical activity were, (b) whether there were any differences in attitudes between boys and girls, and (d) whether there were any differences in attitudes between organized and non-organized sports participants. It was hypothesized that there would be differences in attitudes between genders, and that the organized sports participants would demonstrate more positive attitudes toward physical activity than non-organized sports participants.

Methods

Participants

One hundred and ninety-nine children from a middle school in the United States participated in the study. Off these 199 participants, there were 91 boys and 108 girls; 65 sixth graders (34 boys and 31 girls), 52 seventh graders (17 boys and 35 girls), and 82 eighth graders (40 boys and 42 girls). With regard to race/ethnical distribution, Caucasian (n = 177) constituted the majority of participants, and were followed by African Americans (n = 12), Hispanic Americans (n = 5), and others (n = 5). Average age for the entire sample, boys, and girls was 12.68 yr (SD = .98), 12.74 yr (SD = .94), and 12.62 yr (SD = 1.01), respectively.

Instruments and Scoring

The Children's Attitudes Toward Physical Activity (CATPA) inventory (Schutz, Smoll, Carre, & Mosher, 1985) was used to measure participants' attitudes toward physical activity. The CATPA inventory contains multiple subdomains that reflect comprehensive components or functions of physical activity, and has undergone extensive revisions for improving its psychometric properties (Schutz & Smoll, 1977; Smoll & Schutz, 1980). Internal consistency of the CATPA indicated by Hoyt reliabilities ranges from .80 to .90, and test-retest reliability coefficient is .71 for a 2-week interval, .60 for a 6-week interval, and .67 for a 9-week interval (Schutz et al., 1985). The CATPA has been the most frequently used instrument measuring children's attitudes toward physical activity (Subramaniam & Silverman, 2007) and used in majority of the studies discussed above.

The CATPA inventory contains following eight subdomains of physical activity for participants to express their attitudes: (a) Social Growth – taking part in physical activities that give you a chance to meet new people, (b) Social Continuation – taking part in physical activities that give you a chance to be with your friend, (c) Health/Fitness: Value and (d) Health/Fitness: Enjoyment – taking part in physical activities to improve your health and get your body in better condition, (e) Vertigo – taking part in exciting physical activities that could be dangerous because you move very fast and must change direction quickly, (f) Aesthetic – taking part in physical activities that have beautiful and graceful movement, (g) Catharsis – taking part in physical activities that reduce stress or to get away form problems you might have, and (h) Ascetic – taking part in physical activities that have long and hard practices requiring you to give up other things.

A five-point semantic differential scale with pairs of bipolar adjectives constitutes the same five items for each of the eight subdomains:

good ___ : ___ : ___ : ___ : ___ bad
of no use ___ : ___ : ___ : ___ : ___ useful
not pleasant ___ : ___ : ___ : ___ : ___ pleasant
nice ___ : ___ : ___ : ___ : ___ awful
happy ___ : ___ : ___ : ___ : ___ sad

Participants respond to each of the five items by checking appropriate spaces to indicate their attitudes toward each subdomain of the CATPA. One point is assigned to the least positive response and five points to the most positive response for each item. Thus, scoring ranges from one to five points for each item and from 5 to 25 for each subdomain. Scoring for each subdomain is calculated separately. Relatively high scores represent more positive attitudes and low scores indicate less positive attitudes. The CATPA inventory also includes an "I do not understand this idea" response to each subdomain to reduce ambiguity of interpreting a midpoint response, i.e., a value of 3 on the 5-point scale (Schutz et al., 1985).

Additionally, a researcher-generated survey of organized sports participation was used for the participants to report and specify their current participation in any organized sport(s). The use of this survey was for distinguishing organized sports participants from those who did not participate in organized sports.

Data Collection

With assistance of the physical education teachers in the school in which the study was conducted, the CATPA was administered in originally scheduled physical education classes at the middle of a spring semester. At the beginning of each physical education class the participants gathered in a pre-arranged room for the administration of the CATPA. According to the CATPA administration instructions (Schutz et al., 1985), a subdomain of the CATPA and a five-point semantic differential scale with five pairs of bipolar adjectives described above were written on the chalkboard and used as example to guide participants to go through the CATPA. The participants were made aware that they could check the box next to "I do not understand this idea" if they experienced difficulties in understanding any subdomain.

The survey of organized sport participation was completed by participants immediately after the CATPA administration. Participants were asked to report if they were currently involved in organized sports participation (sport event, play/training schedule, and place to meet). It was made clear that any sports with pre-arranged schedules and adult organizers/trainers were organized sports no matter they were school-based or community-based. Approximately one month later, all participants completed the survey of organized sport participation again. The agreement of the two self-reported organized sports surveys was the criterion to determine organized sports participants.

Designs and Data Treatment

A quasi-experimental design was utilized in this study. The participants were grouped by gender and by sports participation category (organized sports participation vs. non-organized sports participation). Gender and sports participation category were independent variables and scores on each of the eight subdomains of the CATPA inventory were dependent variables. Descriptive statistics were calculated for each of the eight subdomains, and

the mean values of scores on the subdomains were ranked for each group. A two-way (gender × sports participation category) multivariate analysis of variance (MANOVA) was conducted to determine the effects of gender and sports participation category on the attitude variables and the gender by sports participation category interaction. A fellow-up univariate *F* test to the significant MANOVA (main effect of sports participation category) was conducted to identify the attitude variables that were significantly different between the two sports participation categories.

The Bonferroni method was used for controlling familywise Type I error across multiple hypothesis tests. Specifically, an alpha of .017 (.05 ÷ 3 = .017) was used for each of the three hypothesis tests (for gender, sports participation category, and the interaction of the two factors) involved in the two-way MANOVA, and an alpha of .002 (.017 ÷ 8 = .002 due to the eight attitude variables) was used for the follow-up tests. In addition, Partial η^2 was reported as effect size for the MANOVA and follow-up tests. While it is unclear regarding cutoffs of partial η^2 associated with the magnitude of effect size for the MANOVA, partial η^2 of .01, .06, and .14 represent small, medium, and large effect sizes for the follow-up tests, respectively (Green & Salking, 2005). Finally, internal consistency estimates of reliability (coefficient alpha) for each of the eight subdomains of the CATPA inventory were calculated.

Results

Coefficient alphas for each of the eight subdomains of the CATPA inventory ranged from .77 to .94, indicating a good internal consistency of the inventory. There was not a single check indicating "I do not understand this idea" found on the completed CATPA inventory, showing a good understanding of the CATPA inventory on the part of the participants. Descriptive statistics derived from the CATPA inventory are listed in Table 1 and Table 2. The results for gender and sports participation category are reported below.

Table 1. ***Descriptive Statistics and F Test Results by Gender and by Sports Participation Category***

	Gender								Sports Participation Category							
	Male (n = 91)			Female (n = 108)			F Test		OSG[a] (n = 96)			NOSG[b] (n = 103)			F Test	
Subdomains	*M*	*SD*	Rank	*M*	*SD*	Rank	*p*	η^2	*M*	*SD*	Rank	*M*	*SD*	Rank	*p*	η^2
Social Growth	21.42	2.85	4	21.96	2.91	4			22.67	2.05	4	20.69	3.29	5	.001	.11
Social Continuation	22.19	2.98	2	22.69	3.58	2			23.20	2.62	2	21.67	3.79	2	.001	.05
Health/Fitness: Value	23.92	2.30	1	24.10	2.33	1			24.47	1.67	1	23.53	2.77	1	.002	.04
Health/Fitness: Enjoyment	21.61	3.71	3	22.55	3.12	3			22.86	2.95	3	21.32	3.73	3	.001	.05
Vertigo	19.45	4.80	6	16.99	4.86	8	.001	.06	18.57	4.95	6	17.63	4.98	6		
Aesthetic	14.69	5.95	8	18.24	5.69	6	.001	.08	17.03	6.45	8	16.18	5.61	8		
Cathartic	21.12	4.00	5	21.91	4.21	5			22.24	3.88	5	20.80	4.27	4		
Ascetic	18.08	4.69	7	17.24	5.24	7			18.11	5.07	7	17.10	4.89	7		

Note. Only the *p* values indicating significant differences are listed.
[a]Organized sports group. [b]Non-organized sports group.

Table 2. ***Descriptive Statistics by Cross-Classification of Gender and Sports Participation Category***

	Male OSG[a] (n = 45)			Male NOSG[b] (n = 46)			Female OSG (n = 51)			Female NOSG (n = 57)		
Subdomains	*M*	*SD*	Rank	*M*	*SD*	Rank	*M*	*SD*	Rank	*M*	*SD*	Rank
Social Growth	22.20	2.23	4	20.62	3.21	5	23.05	1.83	4	20.75	3.40	5
Social Continuation	22.93	2.55	2	21.42	3.22	2	23.42	2.67	2	21.88	4.26	2
Health/Fitness: Value	24.40	1.4	1	23.42	2.88	1	24.51	1.86	1	23.63	2.71	1
Health/Fitness: Enjoyment	22.21	3.46	3	20.99	3.89	3	23.39	2.36	3	21.60	3.59	3
Vertigo	19.50	4.63	6	19.40	5.02	6	17.82	5.12	8	16.06	4.43	8
Aesthetic	14.74	6.09	8	14.64	5.87	8	18.88	6.18	6	17.53	5.05	6
Cathartic	21.43	4.04	5	20.80	3.99	4	22.89	3.65	5	20.80	4.54	4
Ascetic	18.15	4.73	7	18.00	4.69	7	18.07	5.37	7	16.31	4.98	7

[a]Organized sports group. [b]Non-organized sports group.

Attitudes Associated with Gender

Based on the ranking results, the top five subdomains with the most positive attitudes (Health & Fitness: Value; Social Continuation; Health & Fitness: Enjoyment; Social Growth; and Cathartic) and the subdomain in the seventh place (Ascetic) were the same for both genders (Table 1). The only difference in the rankings between genders was that Vertigo and Aesthetic ranked 6th and 8th for the boys, but 8th and 6th for the girls. Thus, both genders indicated almost the same attitude profiles of the CATPA, valuing health, enjoyment, and social interaction functions of physical activity most and Aesthetic, Ascetic, and Vertigo least.

The omnibus test of the two-way MANOVA indicated no gender by sports participation category interaction, Wilks $\Lambda = .98$, $F_{(8, 188)} = .58$, $p = .79$. The main effect of gender, however, was statistically significant with Wilks $\Lambda = .84$, $F_{(8, 188)} = 4.64$, $p < .001$, and $\eta^2 = .17$. Univariate F tests were conducted as follow-up tests to identify dependent variables that had significantly different mean values between genders. It was found that the attitude scores on two of the eight subdomains were significantly different between genders. The boys reported significantly higher mean score than did the girls ($F_{(1, 195)} = 13.39$, $p < .001$, $\eta^2 = .06$) in Vertigo subdomain (experiencing danger, fast speed, etc.), whereas the girls reported significantly higher mean score than did the boys ($F_{(1, 195)} = 17.97$, $p < .001$, $\eta^2 = .08$) in Aesthetic subdomain (experiencing beauty, grace, etc; Table 1).

Attitudes Associated with Sports Participation Category

Organized sports participants were identified by checking the agreement of self-reported organized sports participation on the surveys conducted twice with a one-month interval. Ninety-six children (45 boys and 51 girls) indicated themselves twice as organized sports participants in the same sports on the surveys and thus were considered organized sports participants. The remaining children ($n = 103$, 46 boys and 57 girls) were those who did not participate in organized sports, or non-organized sports participants.

The attitude profiles associated with the sports participation category were similar to those associated with gender. The top three subdomains with the most positive attitudes (Health/Fitness: Value; Social Continuation; and Health/Fitness: Enjoyment) and bottom three subdomains with the least positive attitudes (Aesthetic, Ascetic, and Vertigo) were the same for both groups (Table 1). The only difference in the rankings was that Social Growth and Cathartic ranked 4th and 5th in the organized sports group, but 5th and 4th in the non-organized sports group. Again, both groups valued health, enjoyment, and social interaction functions of physical activity most and Aesthetic, Ascetic, and Vertigo least.

The omnibus test of the two-way MANOVA indicated an significant main effect of the sports participation category, Wilks $\Lambda = .87$, $F_{(8, 188)} = 3.54$, $p < .001$, and $\eta^2 = .13$. Univariate F tests were conducted as follow-up tests to identify which dependent variables were significantly different between organized sports participants and non-organized sports participants. The results indicated that the organized sports group demonstrated significantly more positive attitudes than did the non-organized sports group in four of the eight subdomains of the CATPA: (a) Social Growth, $F_{(1, 195)} = 25.14$, $p < .001$, $\eta^2 = .11$; (b) Social Continuation, $F_{(1, 195)} = 10.89$, $p < .001$, $\eta^2 = .05$; (c) Health/Fitness: Value, $F_{(1, 195)} = 8.30$, $p < .002$, $\eta^2 = .04$; and (d) Health/Fitness: Enjoyment, $F_{(1, 195)} = 10.06$, $p < .001$, $\eta^2 = .05$ (Table 1).

Discussion

This study examined middle school children's attitudes toward physical activity and compared their attitudes between genders and between organized and non-organized sports participants. The results indicate that the children, no matte grouped by genders or by the sports participation category, value health, enjoyment, and social interaction benefits of physical activity most. This attitude profile matches the most important values and benefits of physical activity indicated in official documents. Regular participation in physical activity is one of the most powerful means in promoting public health (USDHHS, 1996, 2000). Fun and enjoyment are always attractive aspects of participation in physical activity for children and associated with children's development of lifelong health habits (Graham, Holt-Hale, & Parker, 2001). Social interaction is recognized as one of the key benefits of physical activity (NASPE, 2004). In fact, the top three values of physical activity expressed by the participants match very well national standard of physical education, "values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction" (NASPE, 2004, p.11).

The bottom three subdomains with the least positive attitudes are also the same for the participants regardless of grouping: Aesthetic, Ascetic, and Vertigo. This observation might imply that activity formats (beautiful or not) is not a priority for middle school children to choose physical activities, and that children might not enjoy physical activities with risk-taking experience or vigorous intensity (hard practice) very much. The findings should be considered when providing physical activities for middle school children.

While the participants share some similarities, differences in their attitudes exist between genders and between sports participation categories. With respect to genders, the boys prefer physical activities more than girls that involve risk-taking experience, whereas the girls enjoy physical activities more than boys that involve beautiful and graceful movements. The findings are consistent with those in previous studies (Ewy, 1993; Folsom-Meek, 1992; Hicks et al., 2001; Hughes, 1994; Parkhurst, 2000; Patterson & Faucette, 1990; Schutz, Smoll, & Wood, 1981).

As for the sports participation category, the organized sports participants demonstrate significantly more positive attitudes toward health, enjoyment, and social interaction benefits of physical activity than do non-organized sports participants. While there is a lack of literature directly examining association between organized sports participation and attitudes toward physical activity, previous research reports that organized youth sports are powerful and favorable contexts facilitating children's positive change in psychosocial growth (Larson et al., 2006; Roth & Brooks-Gunn, 2003). Specifically, one study (Westerstahl, Barnekow-Bergkvist, Hedberg, & Jansson, 2003) suggests that participation in leisure-time sports would contribute to the development of positive attitudes toward physical activity. Another study (Forrester, Arterberry, & Barcelona, 2006) reports that sports involvement in public schools is a predictor of students' attitudes toward sports

and fitness activities after graduation. That is, children getting involved in organized sports in public schools tend to demonstrate more positive attitudes in their university years. It is also reported that children who have more positive attitudes toward physical activity are more likely to participate in physical activity outside of school (Chung & Phillips, 2002; Hagger et al., 2002; McKenzie, 2003, Portman, 2003), which might include after-school organized sports. It seems that the finding in this study regarding the association between organized sports participation and attitudes toward physical activity is consistent with existing literature.

One possible reason for the findings in this study favoring the organized sports participants might be the differences in sports levels between the two groups. Although sports skills of the participants were not examined in this study, it would be readily accepted that organized sports participants usually have higher sports skills than those who do not participate in organized sports. According to Portman (1995), highly skilled children tend to demonstrate more positive attitudes toward physical activity, whereas children with low skill levels would have less positive attitudes. Further, it is reported that children's sports levels are positively related to their interests in participation in physical activity (Liu, 2002; Liu & Chepyator-Thomson, 2008). It would be reasonable to consider that participation in organized sports might be one of the contextual factors positively related to children's attitudes toward health, enjoyment, and social interaction aspects of physical activity, as found in this study. However, further research in this area is needed to confirm the finding.

In summary, the children in this study, regardless of grouping, have indicated the most positive attitudes towards health, enjoyment, and social interaction aspects of physical activity and the least positive attitudes towards activities involving risk-taking and hard practice. When compared between genders, the boys demonstrate more positive attitudes than the girls toward risk-taking movements, and the girls are more likely to enjoy physical activities with graceful and beautiful movements than the boys. Further, the organized sports participants demonstrate significantly more positive attitudes toward health, enjoyment, and social interaction benefits of physical activity than non-organized sports participants.

The results of this study suggest following implications. When providing physical activities for middle school children, health promotion, enjoyment, and social interaction are the most important aspects to consider. When gender differences are taken into account, however, risk-taking activities (football, ice hockey, etc.) could be provided for boys, and activities with beautiful and graceful movements (dance, synchronized swimming, etc.) are more suitable for girls. Moreover, it seems that providing children with more opportunities of participation in organized sports might contribute to children's positive attitudes toward physical activity, although further studies are needed to confirm this finding.

Some cautions in generalizing and interpreting the results of this study, however, are in order due to limitations associated with the study. Given that the CATPA defines dangerous activities (vertigo) as "exciting physical activities that could be dangerous because you move very fast and must change direction quickly" (Schutz et al., 1985, p. 259), *dangerous physical activities* in this study may not include those activities frequently found in adventure/outdoor programs, such as wall climbing, camping, ropes courses, hiking, backing packing, canoeing and kayaking, etc. because these activities are not ones that move fast or require change direction quickly. So the less positive attitudes toward dangerous activities found in this study might not be associated with adventure/outdoor programs.

Additionally, there may be a potential gender bias with the wording of the CATPA that defines aesthetic aspect of physical activity as "beautiful and graceful movements" in the CATPA (Schutz et al., 1985, p. 259). The wording might make boys less inclined to indicate positive attitudes towards *beautiful and graceful* physical activities, as revealed in the study. However, beautiful and graceful physical activities are not necessarily suitable for girls only. For example, lay-up in basketball could be beautiful and graceful activity for both genders. Finally, due to the nature of the study design (a quasi-experimental design), the relationship found in this study between organized sports participation and more positive attitudes toward physical activity may not be a cause-and-effect relationship, but a relationship of correlation or association.

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Collaborative Lesson Planning in Physical Education: A Case Study

by David Cluphf and E. William Vogler

Abstract

The purpose of this case study was to analyze the nature and effectiveness of a collaborative lesson planning experience by four elementary physical education teachers. Teachers met four times to plan then have one colleague teach a lesson in fitness to a third grade class. Qualitative and quantitative analysis was performed on statements made in four planning, one teaching, and two debriefing sessions. Further, there was a systematic observation of student and teacher behaviors during the actual lesson taught to determine class/teacher effectiveness. It was indicated in the results that the collaborative effort produced: (a) an effective lesson in which proper attention was paid by teachers to task presentation, content development, teaching functions, and student compliance (b) an experience that elicited enthusiasm, a greater sense of professionalism, and was more motivating than traditional professional development experiences such as workshops and in service training, and (c) subsequently taught lessons that resulted from deeper and more reflective planning noteworthy of mature teachers.

Lesson Plan Study in Physical Education: A Case Study

Research on the professional development of teaching is theoretically imbedded broadly in the literature on social development (Lortie, 1975; Waller, 1932). That is, changes in teaching behavior or thinking are largely a sociological process whose developmental outcomes are systematic and predictable proven by research.

Katz (1972) provided a specific model for the development of teaching which described it as a gradual socialization toward maturity highlighted by survival, consolidation, and renewal stages. Embedded in Katz's notion of renewal and maturity is the idea that teachers create strong networks through formal conversation with peers. In order to reach more mature levels of teaching, teachers need to "share their concerns with others at the same stage of development" (Stroot & Whipple, 2003). In effect, a case can be made on the basis of Katz's assumptions, that the professional development of teachers can be enhanced by the regular and systematic communication of teachers on all matters regarding instruction.

Traditional professional development activities for teachers usually involve conferences, workshops, in service training activities, university classes, and professional journal articles (Taylor & Puchner, 2002). What is common to these development activities is that they are all "external" to the immediate classroom, that is, outside their contextual setting. When professional development is "talked about" rather than implemented on site, the belief is there is less potential for success (Fitchman-Dana & Yendol-Silva, 2003).

Increasingly a number of more "internal" professional development initiatives have begun to focus on teachers carefully examining their practice either directly (e.g., systematic observation) or through the use of artifacts of teaching and samples of student work (Fernandez, Cannon, & Choksi, 2002; Rowley & Hart, 2000). These initiatives focus on teachers doing their own research on their own students on site (Fitchman-Dana & Yendol-Silva, 2003; Masami & Reza, 2005). The focal point of these initiatives is that many believe that imbedding teacher scholarship in their everyday work allows for richer and more meaningful learning and professional development to take place.

Stigler and Hiebert (1999) introduced an imbedded professional development model of Japanese Lesson Study in which teachers collaboratively plan, examine, and evaluate actual lessons. Since then, teachers particularly in the areas of mathematics and science education have utilized Lesson Study as an effective means of professional development (Lesson Study in Japan- U.S. Science Education, 2002; Lesson study research group, 2001; National Research Council, 2002).

The benefits of this model of include professional development that is set within the actual context of the teachers' schools, districts, and curriculum. Teachers can focus their attempts to improve instruction on just one lesson at a time, which is more manageable and, therefore, more motivational. Improvement in teaching is viewed as a process that occurs over time as teachers inquire and think collaboratively about their instructional practices. The model is a comparatively low-cost, teacher-directed form of professional development that many districts have found to help teachers increase their knowledge of subject matter and instruction, make a stronger connection of daily practice to long-term goals, and increase motivation and self-efficacy.

A study of this model by Taylor and Puchner (2002) described the impact of a math education collaborative Lesson Study on 26 elementary teachers who combined into 7 groups to plan and conduct classes over a 15 month period. They found that after Lesson Study the teachers became more: (a) motivated towards teaching and planning, (b) self realized i.e., taking training into their own hands, (c) reflective i.e., shifted their thinking from scattered, fragmented, and frenetic to deeper, more reasoned planning, (d) communicative i.e., talked more about teaching and learning with peers, and (e) professional i.e., the seriousness with which they took their work.

While the importance of collaboration and collegiality in physical education has been documented, studies involving Lesson Study as a form of professional development have not occurred (Doutis & Ward, 1999; Rovegno & Bandhauer, 1998; Sharpe, et al, 1999; Stroot, 1994). Therefore, the purpose of our project was to determine the nature (dynamics of teacher interaction) and effectiveness of a Lesson Study collaborative effort in physical education. Better understanding of such dynamics and efforts should ultimately help lead teachers more quickly and efficiently into the mature stage of development in teaching.

Method

Case Study

The case selected for this study was a bounded process of lesson planning, teaching, and evaluation of a lesson by several teachers and their facilitator over a period of several weeks in order to determine an in depth understanding of this process (Merriam, 1998). Analysis included both quantitative (systematic observation of behavior; tallying scripted statements) and qualitative analyses (teacher interviews).

The systematic observation procedure involved time-interval sampling of student and teacher behaviors in a Lesson Study class to estimate, quantitatively, the percentage of time spent successfully engaged in a motor activity by students in the focus lesson (Siedentop, Tousignant, & Parker, 1982). This is sometimes portrayed as Academic Learning Time in Physical Education (ALT-PE) and has been used to evaluate "effectiveness" of a program. Specifically, effectiveness was evaluated in terms of how time was spent in the physical education class relative to class context (i.e., time taken in transition between activities, class management, background material, and fitness) and levels of learner involvement (i.e., whether a student was motor appropriate). Extensive use over three decades of research on effective teaching support the use of Academic Learning Time-Physical Education as a valuable method of determining teacher effectiveness (e.g., see Silverman & Ennis, 2003).

In order to more clearly understand the group dynamics of lesson plan study, planning statements were coded by Teaching Function and Lesson Plan Components. Rink (2006) implied that Teaching Functions are activities a teacher does before, during, and after a lesson to ensure student learning. These include: (a) Identifying Outcomes, (b) Planning, (c) Presenting Tasks, (d) Organizing and Managing the Learning Environment, (e) Monitoring the Learning Environment, (f) Developing the Content, and (g) Evaluating. We hoped to determine the appropriateness of the planning process by studying the emphasis placed on these various teaching functions during lesson plan study.

To further determine insight into the process, planning statements were coded as a function of a standard lesson plan consisting of various parts of a lesson such as: (a) Objectives, (b) Introductory Set, (d) Warm Up, (e) Transitions, (f) Content Development, (g) Management/Formations, (h) Timeline, and (i) Closure.

The reliability of coding statements was determined by calculating the percentage of line by line agreement between two researchers and dividing the # of agreements by the sum of agreements and disagreements times 100. A criterion of 80% agreement was deemed the minimal acceptable percentage which is fairly standard in the systematic observation literature (Cooper, Heron, & Heward, 2007). An agreement of 87% was reached and thus the data was determined as reliable. A form of validity was determined by subjectively agreeing upon definitions of the various teaching functions and lesson plan components prior to coding. At the conclusion of actual coding, any disagreements were discussed line by line until agreement was reached.

Finally, to further assess the dynamics and any other benefits of Lesson Study, a qualitative analysis was performed in which formal and informal interviews were conducted at various points during the project following procedures outlined by Merriam (1998) These have been previously used in case study physical education research (Vogler, Koranda, & Romance, 2000). We both recorded interactions between teachers during planning sessions and interviewed teachers at debriefing sessions to determine teachers' feelings and interpretations of the Lesson Study to gain a more in depth understanding about the process. We also audio-taped and took some field notes of all their meetings and the focus lesson as well as collecting all Lesson Study artifacts produced during the collaboration which included lesson plans, observation tools, and field notes (Fernandez, Cannon, & Chokshi, 2003). These were used to help confirm certain notions of themes which may have developed during these activities.

Participants

Participants were selected using purposive or criterion-based sampling, which is recommended for case study research (Patton, 1996; Vogler et al., 2000). The case of interest was a Lesson Study process, with teachers selected from a local school district in an outlying metropolitan Midwestern town on the basis of the following criteria:

1. Willingness to engage in the Lesson Study form of professional development.
2. Certified to teach physical education in the state.
3. Teaching at elementary physical education level 3rd grade (arbitrarily picked).
4. Ability to meet on a regular basis to plan and discuss the focus lesson.
5. Have access to a randomly selected physical education class in which to deliver the focus lesson.

Participants in this study were four elementary physical education teachers who met the previously described criteria and one university level teacher trainer acting as facilitator. They were certified to teach physical education in the state and demonstrated varying levels of teaching experience (27 years, 13 years, 5 years and first year). Three teachers had or were completing a masters' degree in physical education (two with an emphasis in adapted physical education). One had just finished a bachelors degree in physical education teaching.

All four teachers knew each other, but had been limited in their ability to work together because they were in four different buildings. This was the first participation in Lesson Study for the teachers although all but one of them had worked as student teaching supervisors with the facilitator in the past.

The facilitator was a university professor at a local institution with Ph.D. credentials and extensive experience (6 years) in physical education teacher education.

Procedure

Teachers contacted to participate in the study were presented with a typical Lesson Study model which was described in the following way (Stigler & Hiebert, 1999):

1. A topic to teach is chosen that is linked to larger national, district, or school goals.
2. The teachers then meet regularly to jointly produce a detailed lesson plan (research lesson) which one of the teachers uses to teach in a real classroom while the other teachers observe the lesson and take notes.

3. Immediately following the lesson, the teachers meet together to share observations and feedback.

4. Their next step is to revise the lesson (with the possibility of another teacher teaching implementing the revised plan).

5. Then a report is produced by the teachers to share results and what the Lesson Study has taught them with particular attention to their research question

The project consisted of seven meetings and a 7 mo follow-up during which various components of the Lesson Study were accomplished (see Table 1). The first meeting was an orientation of the entire process including a discussion of the dynamics of Lesson Study, participant roles, time frame and other logistical issues. The lead teacher (teacher of lesson) was selected at this session.

Table 1. ***Meeting Activities of Teachers During Planning Sessions***

Meeting #	Data Collection
1. Orientation	Field Notes (FN) Only
2. Explanation of Format and Selection of Content	Audio Recorded (AR); FN
3. Content Planning	AR
4. Logistics and Explanation of Research Process	FN
5. Lesson	Videotaping; FN
6. Immediate Debrief	AR
7. One Week Follow Up	AR; FN
8. No Meeting – 7 mo email follow up	Email – response to questions

The purpose of the second meeting was to remind teachers of the components of a traditional lesson plan (e.g., introductory set, content development, closure, etc.) and to begin the first step of the Lesson Study. During this time, the teachers determined the content of the focus lesson and began considering objectives. Teachers selected a fitness theme for the lesson as there was a perceived student need in this area. This meeting was audio-recorded and the facilitator was present.

For the third meeting, the teachers met without the facilitator and continued to plan the focus lesson. This was an audio recorded session in which teachers planned the scope and sequence of the lesson, discussed potential student responses, and considered what teaching style they would utilize.

During the fourth meeting, the facilitator discussed lesson observation techniques, the de-briefing process, and protocols for observer behaviors during the focus lesson. This session was not audio recorded but field notes were taken by the facilitator.

The fifth meeting was the day of the actual focus lesson. The lead teacher (group determined) taught the lesson while the facilitator and other teachers observed. There were two video-cameras utilized; one to record students and one to record the teacher behavior.

Following the lesson an audio recorded de-briefing (sixth meeting) took place in which the teachers discussed the lesson and lesson plan. The seventh and final meeting was an audio recorded follow-up interview one week after the focus lesson.

There was a seven month email follow up with teachers asking them to reflect on the experience as a professional development activity.

Systematic observation. Two video cameras were utilized to record teacher and student behaviors during the focus lesson. The "teacher" labeled camera focused on the teacher as she went through the process of teaching the lesson. The "student" labeled camera focused on (4) randomly selected students (2 boys, 2 girls) to be assessed for analysis of student ALT-PE behaviors and were kept in view at all times. The teacher wore a wireless microphone to capture her verbal interactions and directions.

Researchers had completed the tutorial in the ALT-PE coding manual and had practiced coding behavioral data previously so that reliability and validity could be achieved before formally coding the videotapes. Inter observer reliability was calculated by dividing the agreements by the agreements plus disagreement multiplied by 100 (Cooper, Heron, & Heward, 2006). Inter observer reliability between the two researchers trained to collect the ALT-PE data was 80% or greater for both videotapes.

Lesson planning, debriefing, and reflection sessions. For each of the planning, debriefing, and reflection interview sessions, verbatim transcripts of audiocassette tape recordings were completed. Verbatim transcripts were transcribed into case records so that the investigators could analyze spoken comments for emerging themes of importance. A semi-structured interview was conducted one week following the lesson and focused on general questions about how the teachers felt about the process as well as specific questions about professional development. Qualitative analysis procedures presented by Merriam (1998) were followed once verbatim transcripts were completed. The case records were read several times to determine the most important and prominent statements from the teachers. Statements were then categorized and placed into outline form. These themes then were presented to the teachers at the end of the school year via email and phone, some 7 months after all other meetings and lesson, for verification (triangulation) and further analysis.

Results

Quantitative Evaluation of Teacher Scripts from a Teaching Function Focus

It can be seen in Table 2 that, from a Teaching Function perspective, when teachers first began to plan a lesson (after the first orientation meeting), most of the emphasis in their discussion

Table 2. ***Percentage of Teacher Planning Statements Coded By Teaching Function***

Teaching Functions	% of Statements	
	Lesson Study #1	Lesson Study #2
Identifying Outcomes	58.7	02.6
Task Presentation	00.0	17.2
Organizing and Managing	33.5	19.5
Monitoring the Environment	03.0	11.1
Developing the Content	04.8	49.6
Evaluating	00.0	00.0

was placed on identifying objectives and organizing/managing as might be expected. This is logical to assume since all good lessons are planned "after" the establishment of class objectives. It wasn't until their next Lesson Study that the class content was developed and some attention was paid to presenting the tasks (see also Table 2). It's interesting to note that teachers did not place any emphasis on evaluating the effectiveness of the instructional process in either planning session.

Quantitative Evaluation of Teacher Scripts from a Lesson Plan Component Focus

The analysis of emphases placed on lesson plan components revealed much the same thing except that it was interesting to note that little or no emphasis was placed on transitions between lesson tasks, the timeline of the lesson, and closure of the lesson (see Table 3). As it turned out, these were discussed by the teachers in the follow up interviews as being weaknesses of the lesson i.e., the lesson ran too long and there was no closure. It can be said that, for the most part, however, emphasis placed on both Teaching Function and Lesson Plan Components seemed appropriate.

Table 3. ***Percentage of Teacher Planning Statements Coded By Lesson Plan Components***

Components	% of Statements	
	Lesson Study #1	Lesson Study #2
Objectives	50.0	01.7
Introductory Set	00.0	16.6
Warm Up	16.2	00.0
Transitions	01.3	01.0
Content Development	05.4	67.6
Management/Formations	24.3	12.8
Timeline	02.7	01.0
Closure	00.0	00.0

Quantitative Evaluation of Teacher and Student Behaviors in the Focus Lesson

Table 4 is a display of how time was allocated in the focus lesson and its four major subdivisions: (a) Management, when students were not involved in physical education activities but were engaged in managerial functions that were considered on task; (b) Transition, when students were not involved in physical education activities, but were in transition between stations and were considered on task; (c) Subject Matter Knowledge, when the primary focus of the class was on the knowledge of rules and techniques; and (d) Subject Matter Motor, when the primary focus of class was on motor involvement in physical education activities.

It is demonstrated in Table 4 that the largest portion of class time (52.7%) was dedicated to Subject Matter Motor activity, specifically engagement in the fitness stations. A smaller, but still large, portion of class time (22.7%) was allocated to Subject Matter Knowledge, specifically, instruction concerning what to do at each station and how to rotate from one to the next. Together, these

Table 4. ***Teacher Context Behaviors (% of time allocated, M, SD)***

General Content		Subject Matter Knowledge	Subject Matter Motor
24.3 (0.4)		22.7 (0.0)	52.7 (0.3)
Transition	Management	Background Knowledge	Fitness
13.6 (0.8)	10.7 (0.0)	22.9 (0.0)	52.8 (0.3)

segments added up to 75.4% of class time allocated to physical education in general. Conversely, Management and Transition activities only accounted for 23.7% of the total class time.

Table 5 is a display of the Learner Involvement Level in the class context. The four major segments of Learner Involvement Level are (a) Motor Appropriate, when students were successfully engaged in a motor activity; (b) Motor Inappropriate, when students were engaged in a motor activity, but the activity was either too easy or too difficult for the student; (c) On-task, where students were not engaged in motor activity but were on-task in the context of the lesson. Specifically, students were engaged in receiving Subject Matter Knowledge, transitioning from one activity or station to the next, or Management; and, (d) Off-task, where students were not doing what they were supposed to be doing. Off-task behavior (2.4%) was negligible and not included in the table. It can be seen in this table that the largest portion of class time (60.2%) was spent in On-task behaviors that were not motor activities. The students were engaged in a Motor Appropriate fashion for 32.8% of the class and Motor inappropriate (not reported in table) for 4.6% of the time. It can further be seen in Table 5 that when students were not engaged in physical activity, they were appropriately attentive to other aspects of the class. When students were not engaged in a physical activity, they were listening, watching, or transitioning appropriately.

Table 5. ***Learner Involvement Behaviors (% of time engaged or on-task, M, SD)***

% Motor Engaged - Motor Appropriate				
Students (S1-4)				
S1	S2	S3	S4	avg.
27.0	43.0	28.4	32.9 =	32.8 (6.2)
% Not Motor Engaged - On-Task				
Students (S1-4)				
S1	S2	S3	S4	avg.
69.0	53.0	57.0	62.4 =	60.3 (6.0)

Qualitative Evaluation of Lesson Study

Themes gleaned from qualitative analysis came from meeting #'s 2, 3, 6, and 7. Meetings left out were largely organizational in nature and not deemed as significant in terms of the dynamics of the process. Researchers agreed that the following themes emerged which were determined by comments that Lesson Study teachers most wanted to emphasize.

Meeting Discussing Lesson Study with Facilitator (meeting #2)

After the orientation meeting (meeting #1), teachers met a second time to discuss among other things, the selection of lesson

content. The most frequently occurring higher order themes to emerge from the case records of the initial meeting were "project enthusiasm" and "identifying outcomes." The "project enthusiasm" theme related to the teachers willingness and enthusiasm for and anticipation of the project. The "identifying outcomes" theme related to how the teachers established the teaching goals of the focus lesson and determined which objectives would be presented. Statements from the teachers are presented here to illustrate these themes:

Project enthusiasm. The teachers expressed great enthusiasm for the project in regard to how they could develop as professionals as well eagerness to work as a collaborative group. It is clear by statements from the teachers that, at this point, the notion of working in a collaborative nature with colleagues from other buildings in the district was important to them. The following statements reflect this theme:

"Being a first year teacher, I am excited to work with such professional teachers with so much experience".

"I think this is good because it gives us an opportunity to work together on something, and that doesn't happen very often".

"If we weren't doing this Lesson Study, I probably would not have met one of my district colleagues".

"Two heads are better than one and four is fabulous".

Identifying outcomes. The majority of the initial session was devoted to identifying the outcomes of the focus lesson. The teachers conversation centered on identifying gaps in desired performance and students' actual performance, identifying a focus for the lesson and designing objectives to meet desired outcomes.

"I have seen a huge drop off in students' upper body fitness in my 27 years in the district".

"There is also a drop in love for physical activity".

"Kids have less time to develop "natural" muscular strength and endurance".

"I think a goal for this lesson can be to help students increase strength and provide them a "toolbox" for outside of school activities".

"It would also be nice to show them how to recognize improvement at a personal, non-competitive level".

Teacher Lesson Planning Meeting (Meeting #3)

The higher order theme that occurred most commonly during the teacher planning meeting was labeled as "content development." This theme relates to discussion of how the activities are performed including "critical elements" of the desired movements of students in class. The other theme that emerged, though not as frequently, was "task presentation" in which the teachers discussed how the tasks would be presented to the students.

Content Development. The majority of the planning session was devoted to detailed "nuts and bolts" discussion about how the activities for the day would be performed by the students. The teachers spent a great deal of time breaking skills down into critical elements to ensure that students were receiving accurate and important skill information. Sample comments illustrating teachings developing the lesson content are displayed here.

"Jumping jacks begin with feet together and arms at sides. Jump with feet apart and arms swing and extend out to the side of the body and overhead".

"Have the kids pick up the medicine ball and hold at chest. Raise medicine ball high into the air until the arms are almost straight, not locked. Keep arms straight and lower ball in front of chest and repeat".

"For push-ups, the hands are under the shoulders with fingers straight pointing away from the body. The legs are straight, parallel and slightly apart with toes supporting the feet".

"Take time to make sure that they are doing the exercises properly".

Task Presentation.

"For the anticipatory setting, let's use posters of professional of different sports that demonstrate upper body strength. Maybe a picture of a rock climber and a gymnastics person".

"So, basically you won't need to explain all of this (lesson plan), but I am sure you will have to paraphrase it".

"I would say just go into detail".

"Straight arms just like a seal walk except they legs aren't dragging. We referred to this as a "front lean rest position."

Other Themes

It is important to note that this planning session was not bereft of other important themes such as *safety, evaluation, and time management*.

Safety

"I don't let my kids ride scooters on their knees".

"I get nervous about it because when they are riding on their knees, their bottoms come up".

"You cannot lean forward. That is one thing I really have to stress".

Evaluation

"While they're doing the modified pull-up on the bar what are we looking for them to do"?

"Evaluate by observing students using correct form and student will be actively engaged throughout the activity".

Time Management

"Do you think we will be able to do this in 30 minutes"?

"Do we want to eliminate some of the activities"?

"The last part is jogging for 2 ½ minutes".

Immediate Debrief of Focus Lesson (meeting #6)

Immediately following the focus lesson, the teachers met to discuss how the lesson went. By far, the most common higher order themes that emerged from this session were student "behavior" and "compliance." The "student behavior" theme related how students conducted themselves socially in relation to the lead teacher, peers, and equipment. The "student compliance" theme related to how closely students followed instructions for how they were to engage in the activities.

Student Behavior. Overall, the teachers felt that the students behaved in a socially appropriate manner during the lesson. The following statements reflect this sentiment:

"I felt as I walked around that most of them were on task doing what they were told to do with few exceptions".

"I observed "Jimmy's" name called four or five times".

"Overall behavior of this class was good, better than normal".

"I noticed a couple of students were elbowing. Those who were much faster, when someone tried to pass them, they would do an elbow".

"Oh they did a fabulous job. They were so focused. There was very little talking between them except at the last station".

Student Compliance. While the teachers were pleased with the overall behavior of the class, they expressed concerns about students modifying the activities and not performing the tasks in the requested manner. They felt that if an activity caused discomfort or fatigue, the students modified the activity to make it easier. They did, however feel that the modifications were acceptable, if the students remained on-task.

"While I was watching the seal crawl, I noticed that the first time they were going "ouch," the second time they used their knees, and the last time they just crawled down the mat".

"Did I tell them five times to rotate stations"?

"The people using their knees on push-ups. I think they are still using their arms. "There is no way someone could have done that activity the whole time".

"So even though they weren't always using correct form, I really think they still got an upper-body workout".

"Even though they weren't using the exact correct form, they were really focused on what the objective was".

Other Themes. Other themes that emerged during this conversation related to "time management," "planning errors," "professional reinforcement," and "value."

Time Management

"We went overboard".

"It (initial explanation) took us longer than what we planned, but it was still good".

"I think I would have done less than 2 ½ minutes per station".

Planning Mistakes

"We kept going back to "do we have too many stations?"

"And the fatigue factor, if at six they started losing it, then maybe six is enough".

"We forgot to plan a closure".

Professional Reinforcement

"I thought you did wonderful".

"I was really impressed by your teaching style".

"I have never seen you teach before and, you go girl".

Value

"Man, why can't we have four sets of eyes for every lesson? We would be excellent teachers".

One-Week Follow-Up Session

One week after the focus lesson, a follow-up de-brief session was held with the teachers to determine their overall frame of mind regarding the Lesson Study process. Overwhelmingly, the higher order theme that emerged was labeled as "professional development" and related to such issues as attitude, logistics, group dynamics, benefits, and drawbacks. A second theme that emerged was identified as "instructional effectiveness" and was associated with issues of task presentation and student learning.

Professional development. It is clear by statements made by the teachers that they found the Lesson Study process enjoyable, beneficial, and rewarding. The following statements reflect this attitude:

"I can't think of anything bad or negative about it. I thought it was awesome."

"This was definitely a better than a workshop we have attended. We were more involved in this instead of listening to someone lecture."

"I feel that this Lesson Study has made me even more motivated than before. I realize that I CAN make a difference in some students' lives by working hard at being a great teacher."

"After doing this project, I am more aware of paying attention to observing individual students. By the end of the day you are tired and some things slip by. But after this, I am more aware of observing all students."

"I learned that even when you think you have your eyes on everyone in class, there are still students who will slip past you. I learned a lot about observing students."

"It goes back to 'two heads are better than one.' "

"When we have four sets of hands it was fabulous."

"It's a shame we can't get together more often to do things like this."

Instructional Effectiveness. While they reflected that they thought the lesson went well, the teachers still saw several areas in which they could improve or modify the activities to increase student learning. They also discussed several matters that they would do again as a result of this project.

"I spent a lot longer talking to the class during this lesson than I usually do, but I was worried that they may not understand everything."

"We went way overboard in the amount of activity that we thought the kids could do."

"I think for a lot of the kids, showing the pictures at the beginning and then having them do the activities made them more motivated. They will remember that."

"Yes, the anticipatory set is a big part of the whole lesson plan."

"We really didn't plan a good closure to the lesson."

Discussion

The analysis of the Lesson Study "case" from multiple perspectives revealed many elements of value for the collaborative planning experience and the professional development of the participating teachers. These elements were revealed after careful analysis of: (a) planning sessions for teaching function and lesson planning components, (b) systematic observation of teaching/ student behaviors during the target class; and (c) verbally spoken themes during planning and follow up sessions.

These positive results were consistent with those found in other Lesson Study literature in math education in both Japan (e.g., Fernandez, Cannon, & Choksi, 2003) and the United States (Taylor & Puchner, 2002), and may be used as evidence to support this approach as an alternative to more traditional forms of professional development in physical education. The result is valid internally

to the extent that: (a) the "case" was viewed from a perspective of multiple sources of data (triangulation), (b) themes from interview data were checked by subjects for accuracy (plausibility checks), (c) there were long term follow ups to allow for reflection by subjects (repeated observations), and (d) two researchers developed research themes by consensus (peer examination). The result is valid externally to the extent that readers can relate to the analysis and is otherwise known as "User Generalizability" (Thomas, Nelson, & Silverman, 2005).

These results are more specifically discussed as follows: (a) quantitative evaluation of teacher scripts from a Teaching Function and Lesson Plan component focus, (b) quantitative evaluation of teacher and student behaviors in the focus lesson, and (c) qualitative evaluation of lesson study. It was hoped that the dynamic processes and outcomes of this Lesson Study "case" would be clearer from this multiple analysis perspective.

Quantitative evaluation of teacher scripts from a Teaching Function and Lesson Plan component focus

When analyzing Lesson Study from the perspective of Teaching Functions and Lesson Plan component focus, it was believed that the counting and categorizing of statements made during planning would reveal something of the interactive working dynamics between teachers. Further, it was believed that the order in which planning decisions were made would reveal something about its' appropriateness. Effective teaching is somewhat sequential e.g., assessment should precede identification of objectives which should precede development of content which should precede a plan for task presentation.

The results revealed little about the dynamics of interaction since statements were mostly concrete about what to do and say rather than reflective about their mindsets, feelings, and thoughts during planning. Statements did, however, demonstrate a certain amount of appropriateness in planning related to "order" of planning decisions. For example, the teachers knew on the first day of planning to select an objective (fitness) which would guide the lesson. This was followed by discussion about management and organization. On the second day of planning, teachers were then concerned with how to develop the content and present activity tasks. This order is consistent with "effectiveness" as is commonly noted in the research on teaching literature (Rink, 2002).

In spite of the four "sets of eyes" the lesson, while effective, was less than perfect as there were some errors in planning that were revealed in the actual lesson. For example, during planning, our teachers forgot to attend to transitions between tasks, timelines, and a closure to the lesson. These were either "lacking" during or absent from the lesson much to the chagrin of our collaborators as follow up interviews revealed. Further, teachers did not relate the objective of "fitness" to any specific unit or school plan or district, state, or national professional outcome standards e.g., those identified by the National Association for Sport and Physical Education (2004). Rather, they elected to develop outcomes based on some self perceived "group" notion of the need for greater activities of fitness. While unit and other plans may have been in the back of their minds, comments reflecting this were not evident.

The analysis of Lesson Plan components was an attempt to simply see if teachers had effectively attended to every aspect of a traditional lesson plan. As was done with Teaching Functions, teacher statements were counted and categorized by components found on a normal lesson plan such as: (a) objectives, (b) introductory set, (c) warm up, (d) transitions, (e) content development, (f) management/formations, and (g) timeline.

Similar to what was found in the analysis of Teaching Functions, little was revealed about the "mindsets" of teachers when listening to their talk about planning components. What was more revealing was the presence or absence of statements about planning components and the order in which they were made. Quite simply, what teachers talked about (objectives, introductory set, warm up, content development, management and formations) were appropriately conducted in class. Components that were not talked about (transitions between lesson tasks, the timeline of the lesson, and closure of the lesson) were also neglected in the lesson. In this regard, it seems that this/these teacher(s) were extremely concrete in their planning i.e., there was little reflection or thoughtfulness beyond the immediate lesson. They were all about the business at hand and not what the future would bring as a function of this collaborative experience! This was essentially what was reported by Taylor and Puchner (2002) in their study of math educators when they said that prior to their collaborative study experience, teachers got bogged down in the "nuts and bolts" of teaching and tended not to be reflective and thoughtful planners.

Similar to what was found in the analysis of Teaching Functions, there was an appropriate "order" in the way teachers planned parts of a lesson. Lesson planning session #1 began with attention largely being paid to objectives and management followed by planning in session #2 for introductory set content development.

When viewed together (Teaching Function and Lesson Plan components), in spite of some planning component omissions (particularly timeline and closure), teachers largely planned for an effective class. The following discussion of systematic observation reinforces this notion.

Quantitative evaluation of teacher and student behaviors in the focus lesson

Systematic observation revealed that collaborative planning resulted in an effective lesson that produced a significant amount of time allocated to physical education teaching and high levels of learner involvement. Specifically, in real time, almost 29 of the 38 min of class i.e., over 75% of class time, was devoted towards the content of physical education. The remainder of allocated time consisted of necessary transitions (5 min) and management (4 min). While high allocations of time towards the subject matter (physical education) indicated a degree of effectiveness, the analysis of learner involvement was more revealing. As Berliner (1979) indicated in his seminal work on academic learning time, a teacher must make use of allocated time by successfully engaging students in learning experiences. The sampled students in our study were successfully motor engaged 12 of the 38 min of allocated time which is consistent with "effective" teaching behaviors noted in the research on teaching physical education literature (e. g., see compilation of research in Silverman & Ennis, 2003; Metzler, 1989). This is important in that a positive collaborative experience in planning must also result in a positive and effective class where

students are successively engaged in learning experiences. After all, it would do no good to spend all that time on collaboration unless the resulting class was a good one.

Qualitative evaluation of lesson study

As was shown in the results, collaborative lesson plan study revealed multiple themes of positive dynamics between teachers throughout the entire process. For example, the experience of collaborative planning and teaching infused a new excitement for teaching among all participating teachers regardless of teaching experience as was revealed by teacher comments during various stages of interview. The excitement seemed rooted in the satisfaction gained by teamwork and a newfound sense of professionalism and collegiality enabling mentorship. For example, one teacher wrote, "Every time we get together, I learn something. Also, if I have…a problem with a lesson or student, it is nice to have other professional input…I value that!" The process of reaching a collaborative decision about what to teach in a lesson seemed to give the teachers a great sense of pride and ownership in their "product." They felt that they planned and implemented an effective, quality lesson plan that can be revised and added to their "toolbox" for future use. When mistakes were made, they seemed determined not to repeat them.

Regarding mentorship, the most novice teacher wrote, "…after observing such a professional teacher after her 12 years of teaching, has made me more motivated than before. Watching (name) teach made me realize I can make a difference in some students' lives by being a great teacher and working hard at it." A more veteran teacher wrote simultaneously, "It (the experience) made me feel more professional. I felt that (named experienced teachers) and I were serving as a role model for (novice teacher), with us being veteran teachers and her just starting her teaching career. I enjoy being able to help (novice) and be a role model for her." These types of comments supporting the collegial process lend credence to what Lewis, Perry, and Hurd (2001) have indicated to be a strong benefit of Lesson Study.

In addition, it validates, somewhat, Katz' (1972) notion that with strong networking and formal conversation with peers novice teachers may more easily reach more mature levels of teaching. In effect, as written earlier, the professional development of teachers can be enhanced by the regular and systematic communication of teachers on all matters regarding instruction.

This enthusiasm of teachers in our study was not short lived. The seven month follow up communication indicated a lasting excitement and an interest in getting together again. One teacher wrote, "…I continued to keep in contact with at least one of the elementary teachers at least once per week". The benefits seemed to apply to teachers regardless of experience. However, the most experienced of the teachers (27 years) had a more reasoned perspective. She wrote, "…we don't get much opportunity to actually plan together and collaborate, twice a year if we are lucky. So to think about doing this on a regular basis is a nice concept but unrealistic." So, the enthusiasm for the project was tempered by logistical reality and the perceived non likelihood this would consistently happen under the present system of professional development.

Regarding professional development, collaborative Lesson Study seemed more energizing than other more traditional forms. One teacher wrote, "This was definitely a better experience than workshops we've gone to. We were more involved in this instead of listening to someone lecture." So it seems that the hands on, "action research" component of the study particularly contributed to the effectiveness of the professional development experience.

Another important theme expressed primarily in the follow up with teachers involved the shift to a more in depth approach to planning as a result of the lesson study experience. During the early stages of planning for the target lesson and the immediate debriefing session, teachers were more concerned with specific details of the lesson. Important issues were identification of outcomes, content development, and even safety, time management, and facilities. Attention paid to these details heightened instructional awareness for later planning. Teachers indicated that they were more thorough and reflective in subsequent planning on their own. It seems the attention to detail brought to the planning and follow up meetings made a lasting impression about the many faceted considerations for planning. One teacher wrote after a 7 mo time period, "I probably put more thought into my lessons now than I did before. It forced me to look deeper into my lesson than I had in the past." Another wrote, "One of the things I got out of this project was the need to look deeper into what I teach and why I am teaching it. It helped me have significance for each lesson." This shift to a greater and deeper focus on planning and teaching is consistent with what Taylor and Puchner (2002) found in a different context with different timelines and confirms and extends this notion first presented by Fernandez, Cannon, and Choksi (2002) that Lesson Study produces this outcome.

Conclusion

It can be concluded that Lesson Study planning is a professional development approach that helps teachers move more towards a desirable level of teaching effectiveness. Specifically, this study reinforced the notion that formal conversation and networking can result in a deeper and more reflective planning and evaluation of a lesson. It can be assumed if Katz (1972) model holds true, that this would also help beginning teachers arrive more quickly at a greater level of instructional maturity and invigorate teachers with extensive experience. In our study at least, collaborative Lesson Study approach seemed more amenable than more traditional forms of professional development such as attending conferences and in service lecture days that are out of the context of the classroom itself.

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Testing a Model of Physical Education Enjoyment and Physical Activity Among High School Students

by Hairul A. Hashim, J. Robert Grove and Peter Whipp

Abstract

The importance of physical education (PE) enjoyment in promoting adolescent participation in physical activity (PA) is generally recognized. However, research findings indicate a consistent decline in enjoyment of PE among students, especially high school students. This decline has been partly attributed to a lack of understanding of the processes that underlie enjoyment of PE. Utilizing a framework of sport enjoyment proposed by Scanlan and Lewthwaite (1986), the present study examined a model of PE enjoyment processes and PA involvement among adolescents aged 11 to 16 years. The sample consisted of 203 Western Australian adolescents (Mean age = 13.5, SD = 0.98). Participants completed self-report measures of PE teaching processes and PA involvement. The model was analyzed using Structural Equation Modeling. The results revealed an acceptable measurement fit of the model (χ^2 = 46.21, df = 19, p <.001; RMR = .03; CFI = .97; RMSEA = .08). Furthermore, significant unstandardized regression weights were also obtained for all of the paths loadings indicating a good structural fit. The model was also tested for group invariance. The results revealed a nonsignificant model invariance between male and female samples ($\nwarrow\chi^2$ = 5.3, p = .51). The findings support the notion that PE enjoyment is important in promoting adolescent PA. To promote PE enjoyment, we believe that certain number of processes, particularly activity-related excitement, should be considered when structuring the PE program.

Testing a Model of Physical Education Enjoyment and Physical Activity among High School Students

The relationships between physical activity (PA) and health-related outcomes are well documented. Indeed, there is evidence that PA provides an array of physical, psychological, social, and emotional benefits for individuals of all ages (Caroll & Loumidis, 2001; Center for Disease Control and Prevention [CDC], 1997; Wankel & Berger, 1990). Among adolescents, it has been specifically shown that higher levels of PA are associated with higher levels of perceived competence (Caroll & Loumidis, 2001) and lower levels of anxiety and depression (Parfitt & Eston, 2005). It has also been shown that PA is associated with an increase in cardiovascular fitness (Imperatore, Cheng, Williams, Fulton, & Gregg, 2006), a reduced risk of being overweight (Sharma, 2006), and a tendency to possess fewer risk factors associated with coronary heart disease (Trost et al., 2002). The recommended level of PA for adolescents to achieve these benefits is 30 – 60 minutes of moderate to vigorous activity per day (Corbin & Pangrazi, 1999). Unfortunately, a large proportion of adolescents do not meet this recommended level. For instance, in a recent survey in the United States, only 35.8% of high school students met currently recommended levels of PA (CDC, 2006). In an Australian study, although a sizeable percentage of adolescents had adequate PA, girls (and especially older girls) were lower in PA compared to boys (Booth et al., 1997). Given these findings, a number of researchers believe it is necessary to further investigate factors that could potentially enhance adolescent involvement in PA (Sallis, Prochaska, & Taylor, 2000; Sallis, Prochaska, Taylor, & Hill, 1999).

Physical education (PE) is viewed an excellent platform to promote PA among adolescents (Blanskby & Whipp, 2004; CDC, 2001). Specifically, it was argued that PE could provide opportunities for adolescents to learn a wide range of activities that could potentially lead to healthier lifestyles in adulthood (Anderssen & Wold, 1992; Fairclough, Stratton, & Baldwin, 2002). It was also argued that enjoyment of PE could potentially promote adolescent involvement of PA. However, in PE literature, the relationship between enjoyment and PA appears to be inconsistent. For instance, in a study of PA determinants among children in grades 4 to 12, Sallis et al. (1999) revealed that enjoyment of PE was a predictor of PA across all grades for boys. Among girls, PE enjoyment emerged as a predictor of physical activity except for younger children in grades 4 to 6.

Moreover, inconsistencies have also emerged in a number of other studies. For instance, in a study conducted by Caroll and Loumidis (2001), they observed higher enjoyment of PE among students in a high activity group when compared to low activity and no activity groups. On the other hand, Trost et al. (1997) revealed that PE enjoyment was a significant predictor of vigorous physical activity only among girls. In a more recent study, Fairclough (2003) observed negative correlations between enjoyment of PE and moderate-to-vigorous physical activity (MVPA) among girls. Furthermore, when participants were categorized into low and high MVPA groups, lower levels of PE enjoyment were observed in the high activity group. A recent review of PA determinants has also shown some inconsistent findings. Specifically, Sallis et al. (2000) reviewed 102 published studies that focused on the determinants of physical activity among children and adolescents (3 to 18 years). Among children, a negative association between PE enjoyment and PA was obtained in one study, while another study found no association between these two variables. In adolescent samples, the relationship between these two variables was inconclusive (Sallis et al., 2000). Given a widespread assumption that enjoyment of PE is related to participation in physical activity, these discrepancies are worthy of further consideration.

In addition to the inconsistent relationship between enjoyment of PE and PA involvement, there is also evidence suggesting an age-related decline in student enjoyment of PE. For instance, in a longitudinal study of PE enjoyment among students in grades 4, 5, and 6, Prochaska, Sallis, Slymen, and McKenzie (2003) revealed a consistent decline in PE enjoyment from 4th to 6th grades. In an Australian study conducted among older students (years 8 and 10), the proportion of male students who enjoyed PE fell from 82% in year 8 to 71% in year 10. Among female students, the proportion fell from 70% in year 8 to 62% in year 10 (Booth et al., 1997). Parallel findings were also observed among Greek

students in grades 5, 7, and 10 (Digelidis & Papaioannou, 1999). In Digelidis and Papaioannou's (1999) study, a consistent decline in PE enjoyment was also revealed as students progressed to higher grades. Several researchers have argued that the decline in student enjoyment of PE can be attributed to a lack of understanding about the processes that underlie enjoyment in PE. These researchers have emphasized the need to further analyze these processes so that PE programs serve to maximize enjoyment (Griffin, Chandler, Sariscsany, 1993; Hashim, Grove, & Whipp, 2008; Ntoumanis, Pensgaard, Martin, & Pipe, 2004).

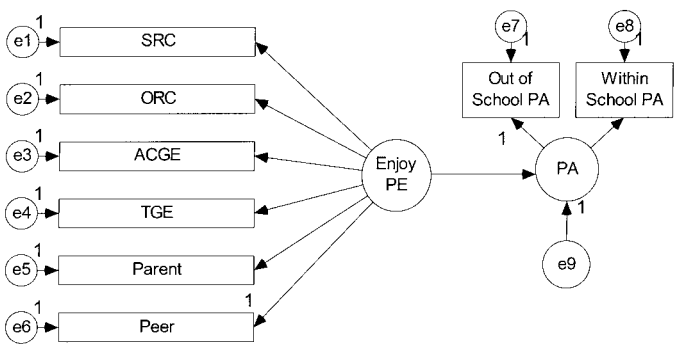
Youth Sport Enjoyment Framework

In youth sport research, Scanlan and Lewthwaite (1986) have proposed a two-dimensional model of enjoyment. This model contains four quadrants reflecting different combinations of enjoyment processes: *Achievement-Intrinsic, Achievement-Extrinsic, Nonachievement-Intrinsic,* and *Nonachievement-Extrinsic*. Scanlan and Lewthwaite (1986) define the Achievement-Intrinsic quadrant in terms of self-derived perceptions of competence and control (e.g., mastery and perceived ability). Achievement-Extrinsic, is defined as "perceptions of competence and control derived from other people such as positive social evaluation and recognition" (p. 33). The third quadrant, Nonachievement-Intrinsic, reflects the predictors of enjoyment associated with sensations inherent to physical activity and movement such as tension release, action, exhilaration and excitement. The last quadrant, Nonachievement-Extrinsic, reflects enjoyment derived from the "nonperformance aspects of sport, such as affiliating with peers and having positive interaction with adults" (Scanlan & Lewthwaite, 1986, p. 33).

Hashim et al. (2008) validated this framework using confirmatory factor analysis in PE settings. Their finding offer support for this model to be used in PE settings. Specifically, they identified six processes that correlated positively with enjoyment in PE. The processes were: *self-referent competency, other-referent competency, teacher-generated-excitement, activity-generated-excitement, peer-interaction,* and *parental encouragement*. They argued that an emphasis on these processes could potentially enhance student enjoyment of PE and lead to greater involvement in healthy activities outside the school setting.

In summary, adolescents can obtain benefits from engaging in recommended levels of PA. However, a large proportion of adolescents do not meet the recommended levels of PA involvement. Enjoyment of PE might play a vital role in promoting adolescent involvement in PA, but previous studies have obtained some discrepant findings. Therefore, the present study sought to examine a model of PE enjoyment and PA depicting relationships between PE delivery processes, PE enjoyment, and PA using structural equation modeling (Figure 1).

Figure 1: Hypothesized Relationships between PE Teaching Processes, Enjoyment, and Physical Activity.



Note: PA = Physical activity; Enjoy PE = PE Enjoyment; SRC = Self-referent competency; ORC = Other-referent competency; ACGE = Activity-generated excitement TGE = Teacher-generated excitement; Parent = Parental Encouragement; Peer = Peer Interaction.

Method

Participants

Students from grades 8, 9, and 10 (N = 203) from three public high schools participated in this study. The percentages of participants from years 8, 9, and 10 were 28.3%, 33.3%, and 38.4%, respectively. The sample contained 55.6% boys and 44.4% girls, with a mean age of 13.5 years (SD = 0.98).

Instruments

Data were collected using self-report instruments. In addition to demographic information, the questionnaire included measures of PE teaching processes, out-of-school PA, and within school PA. Descriptions of each of these measures are presented below.

Physical Education Teaching Processes Questionnaire. A 20-item questionnaire developed by Hashim et al. (2008) was used to measure six teaching processes previously shown to predict enjoyment in PE. The processes were *self-referent competency (SRC), other-referent competency (ORC), teacher-generated excitement (TGE), activity-generated excitement (AGE), peer interaction (PI), and parental encouragement (PE)*. In their initial analysis, Hashim et al. (2008) reported adequate validity and reliability for this questionnaire. Examples of the items used to assess each of the processes and their subscale alphas are: "My sport skills have improved from doing PE" (SRC; .84); "When doing PE activities, I am one of the best in my PE class" (ORC; .89); "My PE teacher gets me involved in PE activities" (TGE; .81); "I am enthusiastic about PE activities" (AGE; .89); "PE gives me a chance to spend time with my friends" (PI; .77); and "My parents encourage my involvement in physical education" (PE; .70).

Physical activity. A single-item measure was used to assess student physical activity outside of the school setting as well within school PA. Specifically, students were asked: "Outside school hours in this term, how much time did you spend doing physical activities that made you get out of breath or sweat?" The response options were (1) Never, (2) About ½ hour per week, (3) About 1 hour per week, (4) About 2-3 hours per week, (5) About 4-6 hours per week and (6) 7 or more hours per week. For within school PE, students were asked: "During your PE classes, how much time do you spend exercising hard enough to make you get out of breath or sweat". The response options were (a) Not much time at all, (b) About a quarter of the time, (c) about half of the time, (d) more than half of the time, (e) Almost all the time. These questions have been used widely in other studies, and support for the validity of this measure has been reported elsewhere (Booth, Okely, Chey, & Bauman, 2001).

Procedures and Analysis

Prior to data collection, permission to conduct the study was obtained from relevant authorities. Specifically, approval was obtained from the University Human Ethics Committee, the relevant State Department of Education and Training, the school Principals, and Heads of PE Departments (HOD) within the participating schools. Times and locations for questionnaire administration were then organized by the HODs within each school. Prior to collecting the data, informed consent forms were distributed and signed by students and their parents.

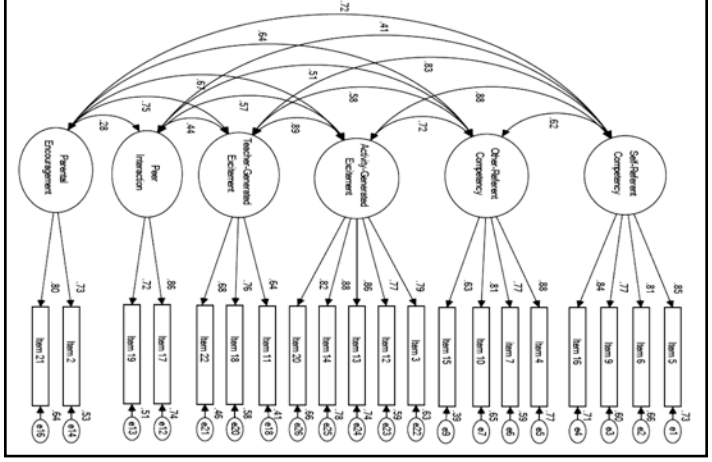
Participants were provided with standardized instructions during the data collection process. Specifically, students were told that they would be responding to a series of statements reflecting their opinion and experience with regard to PE and their participation in PA within PE as well as outside of the school setting. To minimize the effects of social desirability, students were advised that the survey was not a test, and that there were no right or wrong answers. It was also emphasized that honest responses would help the researchers to better understand their PE and PA experiences. Questionnaire completion took place in a classroom setting, and participants took an average of 10 minutes to complete the instrument.

Confirmatory factor analysis (CFA) model fit was evaluated using multiple fit indices. The selected indices were the chi-square statistic (χ^2), the root mean square residuals (RMR; Bentler, 1990), the comparative fit index (CFI; Bentler, 1990), and the root mean square error of approximation (RMSEA; Browne & Kudeck, 1993). A good model fit is indicated by values of .90 or higher for CFI. RMR values less than .05 reflect a close fit, while values of .1 or lower indicate reasonable fit for the RMR (Bentler, 1990). For the RMSEA, values of .05 or lower indicate close fit while values less than .08 indicate acceptable fit (Browne & Kudeck, 1993).

Results

Prior to the main analysis, a CFA and reliability estimates were conducted for the PE teaching processes questionnaire. Our findings closely mirrored the results reported by Hashim et al. (2008). Specifically, CFA revealed adequate goodness of fit (χ^2 = 277.4, df = 155, p < 001; RMR = .05; CFI = .95; RMSEA = .06). Moreover, significant unstandardized factor loadings were obtained for all of the items, and standardized factor loading ranged from .63 to .88. Detailed descriptions of standardized item loadings are presented in Figure 2. In addition, acceptable alpha coefficients were also obtained. Alpha coefficients for each of the subscales were as follows: SRC = .89, ORC = .86, TGE = .72, AGE = .91, PI = .74, PE = .74.

Figure 2. Detailed Descriptions of Standardized Regression Weights for the Measure of PE Teaching Processes



The subscale scores were then computed and examined for accuracy, missing values and distributional properties. Missing values were minimal, and mean substitutions were used where necessary. The frequency distribution revealed some departures from normality. However, no variable transformations were deemed necessary. The full-sample descriptive statistics are presented in Table 1.

The results of the Structural Equation Modeling revealed a close fit of the model (χ^2 = 46.21, df = 19, p < 001; RMR = .03; CFI = .97; RMSEA = .08). Significant unstandardized regression weights were obtained for all of the path loadings. In exception of two paths, all other standardized regression weights were above 0.5. Detailed descriptions of individual path loadings are presented in Table 2. Given an adequate fit of the hypothesized model, the model was further tested for invariance between male and female samples. The result of the invariance analysis revealed a nonsignificant chi-square difference between male and female (©χ^2 = 5.3, p = .51).

Table 1. ***Full-Sample Descriptive Statistics for the Primary Measures.***

	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Out of School PA	203	1.00	5.00	3.38	1.23	-.27	.17	-.78	.34
Within School PA	203	1.00	5.00	3.50	0.94	-.23	.17	.22	.34
SRC	203	1.00	5.00	3.87	0.89	-.94	.17	.85	.34
ORC	203	1.00	5.00	3.36	0.86	-.14	.17	-.11	.34
ACGE	203	1.00	5.00	3.78	0.92	-.76	.17	.47	.34
TGE	203	1.00	5.00	3.76	0.70	-.58	.17	1.12	.34
Parent	203	1.00	5.00	3.78	0.89	-.60	.17	.17	.34
Peer	203	1.00	5.00	3.86	0.85	-.85	.17	.93	.34

Table 2. ***Detailed Descriptions of Individual Path Loadings***

			Overall Model		Male Sample	Female Sample
			URW	SRW	URW	URW
PA	→	PE ENJ	1.02***	.99	0.66***	0.85***
PE ENJ	→	Parental Encouragement	1.34***	.72	1.00***	1.00***
PE ENJ	→	Peer Interaction	1.00	.56	0.75***	0.73***
PE ENJ	→	TGE	1.23***	.86	0.87***	1.04***
PE ENJ	→	ACGE	1.78***	.92	1.16***	1.55***
PE ENJ	→	ORC	1.49***	.83	1.00***	1.26***
PE ENJ	→	SRC	1.58***	.86	1.11***	1.26***
PA	→	Out of School	1.00	.40	1.00	1.00
PA	→	Within School	0.36**	.19	0.38	0.35

Note: *** < .001; ** < .01; URW = Unstandardized regression weight; SRW = Standardized regression weight; PA = Physical activity; PE Enj = PE Enjoyment; TGE = Teacher-generated excitement; ACGE = Activity-generated excitement; ORC = Other-referent competency; SRC = Self-referent competency

Detailed descriptions of individual path loadings for both samples are also presented in Table 2.

Discussion

Several researchers have argued that PE may provide an optimal environment for promoting PA to adolescents (e.g., Anderssen & Wold, 1992; Blanksby & Whipp, 2004). However, to ensure that PA is promoted effectively, it is vital that PE be perceived as enjoyable (Dishman et al., 2005; Fairclough, 2003). Indeed, several intervention studies that specifically targeted student enjoyment have been successful in increasing student levels of PA. The present findings are consistent with this view and more importantly, the results revealed a positive relationship between enjoyment of PE and adolescent PA participation. In a recent review of PE-based PA promotion programs, Wallhead and Buckworth (2004) indicated the importance of PE enjoyment in promoting adolescent PA. The present findings lend support for this notion and add to this literature by confirming the positive relationship between PE enjoyment and PA.

The present findings also revealed a number of teaching processes that could potentially foster student enjoyment of PE. These processes were *self-referent competency, other-referent competency, teacher-generated excitement, activity-generated excitement, peer interaction,* and *parental encouragement*. Consistent with Hashim et al. (2008), positive relationships were found between PE enjoyment and these teaching processes. Among these six processes, it was noted that activity generated excitement was the strongest predictor of PE enjoyment, a finding that further replicates results obtained by Hashim et al. (2008) and reinforces the notion that it is vital to provide students with enjoyable and challenging activities within school-based PE programs. Importantly, the activities provided should cater to the needs and preferences of all students. An unbalanced focus on certain types of activities could potentially compromise the experience for some groups of student. For instance, Fairclough (2003) noted different preferences for activities among boys and girls. Specifically, the researcher revealed that boys tended to favor team activities while girls favored individual activities. In another instance, Westerstahl, Barnekow-Bergkvist, and Jansson (2005) indicated that girls tended to choose lower-intensity activities than boys. In order to ensure that the activities are positively experienced by all students, the activities should: (1) match student needs and preferences; (2) be perceived as exciting and challenging by the students, and (3) offer a wide range of choices. These characteristics are similar to those described by Csikszentmihalyi (1975) as promoting flow experiences. In fact, findings obtained by Dishman et al. (2005) also offer partial support for the potential contributions of these processes to enjoyment of PE. Specifically, Dishman et al. (2005) employed a number of instructional strategies that include: (a) gender-separate activities; (b) a wider choice of activities; (c) activities that match student preferences (girls); (d) minimize the role of competition; and (e) small-group activities. They concluded that these strategies have the potential to increase student enjoyment of PE as well as their levels of PA (Dishman et al., 2005).

The findings of the present study also suggested that both mastery and performance competence are positively related to student PE enjoyment. This finding again was similar to results obtained by Hashim et al. (2008), who argued that a combined emphasis on both forms of competence may be useful in creating an optimal learning environment for students. Parallel findings were also observed in a study of an elementary PE running program conducted by Xiang, McBride, and Bruene (2004). They noted that students with multiple goal approaches were higher in enjoyment as well as performance than students with any singular orientation.

The researchers also noted that the behaviors of social agents (parents, peers, and teachers) were positively correlated with student enjoyment of PE. These findings provide support for Hashim et al.'s (2008) contention that PE classes should be structured in a way that enhances interaction between students. Doing so will undoubtedly enhance student enjoyment and create an environment conducive to their learning. The findings also strengthen the notion that parental involvement is imperative to student enjoyment of PE. Because a lack of involvement by parents is sometimes due to misunderstanding of the value of PE (Sheehy, 2006), conscious attempts should be made to make the potential benefits known. Moreover, given that informed parents are more likely to be involved with their children's PE, regular and structured communications could be used to promote student enjoyment of PE (Wilkinson & Schneck, 2003).

In summary, the findings support the notion that PE enjoyment is important in promoting adolescent PA. To ensure that PE is perceived as enjoyable, the researchers believe that certain teaching processes should be considered when structuring the PE program. More specifically, the program should: (1) focus on challenging, exciting, and group-specific activities; (2) foster positive interaction and involvement between the students and a variety of social agents (e.g., teachers, parents, peers); and (3) provide opportunities for the demonstration of both self- and other-referent competence.

Although the findings offer some practical values, it must be acknowledged that the measure of PA was restricted to an estimate of PA duration. Therefore, it is necessary to replicate the findings

using a more comprehensive measure of PA. Specifically, it would be desirable to obtain information about frequency, intensity, and duration in order to gain a more complete understanding of the relationship between PE enjoyment and adolescent PA. Moreover, the finding represents *general* processes that students perceived to be associated with PE enjoyment. In the present study, *activity-generated-excitement* emerged as the strongest predictor of enjoyment. This finding, without doubt, reinforces the importance of providing exciting and stimulating activities for students in school-based PE programs. However, given its nature, the finding does not offer any information as to what could be construed as exciting and stimulating activities. Given that activity-generated excitement could be influenced by a number of factors, such as gender and skills, it would be desirable to identify the specific types of activity that would be considered "exciting" by specific groups of students.

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Teaching Finance in Sport Management Programs: An Analysis of Course Content Delivery

by Michael J. Mondello, Damon P. S. Andrew, Samuel Y. Todd, Daniel F. Mahony

Abstract

As the discipline of sport management continues to encompass an increasing array of concentrations, discussions about required core curricular components in concentrations such as sport finance have become more important. However, there appears to be little consensus on how a sport finance course should be delivered. This study's purpose was to examine syllabi from sport management programs across the United States to determine how sport finance content is being delivered. Analysis of 47 syllabi indicated that instructors favored the use of article reviews, case studies, and corporate profile analyses as assignments, and most preferred using one of two textbooks.

Teaching Finance in Sport Management Programs: An Analysis of Course Content Delivery

According to Stier (2001), there were 202 sport management programs worldwide at the beginning of the new millennium. Among these programs, 167 were based in the United States. In 2006, the North American Society for Sport Management (NASSM) website listed approximately 250 programs worldwide with 210 programs based in the United States (www.nassm.com). As the number of sport management programs increases, it is important for colleges and universities to offer the finest and most appropriate sport management curriculums to meet complex and varied needs of the sports industry. In response to legitimate concerns over the quality and effectiveness of sport management programs, standards were created in 1993 through a joint effort between the National Association for Sport and Physical Education (NASPE) and the North American Society for Sport Management (NASSM) (Kelley, Beitel, DeSensi, & Blanton, 1994). The NASPE-NASSM program approval standards require undergraduate programs to offer course content related to sport in the following ten areas (Sport Management Program Review Council, 2000):

1. Socio-cultural dimensions
2. Management and leadership in sport
3. Ethics in sport management
4. Sport marketing
5. Communication in sport
6. Budget and finance in sport
7. Legal aspects of sport
8. Sport economics
9. Governance in sport
10. Field experience in sport management.

Although sport management programs are not required to dedicate separate courses for each topical area, the content must be covered somewhere within the curriculum. The course work designated by NASPE-NASSM is focused on preparing students for a career in one of the many areas in the sport industry. However, it is important to note that ideally while students are being prepared for a career in the sport industry, the goal of entering the sport management field might not materialize. Moreover, even if one does begin his/her career in sport management, he/she might decide later to pursue some other line of work. In either case, the course content prescribed by NASPE-NASSM is sufficiently broad enough that one should be prepared to assume positions in a variety of other related fields.

Sport finance is one of several important subject areas typically included in sport management curricula (Kelley, Beitel, DeSensi, & Blanton, 1994). Practitioners have suggested sport finance is one of six fundamental content areas that all sport managers need to understand (Kelley, Beitel, DeSensi, & Blanton, 1994). Unfortunately, similar to many areas in the field of sport management, sport finance appears to lack a rigorously developed body of knowledge. Since actual course content in sport finance courses is likely governed by a number of factors including NASPE-NASSM guidelines, the course textbook, and the expertise of the instructor a study of current practices in sport management programs would serve as a baseline for evaluating curricular content, pedagogies, and student evaluation criteria. The purpose of this study was, therefore, to examine syllabi from sport finance classes offered in the United States in an attempt to determine how sport finance content is being delivered.

Literature Review

Content analysis is a research technique frequently used for examining information or content in written or symbolic material. One of the revealing ways to determine the foci of a body of knowledge and realize what academic scholars truly consider important is to examine their published research (Mondello & Pedersen, 2003). Taking a critical examination of the literature in the field can help determine what is on the cutting edge, considered valuable, or esteemed by academicians. This is why the use of content analysis is critical for sport management as a discipline.

Content analysis has been incorporated in past sport management research to gain general information about the content of particular courses. For example, Li and Cotten (1996) conducted a content analysis of introductory sport management classes to answer the following questions:

1. What are the purposes of the introductory sport management course?
2. What textbooks are used by sport management educators who are currently teaching the introductory course?
3. What topics are included in the introductory course? and
4. What topics do sport management educators' view as most important to be included in such a course?

The findings of this study provided educators with input from other sport management faculty regarding text selection, course

purpose, and topic coverage for the introductory course. Most respondents agreed the purpose of an introductory course was to familiarize the student with the field of sport management, including the basic concepts, issues, and theoretical foundations of sport management, and the types of jobs and career opportunities available (Li & Cotten, 1996).

The only other course content study in the field of sport management focused on topics covered in sport law and risk management courses (Young, 2001). In an attempt to meet the sport management curricula standards established by NASPE-NASSM, it is important for graduate level legal aspect courses to build upon the foundation established by undergraduate legal courses. The purpose of the Young study was to determine the current content of law and risk management courses in sport management curricula at the undergraduate and graduate levels. As noted by Young (2001), one finding was the similarity in content of the legal aspects courses at the undergraduate and graduate levels. By revealing the current status of the law and risk management courses in sport management curricula, the findings of this study provide a platform for further discussion and study of pedagogical issues associated with a legal aspect course. While the two aforementioned studies focuses primarily on the content of the respective courses, from an educational perspective it is also beneficial to explore how that content is being delivered.

College Instructional Strategies

According to Ralph (1998), there are two basic motivational approaches that effective instructors can apply in the teaching/learning process. First, teacher-centered methods including lively lectures and distinctive demonstrations can be used. Second, student-centered instructional methods such as small-group activities, cooperative learning opportunities, discovery/inquiry learning, and group debates can be effective. In addition, Meyers and Jones (1993) explained that active learning consists of basic elements (talking, listening, writing, reading, and reflecting), learning strategies (small groups, cooperative work, case studies, simulations, discussions, problem solving, and journal writing), and teaching resources (reading, homework assignments, guest speakers, teaching technology, and commercial television).

The Use of Lectures in Economics

Benzing and Christ (1997) compared the application of different teaching methods among undergraduate economics instructors. The results indicated lectures supported with blackboards, textbooks, and discussions were the predominant teaching methods utilized in the undergraduate classroom. Although a few respondents revealed frequent use of overhead transparencies, videos, workbooks, slides, or computer simulations, the respondents indicated "they are using more class discussion, multimedia technology, and student participatory techniques today than they were five years ago" (Benzing & Christ, 1997, p. 187). Thus, some economics instructors have implemented active instruction techniques associated with learning, and have subsequently begun to change their teaching methods.

Class size is one challenge facing instructors attempting to implement different teaching methods to enhance and motivate students' learning. Specifically, "In larger classes, faculty members typically require less written work and spend more time lecturing and less in discussion" (McKeachie, 1990, p. 190). One study surveyed one hundred twenty two different faculty teaching introductory economics classes at fifty three different colleges and universities. The results revealed that lecture time increased proportionally with the size of the class taught (Siegfried, Philip, Stinar, & Zhang, 1996). Specifically, Siegfried et al. (1996) found:

> Instructors of 33 classes with fewer than 25 students reported spending 69 percent of their time lecturing; lecture time increased to 75 percent for class sizes ranging from 25 to 74 students, and rose to about 78 percent for classes enrolling more than 80 students (p. 187).

In addition, Benzing and Christ's study (1997) reported that 48 percent of the respondents indicated they "regularly teach classes with over 40 students, and of that group, only 29 percent use small-group activities in these classes (p. 184). Respondents expressed they were discouraged by larger class sizes and believed student learning was enhanced in smaller classes.

Creating Interactive Activities

Simply inserting an interactive activity into traditional lectures can involve students in learning activities beyond writing notes and listening to lectures. For example, Johnstone and Frederick (1976) revealed students lost their ability to concentrate 10-18 minutes into a lecture and their focus progressively deteriorated as time passed. Furthermore, they suggested instructors should periodically involve students in various activities appropriate to the lecture content. Hence, instructors can supplement their 10-20 minute presentation with episodic oral question/answering sessions, short discussion periods, personal experiences, pop quizzes, relevant news, or humor (Ralph, 1998). In addition to stimulating learning, these activities can maintain students' concentration, arouse students' interest, enhance students' information recollection, and help students understand new material.

Commercial or Educational Television: Films or Videotapes

Videotapes and DVDs are additional teaching resources providing entertaining mediums of teaching that can potentially increase learners' attention, raise various issues, and stimulate more productive discussions in class. For example, video segments from programs including *HBO's Real Sports* and *ESPN's Outside the Lines* are excellent resources connecting theoretical classroom material with real world events. Similar to other instructional methods, there are four strategies outlined for using films or videotapes for educational purposes. First, instructors may explain new terms or concepts before showing the tape and subsequently develop a list of potential questions students should be able to answer after viewing the program. Second, in order to highlight key issues or comments, the videotape can be paused and reviewed accordingly. Third, conducting a follow-up activity, such as small group discussions about the tape's content can be highly informative. Finally, by including questions concerning the content of the tape on tests, instructors give legitimacy to the information presented in this medium (Davis, 1993).

Cooperative/Collaborative Learning

Collaboration is the cornerstone of the adult learning process. The process of teaching adults must be a democratic and collaborative endeavor where facilitator and learners are engaged in a mutual act of challenge, critical reflection, sharing, support, and risk-taking. Accordingly, collaborative learning is a form of active learning in which small group interaction within the classroom helps students gain knowledge or resolve problems through peer instruction and teamwork that can generate new ideas and solutions (Johnson & Johnson, 1991).

Student projects are one of the main vehicles for integrating active learning methods into the lecture. Specifically, instructors may use collaborative learning outside of class (Moore, 1998) or cooperative learning in small units/groups (Maier & Keenan, 1994). Rishi (1998) employed diversity issues (race, gender, and class) as starting points for these group activities in teaching an economics class. All of these studies reported positive outcomes from cooperative learning activities. As Johnson and Johnson (1975) revealed, cooperative learning methods created a positive effect on student learning by designing a dynamic learning environment where students are more inclined to question and discuss concepts.

Case Studies

The value of case studies is demonstrated by linking theory and practice. Specifically, the case method has been traditionally integrated into legal and medical education by successfully demonstrating fundamental principles, specific content, and methods of analysis (Boehrer & Linsky, 1990). Ultimately, the success of the case method as a meaningful learning experience is directly related to student preparation and involvement. In a well-designed case study discussion, students learn from each other by pronouncing ideas and then having their statements questioned, challenged, and directed back to them, so they can deliberate on what they hear/think and refine their response (Boehrer & Linsky, 1990). Overall, the purposes of case study methods are to: 1) foster critical thinking; 2) encourage students' responsibilities for learning; 3) transfer information, concepts, and techniques; 4) develop a command of a body of material; 5) blend affective and cognitive learning; 6) enliven the classroom dynamic; 7) develop collaboration skills; and 8) teach questioning and self-directed learning (Boehrer & Linsky, 1990). Case studies could be an in-class discussion activity or assigned as group projects requiring work outside of the classroom. Collectively, these collaborative efforts can be organized so students are assigned into groups of 3-4 individuals, and each group is required to provide a written summary and prepare an oral presentation on the case. Both the length of the paper and group presentation can be tailored to meet the needs of both undergraduate and graduate classes. The pedagogic reasons for such assignments may involve increasing the students' understanding of a particular financial concept, providing students with some analytical experience, enhancing their ability for critical thinking, and/or improving their written and oral communication skills.

Internet and Computer-Assisted Teaching Methods

Historically, active learning has included faculty-to-student interaction, student-to-student interaction, and student-to-content interaction. Academicians now agree educational interaction must be expanded to include student-to-interface activities (Hillman, Willis, & Gunawardena, 1994). Internet resources offer interaction complementing traditional classroom instruction. As academia evolves into an age of information technology, educators in higher education have made an effort to provide a variety of resources to develop computer-aided and Internet-based instruction on campus.

For example, a recent research project measured computer usage in higher education. The data revealed nearly 59 percent of college and university courses in the year 2000 used e-mail (up from 54 percent on 1994), and 43 percent used Web resources for course material (up from 39 percent in 1999) (Campus Computing Project, 2000). In addition, 56 percent of the respondents indicated their institutions offered one or more full college courses online through the Web (up from 47 percent in 1999), and 15 percent reported using some type of web-based course management tool in their online offerings.

These computer-aided and Internet-based instructional methods provide students with alternative ways to learn and interact with course content. Recent research demonstrated that web-based course management tools allowed students easy access to course materials and provided opportunities for interaction using communication tools, such as virtual chatting, e-mail, and discussion boards (Boeglin, Campbell, & Picard, 1999; Maslowski, Visscher, Collis & Bloemen, 2000). Moreover, the traditional classroom lecture is insufficient to hold students' interest levels and motivate their learning. The development of commercial licensed packages, such as WebCT (Web Course Tool) or Blackboard's CourseInfo and presentation packages such as Microsoft PowerPoint, have made the delivery of course material and content interesting and exciting to students.

Another educational tool for finance courses, the original stock market simulation, was initially introduced in 1977 by the Securities Industry Foundation for Economic Education, an affiliate of the Securities Industry Association (Altmyer, 2000). There are two significant factors ultimately determining the level of student success. The first factor related to how well the student understands the concepts and rules of the game. The second factor is the student's basic ability to analyze a company's financial statements (Altmyer, 2000). Since the Securities Exchange Act of 1934, public companies are required by law to report their financial information each quarter to the public and the SEC (Securities and Exchange Commission). These financial statements can be retrieved at the SEC homepage (http://www.sec.gov). Typically, the game is played over a 12-week period during the semester. At the beginning of the semester, instructors should introduce the fundamentals of investing, assign students a partner, have students turn in a brief paper justifying their initial holdings, and answer any questions that may provide additional clarity of the assignment. By collaborating with a partner, students share the responsibility of the portfolio's performance and augment their communication, collaboration, and teamwork skills.

Discussion boards are another instructional method providing an excellent learning environment for students. Instructors can periodically post challenging questions or current issues

to discussion boards and require students to respond directly or even pose additional questions. In order to have more interactive discussions, instructors may require each student to respond to at least one comment forwarded by one of their classmates. Traditionally, only a small number of students will volunteer an answer or question in front of the class, while the majority of students typically remain silent. However, discussion boards provide students with an alternative method of interaction and potentially generate feedback from several students who would have remained non-participatory in the more traditional classroom setting. This technique allows each student an opportunity to contribute his/her ideas and efforts to the class and significantly reduces the probability of a single student dominating a discussion. McKeachie (1997) proclaimed there is "better student retention, thinking, and motivational effects when students are more actively involved in talking, writing, and doing" (p. 1219).

Furthermore, every message posted is recorded so instructors can collect the messages and analyze the posting frequency of each student. For example, Hein and Stalcup (2001) integrated webpages and threaded discussions into an undergraduate finance course. They discovered that several students only interested in their grade tended to post low quality comments or questions. To help alleviate this problem, they suggested that clear delineations should be included in the course syllabus. For example, posing a question or replying to messages must be written clearly, relevant to the course discussion, and stimulating to the overall desire to learn.

Collectively, while several instructional options provide college teachers with a variety of choices, each instructor should carefully tailor their curriculum to include assignments which maximize student learning. Furthermore, whichever projects are included should be designed for the appropriate level of instruction.

Method

Classes in sport management programs with significant finance content were identified via a manual search of each university website of every post-secondary sport management program listed on the www.NASSM.com website. Collectively, 62 undergraduate courses and 39 graduate courses with sport finance content met the minimum criteria for inclusion in the study. Twenty of these programs offered both an undergraduate class in sport finance and a graduate course in sport finance resulting in a study population of 81 different schools. When possible, the instructor of the particular finance course was contacted via e-mail and asked to remit a course syllabus and class itinerary. When the instructors of the courses were not listed on the university website, the respective department chairs were contacted and asked to provide the name and contact information of the instructor, who was subsequently contacted directly via e-mail as described above. A contact for was unable to be located for 15 schools. In some cases, the course of interest was last taught by an adjunct faculty member, and the contact information for the instructor was not available; and in other cases, contacts for academic units did not respond to emails. In total, 65 e-mails were sent to instructors and 41 instructors replied for a response rate of 65%. A profile of the sport management programs that provided syllabi for this study is presented in Table 1. The data contain universities or colleges from 22 states overall. The Sports Business Journal provided information concerning the size of each sport management program. The average size for undergraduate programs was 126 students; the average size for graduate programs was 38 students. The Academic units in which these programs were housed varied dramatically, making it difficult to summarize. For instance, some programs were organized in departments (by various combinations of names), some were in schools (by various names), and some were organized only in colleges (by various names).

Table 1. ***Sport Management Program and Sport Finance Classes Statistics***

	Frequency	
	Undergrad	Grad
Sport Management Programs		
US	168	119
Canada	9	8
Europe	8	12
Australia	6	7
New Zealand	4	3
India	0	1
Sport Finance Courses[1]	49	30
Blended Courses[2]	13	9

Note. [1]=Courses dedicated to sport finance only
[2]=Courses that are a blend between sport finance and economics/ marketing/facilities/business

The following research questions were explored:

1. Of the sport management programs, how many teach an exclusive course in sport finance versus a blended course with another topic?
2. What textbooks are used by professors in the delivery of sport finance classes?
3. What internet activities are utilized in the delivery of sport finance classes?
4. What projects and/or assignments are being used by professors in the delivery of sport finance classes?

Results and Discussion

In total, 47 syllabi were collected from finance classes taught in sport management programs. Table 1 includes the breakdown of sport management programs, exclusive sport finance classes, and courses combining finance material with other subjects. Table 2 includes a list of texts and resources identified from the course syllabi, while Table 3 details the assignments and projects utilized.

In research question 1, sport finance courses were compared on the basis of whether they contained exclusive sport finance content or whether the sport finance content was blended with other subjects. The exploration of university web pages revealed that 79 courses were taught with only sport finance content (49 of these were undergraduate courses), and 22 courses were taught by blending sport finance content with content from other areas (13 of these were undergraduate courses). Of these 22 courses with blended content, ten were blended with economics content, eight were blended with business management content, and the others were combined with facility management and marketing.

In research question 2, the most popular textbooks utilized by

Table 2. ***Texts/Resources Used in Sport Finance Classes***

		Frequency
1	Howard & Crompton, *Financing Sport* (2004)	18
2	Fried, Shapiro & Deschriver, *Findamentals of Sport Finance* (2003)	13
4	*Street & Smith's Sport Business Journal*	13
3	Sawyer, Hypes & Hypes, *Financing the Sport Enterprise* (2004)	3
5	Brayley & McLean, *Managing Financial Resources in Sport and Leisure Service Orgs*. (1999)	2
7	Fort, *Sports Economics* (2006)	2
6	Groppelli & Nikbakht, *Finance* (2000)	1
8	Foster, Greyser & Walsh, *The Business of Sports: Texts & Cases on Strat. & Mgt*. (2006)	1

Note. 5 instructors utilized a course reading packet:
2 Syllabi did not indicate which texts are used

Table 3. ***Assignments/Projects Summary***

	Frequency		
Assignment/Project	Undergrad	Grad	Total
Article Reviews	8	4	12
Corporate Profile/Analysis	11	1	12
Case Studies	8	4	12
Stock Market Analysis	6	3	9
Budgeting Project	5	3	8
Business/Financial Planning	5	2	7
Sponsorship Proposal/Contracts	3	3	6
Feasibility Studies	5		5
Current Financial Issues Presentations	3	2	5
Grant Writing	3	1	4
New Facility Financing	1	2	3
SBJ Essays	1	1	2
Collegiate Athletics Revenues/Expenses	1		1

Note: Data collected from a content analysis of 47 sport finance syllabi

instructors for sport finance classes were identified. As seen in Table 2, most instructors preferred to use Howard and Crompton (2004) or Fried, Shapiro, and DeSchriver (2003). Additionally, 28% of respondents (13/47) required students to purchase the Sports Business Journal as a supplement to the main text.

With research question 3, internet aids to instruction that were being utilized in the delivery of sport finance classes were examined. Some type of stock market game was utilized by 19% of respondents (9/47). Online stock market simulations allow students to enhance their understanding of how the stock market functions, how securities are traded, and the concept of diversification. Currently, several simulations are readily available such as The Stock Market Game (SGM) (http://www.smgww.org) and StocksQuest, a global stock market game (http://stocksquest.thinkquest.org/C001759/). Instructors need to create a number of guidelines to facilitate the student's experience and introduce the students to several fundamental investment strategies to enhance this experience.

Research question 4 examined the other types of projects and assignments currently incorporated into the delivery of sport finance classes. Case studies, corporate profiles, article reviews, and budgeting projects were the most frequently utilized projects and assignments.

Case Studies

Twenty six percent of the respondents (12/47) incorporated some element of case analysis into the student's grade. Most syllabi did not contain information regarding the title of the case or how it was located, but currently, there are several sport finance case study resources available for classroom instruction. One excellent instructional resource can be accessed through the *Harvard Business School Website* at http://www.hbsp.com. Electronically, instructors can obtain a username and password enabling them to access articles and sport-specific cases for instructional use. In addition to the cases themselves, teaching notes are available to help supplement a number of the cases. Financial cases involving the operation of business organizations outside of sport can also be successfully utilized to present students with several key issues allowing them to propose a number of viable alternatives.

Corporate Profiles/Reports

Twenty six percent of the respondents required students to research a sport company using the information presented in the class. Depending on the course goals and objectives, this research could include information on the revenues, expenses, annual reports, stock prices, analysis and forecasting of the future financial condition of the firm, and recent publicity or news releases. Most professors required students to present this information in a written format or final oral presentation at the end of the semester.

Article Reviews from Journals

Twenty six percent of the respondents required students to read, analyze, and summarize multiple articles addressing relevant course topics. Instructors varied in their treatment of this assignment: four instructors outlined specific articles to review, five instructors allowed students to randomly choose articles, and three instructors specified a particular list of acceptable journals or internet material.

Budgeting Projects

Seventeen percent (8/47) of the respondents assigned a budget case to each student to be analyzed outside of class. Often, professors prohibited students from generating any additional capital in order to balance the budget, but advised them to rely exclusively on the existing figures to balance the budget. Some of the popular examples utilized in the syllabi we found were related to interscholastic athletics or intercollegiate athletics. Several instructors utilized Dixon (2003) as a case study designed to be a budgeting project.

A number of noteworthy findings warrant mentioning. First, we found sport finance courses (dedicated to sport finance or blended with other areas) in less than half of the existing sport management programs. This result raises some significant concerns. The heavy focus on finance in undergraduate and particularly graduate business programs would suggest that an understanding of finance

concepts and principles is important for future success in business organizations. In addition, the topic of finance is complex and one of the more difficult areas for students to understand. If indeed this is all true, the lack of sport finance courses would appear to suggest students are not being adequately prepared for their future careers. However, it is possible that programs have found other means for delivering this material (e.g., courses outside of the department, with supplements in some of the general sport management courses). However, more research is needed to determine what is actually happening at these programs.

Second, there appear to be only two textbooks used by more than a couple of programs. While this may be sufficient given the number of courses being offered in sport finance, this does mean that instructors have few choices and must depend on these authors to continually update their books. However, it does appear that many of the instructors have found that the *Sports Business Journal* is a good way to supplement the textbook and provide students with the most up-to-date information.

Third, instructors of sport finance courses appear to use a wide range of projects incorporating many of the strategies suggested in the beginning of this paper. For example, internet projects, case studies, and cooperative/collaborative learning appear to be fairly common. Moreover, because the number of assignments generated far exceeded the number of syllabi examined, it is clear that many instructors were using multiple assignments beyond the traditional tests. However, it was not clear based on the results of this study whether all of the suggested strategies were being used. It was difficult to determine based on an examination of the syllabi how often instructors were using interactive activities in class, films or videotapes, or threaded discussions via online course programs. Again, future research should consider the breakdown of class time by asking instructors to report how much time is spent on lecturing as opposed to other instructional mediums.

Conclusions and Future Recommendations

Overall, the current study provides instructors with some clear examples of what other instructors are using for textbooks and class assignments in sport finance. While the options for textbooks are more limited, this current study offers a number of suggestions for course assignments. However, more work is needed to better understand how sport finance content is delivered. Future research is needed to determine the degree to which the strategies being used and projects assigned increase student learning. In other words, what techniques are most successful in increasing student learning? Furthermore, an analysis of the content specific to sport finance courses would also be useful to sport finance educators. Such an analysis would likely require a specific survey to query sport finance instructors regarding their course content and the relative emphasis of each component, as reliance upon content analysis of course syllabi may provide an incomplete picture of the state of the field (e.g., some instructors do not include course content in their syllabi, and those who do often do not indicate the relative emphasis of each subject to be covered). With the increasing focus on student learning outcome assessment across the country, sport management faculty will soon need to be able to answer such questions, and future research examining this issue could be provide useful information for faculty.

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The Relationship between the Task and Ego Orientations And Coping Strategies Among Universities Athletes

by Mohd Sofian Omar-Fauzee, Lee Hoi See, Soh Kim Geok, and Rozita Abd.Latif

Abstract

The present study investigated the relationship between goal orientations (task and ego) and psychological coping skills among University's athletes. Participants were 85 athletes, both male (n= 35) and female (n = 50) aged between 19 and 28 years old who represented one of the largest university in the central of Malaysia in various sports competitions. Participants completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ) to measure goal orientation while psychological coping skills were measured using Athletic Coping Skills Inventory (ACSI) – 28. results showed that there is a moderate relationship between goal orientations and psychological coping skills, with ego orientation showing a stronger relationship than task orientation. Moreover, the results showed that the athletes have both high task (mean=3.97) and fairly high ego orientations (mean=3.71), and there was no significant differences between males and females in goal orientations (p> .05). The results found that ego orientation was significantly correlated with all the six coping skills (p< .01) but task orientation was significantly correlated with only five coping skills (p< .01) as freedom from worry was not significantly correlated with task orientation. The results on the relationship between gender and psychological coping skills found that females were more likely to use concentration and peaking under pressure, whereas male athletes used freedom from worry as their coping responses. The study also found that there is a significant relationship between the athlete's goal orientation and his/her psychological coping skills.

The pressure to perform at high levels in competitive sports has increased in recent years with all the media attention given to sport and the potential earnings available through success, and people who don't cope effectively with the pressure of competitive sport may experience not only a decrease in their ability to perform, but also mental distress and even physical illness (Weinberg & Gould; 2007). Different sports have different sources of stress, and consequently participants require special strategies to cope successfully in their particular field (Kristiansen, Roberts & Abrahamsen, 2007).

In recent years, there has been an increasing interest to study the ability of athletes to cope with stress, especially in competitive sport environments (Hatzigeorgiadis, 2006; Kristiansen, Roberts, & Abrahamsen, 2007; Nicholls & Polman, 2007; Pensgaard, & Roberts, 2003). Lazarus and Folkman (1984) have defined coping as a dynamic process of cognitive and behavioral attempts to deal with internal or external demands which are experienced as taxing or exceeding the individual's resources. Thus, coping can be viewed as an active response comprising both cognitive and behavioral efforts to deal with stress. Weinberg and Gould (2007) has noted that psychological skills (e.g. mental preparation, mental skills, use of routines) are important to effectively cope with psychological (e.g. anxiety, loss of concentration, lack of confidence) and non psychological (e.g., poor housing, injury) stressors. However, a variable that has been found to affect the perception of stress, and which influences the coping strategies, is the achievement goal of the athlete (Pensgaard & Roberts, 2003). Indeed, achievement goal orientation theory has been one of the key motivational theories that have been successfully employed in both education and sport to explain behavior (Nicholls, 1984).

Achievement goal theory assumes that the individual is an intentional, goal directed organism that strives to demonstrate ability or competence in an achievement setting (Kristiansen, Roberts & Abrahamsen, 2007). There are two specific achievement goals identified by achievement goal theorists such as Nicholls (1984), namely task and ego goal orientation. According to Pensgaard and Roberts (2003), when an athlete is task-oriented or generally associated with desirable or adaptive achievement behavior, his or her primary goal will be to demonstrate mastery of the task in hand. That individual's perceptions of ability would be typically self-referenced; that is there would be an interest in learning and self-development, and their focus would on improving and working hard or putting forth maximum effort to the task with little or no concern for the outcome. Previous studies within sport contexts have found that task orientation is a positive predictor of pro-social behaviors (Kavussanu, 2006). For example, Malete's (2006) research found that task orientation and perceived sport ability were important predictors of Botswana youth participation in sports, while Papaionnou, Bebetsos, Theodorakis, Christodoulidis and Kouli (2006) identified that task orientation, intrinsic motivation and perceived athletic competence predicted sport and exercise participation 7 to 14 months later. With specific regard to competitiveness, Pensgaard and Roberts (2003) found that when an athlete is ego oriented, he/she adopts a normative conception of ability and is interested in demonstrating the superiority of his or her ability to others, leading them to conclude that winning and beating others is the major focus of an ego-oriented athlete. In a study by Sit and Lidner (2004), the researchers have reported that high ego orientated youths are likely to be motivated by status only and as such, they reasoned that high ego-oriented youths employed an other-referenced perception of ability, as they desire to outperform others in the comparison process so as to demonstrate their superior ability and attain social standing or mutual recognition.

The Research Problems

Pensgaard and Roberts (2003) note that some researchers suggest that there is a relationship between achievement goals and responses to stress in sports. They also state that athletes, who are predominantly task-oriented and have internal criteria

of determining success, may be better equipped to cope with stress, while athletes who are ego-oriented and have external criteria of success, such as outperforming other competitors, may be especially vulnerable to perceived stress and suffer possible performance decrements. Studies on the relationship between an athlete's achievement goals and responses to stress have revealed that task oriented athletes tend to cope better, have higher levels of self-efficacy and use more problem focused coping strategies; ego-oriented athletes tend to use emotion-focused coping (Ntoumanis, Biddle & Haddock, 1999; Cumming and Hall; 2004; Kristiansen, Roberts, & Abrahamsen, 2007). The high task/low ego athletes employ more active coping and social emotional support strategies than high task/high ego and low task/low ego athletes (Pensgaard and Roberts, 2003). Therefore, an understanding of the athletes' achievement goal orientation and their mental coping skills may assist the coach to develop proper intervention programs to improve mental coping skills, which may ultimately lead to an enhancement of performance. However, the above research findings are lacking in Malaysia and such research will help to understand more about how coping strategies plays their roles in motivating athletes especially with the university athletes.

Purpose of the study

In the light of the above findings based on the achievement goal orientation framework and past research, this study aims to investigate the relationship between achievement goal orientations and the psychological coping skills of University's athletes in one of the largest universities in central Malaysia.

Methodology

Sample

A total of 85 university athletes (35 males, 50 females) who willing to participate, representing a wide variety of sports (archery, athletics, futsal, handball, netball and rugby) participated in this study. Goal orientations and psychological coping skills were assessed using questionnaires. The age range of the respondents was from 19 to 28 years (M = 21.66, SD = 1.63). The ethnicity of the sample was Malay Malaysians (84.7%); Chinese Malaysians (5.9%) and Indian Malaysians (2.4%), and others (7.1%). The sample of Malay Malaysian is high due to higher percentage of Malay athletes participate in the particular sports(archery, athletics, futsal, handball, netball and rugby) as compare to other ethnic. These athletes were all from university teams and had competed in one or more competitions in the National Inter-Varsity Competitions and/or other events and competitions organized in the country.

Procedure

Quantitative data were used to examine possible associations of task and ego orientations and the psychological coping skills of athletes who were participants in this study. A self-report questionnaire was given to the officer in-charge of the various sports events and was distributed to the selected athletes. The researcher explained the purpose and information on the completion of the questionnaire to the officer in-charge to ensure that the athletes completed the questionnaires as required. The officer in-charge then passed the questionnaires on to the participants to complete when they attended training sessions. The completed questionnaires were collected back after one week from the officer in-charge.

Instrumentation

The questionnaire was divided into three parts, namely: demographic variables; the Task and Ego Orientation in the Sports Questionnaire; and the athletic coping skills inventory – 28.

Demographic variables

The questionnaire also contained items that determined the age, gender and ethnicity of each of the respondents.

Task and Ego Orientation in Sport Questionnaire (TEOSQ)

The Task and Ego Orientation in Sport Questionnaire (TEOSQ) was used to examine an individual's task and ego orientation in the academic and sport fields (Duda & Nicholls, 1992). The TEOSQ has 13 items which comprise two subscale scores. Each item is preceded by the phrase, "I feel most successful in sport when……", answered on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Seven items on the TEOSQ reflected a task involvement and six items reflected an ego involvement. The composite score for each subscale was used as the unit of measurement. The range for each participant's degree of task and ego orientation in sports was from 1 (low) to 5 (high). The subscales were found to be internally consistent with alpha levels for task orientation .79 and .89 (Cumming, & Hall, 2004) study and from .79 to .87 respectively (Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005). Therefore, it is shown that the TEOSQ is valid when used within a sports context.

Athletic Coping Skills Inventory – 28

The Athletic Coping Skills Inventory – 28 (ACSI-28; Smith, Schultz, Smoll, & Placek, 1995) was used to assess the psychological coping skills for each athlete. The ACSI-28 is a self-report questionnaire developed using exploratory and confirmatory factor analysis. The instrument consisted of a 28-item scale measuring seven classes of sport-specific psychological coping skills including coping with adversity, peaking under pressure, goal setting and mental preparation, concentration; freedom from worry, confidence and achievement motivation, and coachability (Figure 1). Individuals were asked to respond to each statement by indicating how often they experienced different situations using a 4 point scale (e.g., I put a lot of pressure on myself by worrying about how I will perform", 0 = almost never to 3 = almost always). Each subscale consisted of four items that were averaged to provide a subscale range of 0 to 3. Additionally, the scales were then summed to yield a personal coping resource score. The subscales were found to be internally consistent with alpha levels ranging from .62 to .78 and a total (personal coping resources) scale alpha of .86 as reported in Smith, Schutz, Smoll & Ptacek (1995).

Analysis of Data

All the data were analyzed using the Statistical Package of Social Sciences (SPSS) program software version 13.0. An independent T-test was used to compare the mean between male and female on the achievement goal orientations and mental coping skills score in athletes. The Pearson Product Moment Correlation was used to

Figure 1. ***Terms and definitions of ACSI-28 psychological coping skills***

Sub-scales	Descriptions
Coping with Adversity	Remains positive and enthusiastic even when things are going badly; remains calm and controlled; can quickly bounce back from mistakes and setbacks.
Peaking Under Pressure	Is challenged rather than threatened by pressure situations and performs well under pressure; a clutch performer.
Goal Setting/ Mental Preparation	Sets and works towards specific performance goals; plans and mentally prepares him/ herself for competition and clearly has a 'game plan' for the competition.
Concentration	Not easily distracted; able to focus on the task at hand in both practice and competitive situations, even when adverse or unexpected events occur.
Freedom from Worry	Does not put pressure on him/herself by worrying about performing poorly or making mistakes; does not worry about what others will think if he/she performs poorly.
Confidence and Achievement Motivation	Is confident and positively motivated; consistently gives 100% during practice and ompetitions and works hard to improve his/ her skills.
Coachability	Open to and learns from instruction; accepts constructive criticism without taking it personally or becoming upset.

Source: Adapted from Smith, R. E., and Christensen, D. S. (1995). Psychological skills as predictors of performance and survival in professional baseball. *Journal of Sport and Exercise Psychology*, 17, 399-415.

analyze the relationship between the achievement goal orientations and the mental coping skills score in athletes.

Results

Descriptive statistics

The Cronbach's alpha coefficients; mean and standard deviations of all the variables are presented in Table 1. As table 1 revealed, the seven subscales of task orientation reported strong internal consistency with .847. In addition, the ego orientation which comprised six items also showed a high internal reliability of .766. In terms of the internal reliability of ACSI – 28, the total of personal coping resource demonstrated the most reliable score of 0.747 (28 items). With regards to the seven ACSI – 28 subscales, six of the subscales were found to be internally consistent with alpha coefficient above 0.5. Unfortunately, the coachability subscale internal consistency was not acceptable (alpha = -.039) and will not be included for further analysis. In general, the participants were highly task oriented and were also perceived to have a fairly high ego orientation as evidenced by the high mean scores (see Table 2). For the ACSI – 28, the athlete's most frequently used coping skills is the coping with adversity skill (M = 2.08, SD = .46) and the least frequently used is the freedom from worry (M = 1.12, SD = .60).

Table 1. ***Descriptive statistics and reliability coefficient for goal orientation and coping skills for UPM athletes (n=85)***

	Mean	SD	
Task Orientation	3.97	.60	.847
Ego Orientation	3.71	.58	.766
ASCI – 28			
Coping with adversity	2.08	.46	.578
Peaking under pressure	1.94	.53	.634
Goal setting	2.02	.56	.715
Concentration	1.98	.48	.584
Freedom from worry	1.12	.60	.744
Confidence	2.03	.50	.654
Coachability			-.039
Total of personal coping resource	1.85	.27	.747

Note: Task orientation and ego orientation were measured on 5-point scales ranging 1 to 5; all other variables were measured on four-point scales ranging from 0 to 3

Means differences between ACSI – 28 scales and gender

Table 2 showed that there were significant differences in the three subscales of ASCI – 28 between males and females, which were concentrated with t (83) = -2.702, p = .008, freedom from worry with t (83) = 2.618, p = .011, and peaking under pressure with t (83) = -2.153, p = .034. Also, the independent T – test results showed that there were no significant differences found between gender with goal setting (p > .05), coping with adversity (p > .05), confidence (p > .05) and total personal coping resources (p > .05). In addition, the results showed that there were no significant differences between males and females on the task orientation (p > .05), and ego orientation (p > .05).

Table 2. ***Independent-sample t-test Results on ACSI-28 scales according to Gender***

ACSI – 28 Scale	**t**	**P**
Peaking under pressure	-2.153	.034*
Concentration	-2.702	.008**
Freedom from worry	2.618	.011*

*p < .05, **p < .01

Quantitative relationship between task orientation and coping skills

As illustrated in Table 3, Pearson product-moment correlations revealed weak to moderate correlations among the achievement goal orientations and ACSI – 28 subscales. The five subscales of coping skills (coping with adversity, peaking under pressure, goal setting, concentration and confidence) and the total of personal coping resources were positively correlated and were significant with both task and ego orientations (p < .01). Freedom from worry was found to be negatively correlated and was significant with ego orientation only.

Table 3. ***Coping strategies correlated with achievement goal orientation***

ACSI – 28	Task orientation	Ego orientation
Coping with adversity	.34**	.46**
Peaking under pressure	.28**	.52**
Goal setting	.38**	.53**
Concentration	.23**	.36**
Freedom from worry	-.20	-.34**
Confidence	.42**	.47**
Total coping resource	.39**	.54**

** p < .01.

Discussion

This study attempted to examine the relationship between achievement goal orientations and athletes' coping skills. The results of the study showed that athletes have comparatively higher task orientation profiles and there are no gender differences on achievement goal orientations. These findings, notwithstanding, the study also found that there are some gender differences in the coping skills among the athletes and that there are significant positive relationships between certain coping skills and achievement goal orientations. The results of this study showed that the university athletes in question had high task (M = 3.97) and fairly high ego orientations (M = 3.71). The goal orientation profile of the athletes showed a similar goal orientation profile as those Malaysian National and International level athletes who took part in a study by Omar-Fauzee and Abdul Razak (2005).

Thus, the results of this study showed that the means of the Malaysian athletes' achievement goal orientations are both high, which means that the athletes were high task oriented (M = 4.14) and fairly highly ego oriented (M = 3.49). Omar-Fauzee and Abdul Razak (2005) attributed the higher task orientation scores to systematic training and access to the National Sport Institute facilities. Likewise, the athletes in this study could have also benefited from the training programs and accessibility to university sport facilities, which could have encouraged them to focus on developing their competencies in their respective sports field. In another study on British university athletes, Ntoumanis *et al* (1999) also found that participants were notably high in task orientation (M = 4.17) and to a lesser extent in ego orientation (M = 3.21). These authors pointed out that individuals with a higher task orientation are usually associated with adaptive cognitive and behavioral outcomes, and emphasis on self-referenced goals such as individual improvement. They concluded that the downplay of social comparison will help task oriented individuals view stressful situations as relatively controllable. Previous studies (e.g. Pensgaard & Roberts 2003; Cumming & Hall, 2004; Kristiansen, Roberts, & Abrahamsen, 2007) have also shown that task oriented athletes tend to cope better.

The present study also compared whether there was any gender difference in the athlete's achievement orientation. The results showed that there was no gender difference in the athletes' achievement goal orientation. This conclusion is different from previous studies which had found that there were gender differences in the achievement goal orientation. In studies by Ntoumanis (2001); Thorkildsen and Nicholls (1998), it was found that males were significantly higher in ego orientation; the explanation for such findings is that males may be more preoccupied with recognition and the acquisition of status and power. However, Bouffard, Boisvert, Vezeau and Larouche (1995) found that women scored higher than men in task orientation. Therefore further research is needed to explain the inconsistencies in these results and clarify whether there are indeed gender differences in goal orientations among athletes.

The results of the present study also showed that there were some gender differences on the coping skills among the athletes. Females scored higher than males on the subscales of "peaking under pressure" and "concentration". However, male athletes scored higher on "freedom from worry" than their female counterparts. These results lend some cautious support to a study by Tamres, Janicki and Helgeson (2002) which found that females reported greater use of coping behaviors compared to men. In their study, which used meta-analysis procedures to examine recent studies of sex differences on coping, it was reported that out of 17 coping behaviors being investigated, 11 coping behaviors were found to be statistical significantly for females compared to males. The results of the study showed that females engage more in behaviors that involved the contemplation or expression of feelings to others (seeking emotional support) and the self (rumination, positive self-talk). However, Tamres, et al., (2002) noted that the mean effect sizes of all the 11 coping behaviors were quite small, and concluded that studies on gender differences in coping have not yet been established decisively, particularly because the literature on coping is complex when it comes to evaluating such differences.

Results of the present study on relationship between task orientation and coping skills showed that there were significant low positive relationships between task orientation and the subscales of "confidence", "goal setting" and "coping with adversity". These findings suggest that high task oriented athletes indicated that they have confidence in their ability through consistently working hard during practices and competitions, and set and work towards specific performance goals for themselves, and they are able to cope with adversity by remaining positive and enthusiastic even when things are not going as planned. These findings are in accord with past studies (e.g. Theodosiou & Papaioannou, 2006; Papaionnou et al., 2006; Sit & Lidner, 2004) which have also shown that task oriented individuals are intrinsically motivated, focus on self-referenced criteria such as personal improvement and learning in order to determine their competence.

When ego orientation is correlated with coping skills, the results of the present study showed that there were moderate and positive relationships with the coping skills of "goal setting", "peaking under pressure" and "confidence". These findings indicate that ego-oriented athletes mentally prepare themselves by setting game plans for competitions, perform well during competitions as they feel challenged rather than threatened by pressure situation, and are confident as they consistently give their best during practice sessions or in a competitive environment. This is in line with studies (e.g. Theodosiou & Papaioannou, 2006; Papaionnou et

al., 2006; Sit &Lidner, 2004) which have also shown that ego oriented individuals are more extrinsically motivated and tend to use normative criteria when comparing their abilities with others.

Conclusions and Recommendations

In conclusion, the present study found that there is some relationship between the achievement goals and coping skills of Malaysian athletes. However, these findings also suggest that further research in this area is likely to assist sport psychologists and coaches in developing a more thorough understanding of the achievement goal orientations of Malaysian athletes and those interventions can undoubtedly play a key role in motivating them to cope better in competitive settings. The findings from the present study also suggest that it would be desirable for future research to consider larger sample sizes with a more diverse ethnic and gender mix of athletes for better generalizability of research results.

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Essential Work Ethic Characteristics and Important Skills of Players to Winning Men's Division III Basketball Games

by Robert C. Schneider and William F. Stier, Jr.

Abstract

On a Likert-scale questionnaire, men's Division III head basketball coaches provided their opinions regarding the essentiality of 15 work ethic characteristics of players and the importance of 28 skills/talents of players for winning basketball games. The top rated categories of very essential work ethic characteristics of players and very important skills/talents of players were as follows—training: *training hard* (77.6%), and *strength/conditioning* (74.1%); effort: *in games* (95.7%), and *individual* (89.7%); performance/abilities: *game performance* (85.3%); basketball talent: *defense* (60.3%), and *passing* (54.3%). For the purpose of winning games, the highest priority of coaches should be to improve game-related items.

Essential Work Ethic Characteristics and Important Skills of Players to Winning Men's Division III Basketball Games

One goal of playing men's Division III college basketball games is to win. To that end, winning games might be traced to any number of factors, but coaches' pursuit of winning seems to readily include seeking out players who have a strong work ethic along with supreme talent and skill levels. It was found by Forman (1995) that in order to emerge victorious in actual competitions, college basketball coaches need to make a commitment to each player's growth and improvement. Such a commitment would be aided by an increased knowledge of specific work ethic and skills/talents of players that are very essential and important to winning games.

According to Stier (1997) even though there is plenty of anecdotal evidence that pertains to desirable skills, talent, and work ethic characteristics needed by players to win intercollegiate men's basketball games, limited empirical research has been conducted that addresses these characteristics. Empirical evidence that can help determine specific skills/talents and the extent to which they are essential or important to winning could be beneficial to coaches in any number of ways, including their recruiting and coaching of players. By surveying Division III coaches, the researchers' in this study have made an effort to help specify essential work ethic characteristics and important skills/talents of players needed to win men's Division III basketball games.

Background Information

Professional literature that specifically addresses work ethic characteristics and skills/talents essential and important to winning Division III men's basketball games is limited. There is, however, general literature that speaks to the various facets of how to win basketball games. Such literature includes a variety of opinions and methods as to the preferred approach to winning basketball games.

Winning, according to Owens and Stewart (2003), is dependent on being able to understand individual squad members' physical, emotional, social, and cognitive needs. Jones, Housner, and Kornspan (1997) emphasized the importance of understanding that effective and successful coaching is a multi-dimensional enterprise that is highly complex. Addressing one dimension of coaching was Dirks (2000) who studied how team performance was affected by the representation of the talent of the players and coach.

Stier (1998) pointed out that better skilled athletes and better conditioned athletes are two factors that distinguish teams that consistently win from those that consistently lose. Similarly, Laios and Theodorakis (2002) specifically underscored the importance of adequate strength and conditioning. And, physical energy required of athletes during actual competition was examined by Pascarella et al. (1999).

It is important, according to Jowett (2003), for a player to have the ability and willingness to work hard if success is to be achieved on the playing field. Elite athletes, according to Mallet and Hanrahan (2004), are aware of the need to train hard in order to be winners. When it comes to producing meaningful results in competition, Laios and Theodorakis (2002) maintained that training hard implies working diligently to improve not only individual performance but also team performance. Bursari (2000) also emphasized the importance of individual and team training. Adams (1996) suggested that elite athletes not only exhibit significant effort in games but also in practice and during the off season as well.

Methodology

A survey was developed that included a total of 43 Likert-scale statements. Of the 43 statements, 15 related to the essentiality of the work ethic of players and 28 related to the importance of the skills/talents of players. Each Likert-scale statement contained five options from which the coaches were asked to choose. The work ethic items were: 5—Very Essential (VE), 4—Essential (E), 3—Neither Essential or Unessential (NEU), 2—Unessential (U), and 1—Very Unessential (VU). And, the skills/talents items were: Very Important (VI), Important (I), Neither Important or Unimportant (NIU), Unimportant (U), and Very Unimportant (VIU).

The content of the survey consisted of items that were formed from the current literature related to players' essential work ethic characteristics and skills/talents important to winning men's Division III basketball games. The researchers' personal experiences of coaching men's intercollegiate basketball also served as a source for the development of the Likert-scale statements. Finally, a draft of the Likert-scale statements was mailed to five basketball experts for feedback. Expertise was defined as having coached intercollegiate basketball for at least 10 years with a winning rate of .750.

Based on the feedback from the expert coaches, the questionnaire was modified and considered a final draft. Next, the questionnaire was included in a packet that was mailed to each Division III

head men's basketball coach. The packet included a cover letter, the questionnaire, and a self-addressed stamped envelope for the return of the survey to the principal investigator. Statements were included in the cover letter making it clear to the subjects that their anonymity would be protected and that they were under no obligation to participate in the research study. Those choosing to exercise their right not to participate were instructed to do so by simply not completing and returning the questionnaire.

A total of 377 surveys were mailed to all of the NCAA Division III head men's basketball coaches in the United States. The mailing list was provided by the NCAA's national headquarters located in Indianapolis, Indiana. Coaches returned 116 of the 377 surveys for a return rate of 30.8%.

Presentation of Results and Comparison with Stier and Schneider (2006) Division I Study

Means were computed for each of the five Likert-scale options related to the essentiality of items in the work ethic of players and the importance of items in the skills/talents of players to winning men's Division III basketball games. Likert-scale choices ranged from very essential to very unessential for the work ethic of players category and very important to very unimportant for the skills/talents of players category.

In this section comparisons are made between this Division III study and a study by Stier and Schneider (2006) in which the same questionnaire was mailed to Division I head coaches. In order to make the comparisons, data from the Division I study is also presented in the text.

Essentiality of Work Ethic of Players

Training.

The eight training related items and the rate at which the Division III head coaches considered them essential to winning can be found in Table 1. The only two training items that were considered very essential to winning at a rate above or near three-fourths of the coaches were training hard (77.6%) and *strength/conditioning* (74.1%). *Training hard* was the only item considered at least essential by all (100%) of the coaches.

Table 1. ***Rate of Essentiality of Work Ethic of Players — Training***

	VE	E	NEU	U	VU
Training hard	77.6	24.4	0.0	0.0	0.0
Strength/conditioning	74.1	24.2	1.7	0.0	0.0
Preseason	53.4	39.7	6.9	0.0	0.0
Individual	53.4	43.1	3.5	0.0	0.0
Collective team	50.8	45.7	3.5	0.0	0.0
Long-term sacrifices	50.0	36.2	12.1	1.7	0.0
Short-term sacrifices	45.7	38.8	15.5	0.0	0.0
Off-season conditioning	37.9	55.2	5.2	1.7	0.0

Note: VE=Very Essential, E=Essential, NEU=Neither Essential nor Unessential, U=Unessential, VU=Very Unessential

In agreement with the Division III coaches in this study, were the Division I coaches in the Stier and Schneider (2006) study who also unanimously believed that *training hard* was very essential to winning at a very similar rate (74.6%). As in this Division III study all of the Division I coaches in the Stier and Schneider study also believed that training hard was at least essential to winning. Additionally, the Division I coaches in the Stier and Schneider study believed *strength* and *conditioning* to be very essential by a considerable percentage (72.9%).

Along with the two aforementioned training items, the following four training items were considered very essential by at least half (50%) of the Division III head coaches: *preseason* (53.4%), *individual* (53.4%), *collective team* (50.8%), and *long-term sacrifices* (50.0%). The only two training items that were considered neither essential nor unessential by over 10% of the coaches were *long-term sacrifices* (12.1%) and *short-term sacrifices* (15.5%). Still, both were considered at least essential at the following rates: *long-term sacrifices* (86.2%), and *short-term sacrifices* (84.5%).

When examining the Stier and Schneider (2006) Division I study the only work ethic training item rated very essential by over half of the coaches was *individual* (individual training). At 52.5% *individual* differed by less than 1.0% when compared to this Division III study. Furthermore, when comparing the rate at which the Division I coaches believed *individual* was at least essential to winning (96.6%) it was nearly identical to the Division III coaches who believed it to be at least essential at a rate of 96.5%.

Effort.

The seven effort-related items and the rate they were deemed to be essential to wining Division III men's basketball games are displayed in Table 2.The following four effort-related items were considered very essential by over 80% of the coaches: *in games* (95.7%), *individual* (89.7%), *in practice* (85.3%), and *player in-season work habits* (81.0%). The aforementioned effort-related items along with *player in-season conditioning* were believed to be at least essential by all (100%) of the coaches.

Table 2. ***Rate of Essentiality of Work Ethic of Players — Effort***

	VE	E	NEU	U	VU
In games	95.7	4.3	0.0	0.0	0.0
Individual	89.7	10.3	0.0	0.0	0.0
In practice	85.3	14.7	0.0	0.0	0.0
Player in-season work habits	81.0	19.0	0.0	0.0	0.0
Player in-season conditioning	67.2	32.8	0.0	0.0	0.0
Player off-season conditioning	48.2	46.6	5.2	0.0	0.0
Player off-season work habits	49.1	47.4	3.5	0.0	0.0

Note: VE=Very Essential, E=Essential, NEU=Neither Essential nor Unessential, U=Unessential, VU=Very Unessential

When compared to the 89.7% of the Division III coaches who believed individual effort to be very essential to winning, 5% less (84.7%) of the Division I coaches in the Stier and Schneider (2006) Division I study considered it to be very essential. Despite the 5% difference in this very essential choice, both sets of coaches unanimously (100%) believed that individual effort was at least

essential to winning at their respective Division III and I levels.

Of the seven effort-related items, *player off-season conditioning* and *player off-season work habits* were the two items that the coaches considered very essential at the lowest rates: 48.2% and 49.1% respectively. Yet both were still considered at least essential at the following rates: *player off-season conditioning* (94.8%) and *player off-season work habits* (96.5%).

Skills/Talent of Players

Performance/abilities.

The performance/abilities of players are displayed in Table 3 where no less than 79.3% of the Division III basketball coaches considered all eight of the performance/abilities items to be at least important to winning Division III men's basketball games. *Game performance* stood out as the one and only item that was considered very important to winning by over 70% (85.3%) of the coaches and at least important by 100% of the coaches. Believed to be very important at a rate lower than game performance—but still at a rate higher than half (50%) of the coaches—were the following performance/abilities items: *physical energy* (69.9%), *team oriented play* (67.2%), and *practice performance* (51.7%).

Table 3. ***Rate of Importance of Skills/Talent of Players — Performance/Abilities***

	VI	I	NIU	UI	VUI
Game performance	85.3	14.7	0.0	0.0	0.0
Physical energy	69.9	28.4	1.7	0.0	0.0
Team oriented play	67.2	29.3	3.5	0.0	0.0
Practice performance	51.7	43.1	5.2	0.0	0.0
Individual fundamentals	43.1	53.4	3.5	0.0	0.0
Defensive abilities	38.8	56.0	5.2	0.0	0.0
Physical ability	25.0	54.3	19.0	1.7	0.0
Offensive abilities	25.9	72.4	1.7	0.0	0.0

Note: VI=Very Important, I=Important, NIU=Neither Important nor Unimportant, U=Unimportant, VUI=Very Unimportant

Results that were related to performance in the Stier and Schneider (2006) study were similar to this Division III study's results. The following three categories were considered very important to winning men's Division I basketball games by more than half of the Division I coaches: *game performance* (83.1%), t*eam oriented play* (67.8%), and *physical energy* (66.1%).

All of the performance/abilities items were considered to be at least important by no less than 94.8% of the coaches with the exception of *physical abilities*, which was considered to be at least important to winning by only 79.3% of the coaches. Furthermore, the item of *physical abilities* was considered neither important nor unimportant by 19.0% of the coaches and offensive abilities was the only item considered unimportant (1.7%) by any of the coaches.

Basketball talent.

All 20 basketball talent items and the extent to which the Division III head men's basketball coaches deemed them important to winning are displayed in Table 4. The top six very important basketball talent items included *defense* (60.3%) and *passing* (54.3%) which were ranked first and second respectively. These same two items were the only two that were considered very important by over half of the coaches. Rounding out the top six very important basketball talent items were: *catching* (47.4%), *shooting* (46.6%), *fundamental base* (45.7%), and *ball handling* (43.1%). Interesting to note was that all of the basketball talent items were considered at least important to winning games by no less than 68.9% of all the coaches. There were, however, two basketball talent items—*fundamental base* and *rebounding*—that were considered at least important to winning games by all (100%) of the coaches.

Table 4. ***Rate of Importance of Skills/Talent of Players — Basketball Talent***

	VI	I	NIU	UI	VUI
Defense	60.3	32.8	6.9	0.0	0.0
Passing	54.3	42.2	3.5	0.0	0.0
Catching	47.4	40.5	12.1	0.0	0.0
Shooting	46.6	51.7	1.7	0.0	0.0
Fundamental base	45.7	54.3	0.0	0.0	0.0
Ball handling	43.1	55.2	1.7	0.0	0.0
Free-throw shooting	40.5	56.0	3.5	0.0	0.0
Strength	39.7	55.1	5.2	0.0	0.0
Rebounding	33.6	66.4	0.0	0.0	0.0
Three-point shooting	33.6	59.5	5.2	1.7	0.0
Two-point shooting	33.6	59.5	6.9	0.0	0.0
Endurance	30.1	59.6	8.6	1.7	0.0
Dribbling	30.1	59.6	10.3	0.0	0.0
Quickness	29.3	62.1	8.6	0.0	0.0
Screening	23.2	51.7	21.6	3.5	0.0
Agile	23.2	68.2	8.6	0.0	0.0
Fast	16.4	66.4	17.2	0.0	0.0
Scoring	16.4	65.5	18.1	0.0	0.0
Speed	11.2	74.1	14.7	0.0	0.0
Jumping ability	10.3	58.6	27.6	3.5	0.0

Note: VI=Very Important, I=Important, NIU=Neither Important nor Unimportant, U=Unimportant, VUI=Very Unimportant

All except four of the basketball talent items displayed in Table 4 were considered at least important to winning by no less than 85% of the Division III coaches. The four items that were considered at least important by less than 85% of the coaches were *jumping ability* (68.9%), *screening* (74.9%), *scoring* (81.9%), and *being fast* (82.8%). Compared to the other 16 basketball talent items the four aforementioned items were considered the least important to winning basketball games. It should be mentioned however, that even though jumping ability, screening, scoring, and being fast were considered the least important items, they were still only considered unimportant at a rate of no more than 3.5% of the coaches.

Noteworthy is the fact that in the Stier and Schneider (2006) Division I study the very same six basketball talent items—

defense, passing, catching, shooting, fundamental base, and *ball handling*—as in this Division III study were also believed to be very essential to winning at the highest rates. Furthermore, *defense* was rated first and *passing* as the second most very important basketball talent item by the Division I coaches in the Stier and Schneider study.

Division III Discussion

Based on the coaches' responses to the questionnaire, they unanimously reinforced the notion that *training hard* does, in fact, win games. As players improve, the foundation for team improvement is also established and winning games becomes more probable. As the second highest rated very essential training item to winning games, *strength and conditioning* may also be looked upon in a similar fashion as *training hard.* Both are areas of player training that coaches and players can control and improve without having high levels of player skills or talents. Coaches may also be indicating that players who do not train hard in the area of *strength and conditioning* will not be able to feature their skills and talents. Without adequate *strength and conditioning* even the most talented players will not be able to perform effectively.

Regarding the effect that effort-related items have on winning games, the coaches first and foremost, indicated that effort *in games* is very essential at the highest rate. It does stand to reason that effort *in games* is very essential at the highest rate since winning is a direct result from what takes place in games. In other words, because winning games most directly takes place during the actual game itself, it is the effort that is put forth by players in actual games that affects winning. Of course, effort in all facets of the sport of basketball are helpful or necessary, but given an option the coaches believed that effort during games is the most very essential of all of the effort-related items surveyed.

Necessary to note is that the coaches also indicated that preparation for games *individually, in practice*, with *in-season work habits*, and *in-season conditioning* on the part of players is also essential but not to the same degree of importance as effort *in games*. Strong effort in these aforementioned areas can help improve game performances but, as mentioned previously, first and foremost, players must put forth effort in games. In all probability, lack of effort during the actual games, will render the above game preparation items ineffective. It might, however, be difficult to look at effort *in games* as an effort–related item that is independent from effort-related items outside of games such as practice. As coaches seem to indicate, anecdotally, there may be a direct link between teams that practice hard and those that play hard.

In this study the coaches were consistent with their ratings of game-related items as being very important by rating the item of *game performance* as the highest rated performance/ability item. Much like the work ethic item of effort *in games, game performance* also has a direct effect on winning games because the winning of games is an actual function of what takes place in the game itself.

The coaches seemed to focus on the basics of basketball when identifying *defense, passing, catching, shooting, fundamental base*, and *ball handling* as the top six very important basketball talent items to winning basketball games. In fact five of the items—*defense, passing, catching, shooting, and ball handling*—might be described as the general f*undamental base* of basketball.

Conclusion

For the purpose of winning men's Division III basketball games, the Division III head coaches believed that the game-related items of *strong work ethic* and *game performance* were essential and important at the highest rates. Coaches should emphasize training hard in pre-, in-, and post-season workouts. In terms of specific basketball talent items, the coaches believed that a strong *fundamental base* that included the following five specific basketball talent items was very important at the highest rate: *defense, passing, catching, shooting*, and *ball handling*.

Practical Recommendations

This section provides recommendations, based on the results of this study. The recommendations put forth are intended to help men's Division III basketball coaches win games. In all likelihood, some recommendations will serve some coaches and players better than others. Based on factors that vary among programs, coaches, and players, coaches should decide to what extent, if any, to implement the following recommendations.

Coaches should:

- Emphasize having a strong work ethic during games.
- Recruit players who have a will and desire to consistently train hard.
- Hire strength and conditioning specialists.
- Conduct disciplined practices that are physically and mentally challenging for players.
- Motivate players to put forth their strongest effort during games.
- Emphasize the importance of winning.
- Put players in positions where they will experience success through their strong efforts.
- Utilize practices to emphasize the importance of effort in games.
- Speak in practice of the importance of putting forth one's best effort in games.
- Serve as role models by demonstrating the same in-game effort through their coaching that they demand from their players.
- Identify game-related weaknesses of not only their team but also their opponents.
- Identify team weaknesses through film review and in-person observation.
- Emphasize *defense, passing, catching, shooting*, and *ball handling*.
- Emphasize to players the importance of strengthening their fundamental base through practices and also during off-season individual workouts.

Recommendations for Future Research

There are several additional populations of coaches in which the same questionnaire used in this Division III study and in the Schneider and Stier (2006) Division I study could be applied. This questionnaire should be applied to the following populations of head basketball coaches: men's NCAA Division II, women's NCAA Division I, II, and III, men's and women's professional teams, and interscholastic teams. Additionally, game related items

should be studied in more depth, which will allow coaches to focus even further on improving areas essential and important to winning.

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Prince Faisal Bin Fahad International Prize For Arab Sport Development Researches

The Statute of the Prize
Seventh Session
(2008-2011)

Invitation

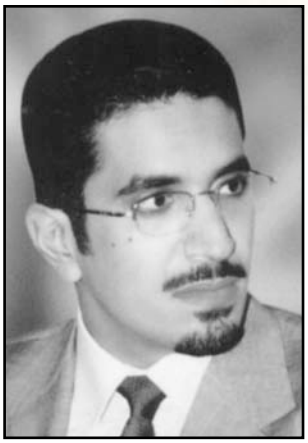
The Board of Trustees of Prince Faisal Bin Fahad International Prize for Arab Sport Development Researches declares with pleasure the time schedule for the Prize in its 7th session which will starts in June 2008 and ends in June 2011.

The Board calls researchers and scientific personalities specialized in physical education, sport sciences and international research institutions to participate by researches, studies and excellent, update and outstanding scientific achievements to realize the philosophy and targets of the Prize for the development of sport movement in the Arab world to reach the international level.

The Board declares the allotment of a financial prize of US$ 300,000 (three hundred thousand US dollars) as the greatest international prize in the field of sport to be distributed according to the value decided for the successful researcher in each of the main parts of the current session.

As the Board is willing to offer equal opportunities to the researchers, the scientific sport personalities and research institutions applying to win one of the decided financial prizes, it draws their attention to the necessity for reviewing the articles of the bylaw and to strictly comply with the standards and conditions and with the time schedule set forth in the bylaw.

We wish all success to the all participants



Chairman of the Prize Board of Trustees,

Nawaf Bin Faisal Bin Fahad Bin Abdulaziz

HRH. Prince Faisal Bin Fahad:

Born in 1946, and a member of the Saudi Royal Family, His Royal Highness Prince Faisal bin Fahad has won for himself the love and respect of the youth in Saudi Arabia as well as in the Arab world who crowned him with popular title "the prince of Youth and Sports". This title was a spontaneous popular acknowledgment and appreciation of the great achievements he realized for the Saudi sports and athletics, and reflects the love of the young generations that the late Prince Faisal enjoyed.

The late Prince's great efforts and unwavering determination as President General of Youth Welfare, and as the president of the Saudi Football Federation. And Saudi Arabian Olympic Committee, were behind the development of Saudi Arabia, in a record time, from a little known country in the world of sports and athletics to a country with a permanent competing place in the major international sports finals including the World Football Cup, and the Olympic Games.

It is thus, and through his great services to the development of the Arab sports and athletics, that he was asked to preside over the Arab Sports Confederation, and the Union of the Arab Football Association, two important posts he kept till he passed away.

However, the late Prince Faisal's love for sports and athletics was not confined to the Saudi, Arab, or Asian Sports and Athletics, but was also extended to sports and athletics worldwide. His devotion to world sports and athletics persuaded him the IOC order of Merits in appreciation of his services to the Olympic movement.

Prince Faisal Bin Fahad International Prize for Arab Sports Research Development, which was established in 1983 up on the late Prince's initiative is a symbolic representation of the great love and dedication that continues to live with us long after he left us in 1999, may his soul rest in peace.

Introduction:

As researches and studies are essential for the cultural and sport development of the current nations; as advancement of any sport movement in to day world mainly depends on the standard of scientific researches & studies conducted by scientists, experts and professionals in one or more fields of physical education and sport sciences; and as the whole world in general and the Arab world in particular have no material or immaterial prize to support and encourage scientists, experts and professionals in the fields physical education and sport sciences. HRH Prince/ Faisal Bin Fahad Bin Abdulaziz (mercy be upon him) has great interest in the issues of Arab sport and he recognized the importance of the schools students' sector as a wide base that generates distinguished champions after they acquire the basic skills. Upon that Prof./ Pierre Sorine, Head of the International Federation for Physical Education & Sport was invited to visit Riyadh to strengthen relation with him and to exchange experiences to serve the interests of both parties.

In 1983:

By the initiative of HRH Prince/ Faisal Bin Fahad Bin Abdulaziz (mercy be upon him) a prize for the best three researches on Arab sport development in collaboration with the International Federation for Physical Education & Sport.

In 1990:

The Prize was decided to international in Arabic, English, French and Spanish languages and the Prize value was raised to US$ 300,000.

In 1997:

A coordination meeting was held in Paris between the Arab and International Federations to set an international arbitration committee for the Prize after it had become international.

In 2001:

HRH Prince/ Nawaf Bin Faisal Bin Fahad decided to set up the High Committee of the Prize and to increase its value to US$ 300,000 (US$ 100,000 for each one of the main parts of the Prize) provided that the prizes shall be granted every two years instead of four years.

In 2007:

The three research parts of the Prize were developed to be as follows:

- the 1st main part: titled the scientific research for which a US$ 100,000 (one hundred thousand US dollars) prize was allotted to be granted to one researcher or more
- the 2nd main part: titled the scientific issue for which a US$ 150,000 (one hundred fifty thousand US dollars) prize was allotted to be granted to a research institution charged with conducting a scientific study to address a certain issue.
- the 3rd main part: titled the scientific sport personality for which a US$ 50,000 (fifty thousand US dollars) prize was allotted to be granted to a scientific sport personality that has contributions enriched the sport movement on the Arab level.

Article I:

Prize philosophy:

As HRH Prince/ Faisal Bin Fahad Bin Abdulaziz (mercy be upon him) is aware of the responsibility of a sport pioneer and for his belief in the role of scientists, experts and researches in developing sport movement, HRH Prince Faisal Bin Fahad decided to set up this Prize for the development of sport movement level in the Arab world to reach the international level.

Article II:

Prize targets:

The Prize targets are:

1- To support and encourage scientific researches which participate in the development of sport movement in the Arab world.

2- Treatment of Arab sport issues and problems by scientific methods by the assignment of researchers (scientists, professionals or scientific research centers).

3- To honor scientific and sport personalities that provided distinguished scientific and practical works and services which participated in sport development in the Arab world.

Article III:

Prize administration:

The Prize administration consists of:

1- Prize Board of Trustees
2- Prize Executive Board
3- Prize General Secretariat
4- The Scientific Committee
5- The Scientific Umpires

Article IV:

The Prize parts:

The Prize includes, in its seventh session, the following three main parts:

1- The 1st Part: a scientific research in the role of technology in the development of the Arab sport.
2- The 2nd Part: scientific issue study on the obstacles that hinder the Arab sport from reaching the international level and the ways of its development.
3- The 3rd Part: the scientific sport personality.

Article V:

Prize contents:

1- The financial prize: of US$ 300,000 (three hundred thousand US dollars) distributed as follows:

- the 1st part prize: US$ 100,000 (one hundred thousand US dollars)
- the 2nd part prize: US$ 50,000 (fifty thousand US dollars)
- the 3rd part prize: US$ 150,000 (one hundred & fifty thousand US dollars)

2- Appreciation prizes: the Board of Trustees may grant appreciation prizes to one or more researchers in case he/ they submit a distinguished research even if has not reached the first grade in one or more parts of the Prize in the same session.
3- Prize order: to be granted to the winner in each part of the prize with a certificate
4- Appreciation certificate: to be granted to researchers, scientific institutions and sport scientific personalities that realize at least 65% of the final evaluation.

Article VI:
Prize granting procedures:

6-1 Winners of every part of the Prize shall be declared in a press conference held by the Head of Board of Trustees of the Prize.

6-2 An official festival shall be held for granting prizes and orders to winners.

6-3 Introduction to the works, achievements and contributions of winners of Prize parts

6-4 Each winner of any part of the prize shall make a short speech during the official festival.

Article VII:
Procedure of application to the prize:

The following shall be taken into consideration at applying for the Prize:

7-1 providing data on researchers, scientific institution or scientific sport personality including:

a- C. V.
b- Mailing addresses and E-mails
c- Personal & work telephone numbers
d- 2 photographs

7-2 For the 1st and 2nd Parts of the Prize, five copies of each work and attachments thereof shall be transmitted with 2 CDs. For the 3rd Part of the Prize, one copy of the works shall be transmitted.

7-3 The deadline for receiving works shall be according to the time schedule stated at the end of statues.

7-4 All correspondence shall be transmitted to the Prize Secretariat to the following address:

The Secretary-General, Prince Faisal Bin Fahad International Prize for Arab Sport Development Researches, Leaders Preparation Institute in Riyadh, Prince Faisal Bin Fahad Olympic Complex,
P. O. Box 55075 Riyadh 11434

Kingdom of Saudi Arabia.

Tel# +96614824416

Fax# +96614811829

E-mail: info@prince-faisal-prize.com

Article VIII:

Languages of researches and works submitted for the Prize:

Researches and works submitted for the Prized shall be received in one of the following languages:

1- Arabic language
2- English language
3- French language
4- Spanish language

Article IX:

Special conditions for applying to each part the Prize:

9-1 the 1st Part (scientific research):

Each research submitted for this Part of the Prize:

9-1-1 Shall be within the 1st Part of the Prize "the role of technology in Arab sport development".
9-1-2 Shall be compatible to the targets and philosophy of the prize
9-1-3 Shall be a real research conducted during the period stated for the Prize in its 7th session (2008- 2011).
9-1-4 Shall have not been submitted to any scientific body, has not been published, not submitted for obtaining an academic degree (master, PhD.) and shall not be submitted to any university for the purpose of promotion.

9-2 the 2nd Part (scientific issue):

Each research project submitted for this Part of the Prize:

9-2-1 Shall be submitted by a research institution specialized in conducting and supporting scientific researches in general and sport sciences in particular.
9-2-2 The research institution shall have previous research experiences in conducting and supporting scientific researches in general.
9-2-3 The research institution shall be an officially approved by the competent authorities of its country.
9-2-4 The research institution shall have a professional scientific team and it may conclude a contract with a professional scientific team.

9-2-5 The team participating in the research project submitted for competition on the research prize shall:

a- the number of the research team members shall not be less than three professional researchers

b- one of the team members shall be a professor

c- the research team members shall be specialized in the offered issue

d- it is preferable that the members of the scientific research be from different countries.

9-3 the 3rd Part (scientific sport personality):

Each research submitted for this Part of the Prize:

9-3-1 shall be a scientific sport personality having contributions and experiences in the field of its specialization and have practical contributions in Arab sport development.

9-3-2 The personality shall be holding a high academic degree (aster or Phd.)

9-3-3 Shall have at least 25 years experience in the sport, scientific and editing field.

9-3-4 A nomination file shall be submitted including the following data & information:

a- personal data: name, age, sex, nationality, current occupation, place of work, mailing address, E-mail, telephone numbers.. etc.

b- academic data: academic certificates, academic rank, teaching experience, university thesis supervision, scientific visits …etc.

c- scientific contributions: proper scientific researches, scientific inventions, scientific books, scientific articles, training packages preparation, contribution to sport information, giving lectures abroad in courses or events … etc.

d- scientific experiences: scientific consultations, visiting professor, scientific researches evaluation, scientific prizes evaluation ..etc.

e- field experiences: trained player, referee, sport administrator, Olympic committees, sport federations and committees, technical committees, sport committees, organizing sport competitions and championships, seconding to a sport institution…etc.

f- positions (political, academic and administrative positions)

g- orders and prizes (official orders, orders of sport corporations or institutions, prizes of scientific and practical distinguishing).

9-3-5 Works, contributions and experiences shall be evaluated according to the following down order: Olympic international, continental, regional, local (national).

9-3-6 A schedule containing all proper scientific researches, published scientific books, addresses statement, the date of publishing and publisher shall be submitted. As well as submitting five researches and five books which the nominated considers them contributed in the development of Arab sport.

9-3-7 The official documents which prove the validity of data and information mentioned in the following paragraphs: practical experiences, field experiences, positions, orders and prizes.

Article X:

10-1 scientific standards to be available in the researches submitted for the 1st Part of the Prize (scientific research):

10-1-1 defining the research problem in an accurate scientific style

10-1-2 the research targets and hypotheses shall be compatible with the research problem

10-1-3 the number of research pages shall not exceed 150 pages.

10-1-4 Scientific standards for research writing (set forth in article 11) shall be observed.

10-1-5 Research sample shall accurately represent the study society with respect to its relation, characteristics and components if any.

10-1-6 A research shall not include and thanks or dedication to any body or person.

10-1-7 Equations and statistics procedure or results analysis shall be suitable to the type and nature of research.

10-1-8 Results presentation and analysis in a way that assists in providing scientific analysis including:

a- proposed program or,

b- project of scientific theory or

c- invented scientific solutions

10-1-9 using modern references.

10-2 Scientific standards to be available in the research projects submitted for the 2nd Part of the Prize(scientific issue):

10-2-1 introduction: shall not exceed three pages and shall include the following:

a- statement of research problem

b- targets to be achieved

10-2-2 **theoretical framework:** it shall not exceed 5 pages and shall include the following:

a- research literature

b- similar or related studies and researches

c- subjects which the research team considers as enriching to the theoretical framework.

10-2-3 **Method and procedure:** they include the following:

Study sample shall include more than one scientific methodology.

a- Study sample:

The sample shall represent the Arab sport society and shall be selected from various geographical regions of the Arab counties.

b- Study tools:

Scientific research team shall include several research tools and methods

c- Methods of data and information processing:

Scientific research team shall decide the styles and methods of statistical processing to be compatible to the methodologies used in the study.

10-2-4 **Study references and sources:**

Scientific research team shall decide the references and sources of his study to be modern.

10-2-5 **Obstacles processing:**

Scientific research team shall provide the styles or methods which they use in the treatment of obstacles which they face in studying the scientific issue.

Article XI:

11-1 scientific standards for writing for the 1st and 2nd Parts of the Prize:

11-1-1 American Psychology Association (APA) (fifth edition) shall be applied to the scientific researches and projects submitted for the 1st and 2nd Part of the Prize:

11-1-2 Research and study cover contents:

a- full name of researcher(s) without scientific titles

b- Academic grade for academics or administrative position for those working outside higher education institutions.

c- Name of institutions or corporation to which the researcher is related or the name of the university (faculty and academic department) with which the researcher works, if any, or the research institution.

d- Name of the prize and the part of the prize for which the research is written.

e- The date of research, project or study completion (month and year).

11-1-3 A research summary must be written in Arabic and English languages in addition to a summary of the same in the research language and shall be included at the end of the research after the references list.

Article XII:

Evaluation and arbitration procedure of the three parts of the Prize:

12-1 **the evaluation and arbitration of researches, projects and works shall pass the following three successive stages:**

a- the administrative procedure: the General Secretariat shall conduct an accurate revision of the researches, projects and studies to verify their satisfaction of all the general requirements for applying for the Prize with respect to the number of copies, attachments, application date and other requirements stated in this bylaw.

b- **General evaluation:** the scientific committee shall revise researches, projects, studies and works to verify their satisfaction of the general conditions set forth in articles 9, 10 & 11.

c- **Scientific arbitration:** arbitrators shall evaluate researches, projects, studies and works in accordance with the scientific standards prepared for that.

d- **Final evaluation:** researches, projects, studies and works shall be placed in final order by the Prize Board of Trustees according to the marks of scientific arbitration and the marks of general evaluation.

12-2 **Arbitrators:** at least three arbitrators shall undertake the evaluation of researches, projects, studies and works nominated for the Prize in each Part of the Prize and in each language in accordance with the scientific standards prepared for that.

Article XIII:

Researches ownership and rights of publication:

13-1 all successful researches, projects and studies shall become the sole property of the Prize. The Prize shall have the right to print, publish, distribute and disposal of the same according to the rules set up by the Board of Trustees.

13-2 Researches submitted for the Prize shall not be returned to their owners.

Article XIV:

General provisions:

The Prize Board of Trustees shall have the right to:

14-1 stop or withdraw any prize if it appeared that the winner has violated the rules and conditions set forth in this bylaw or for scientific reasons decided by the Board of Trustees.

14-2 Prevent granting the Prize in the following cases:

a- if the submitted researches fail to realize the Prize targets

b- if the submitted researches, projects, studies and works fail to reach the required scientific standard according to the evaluation results

c- if no adequate number (5) researches nominated for the first Part of this Prize.

d- If the research institution charged with conducting study, violates the provisions of the contract.

14-3 A scientific symposium shall be held during the period of granting the Prize. The successful researches, projects, studies and works nominated by the scientific committee shall be presented to the scientific symposium.

The time schedule for the three parts of the Prize

The time schedule for the 1st part of the Prize (scientific research)

S. No.	Procedure	Date
1	The Prize announcement	18/6/2008
2	The dead line for receiving researches	31/12/2009
3	Administrative procedure	10/1/2010- 28/2/2010
4	General & scientific evaluation	1/3/2010- 30/9/2010
	Administrative procedure	1/10/2010- 31/12/2010

The time schedule for the 2nd part of the Prize (scientific issue)

S. No.	Procedure	Date
1	The Prize announcement	18/6/2008
2	The dead line for receiving	31/3/2009
3	Administrative procedure	1/4/2009- 30/4/2009
4	General & scientific evaluation	1/5/2009- 31/8/2009
5	Signing the agreement	1/9/2009- 30/9/2009
6	The dead line for receiving study	1/10/2009- 31/12/2010
7	Final revision	1/1/2011- 28/2/2011

The time schedule for the 3rd part of the Prize (sport scientific personality)

S. No.	Procedure	Date
1	The Prize announcement	18/6/2008
2	The dead line for receiving nominations	31/5/2009
3	Administrative procedure	1/6/2009- 31/8/2009
4	General & scientific evaluation	1/9/2009- 31/3/2010
5	Final evaluation	1/4/2010- 31/6/2010

Prize Board of Trustees

Name	Country	Title
HRH Prince/ Nawaf Bin Faisal Bin Fahad	Saudi Arabia	Chairman
Dr. Saleh Ahmad Bin Naser	Saudi Arabia	Vice-chairman
Dr. Mohammed Khair Mamser	Kingdom of Jordan	Member
Dr. Manuel Topito	Republic of Brazil	Member
Prof./ Gordon Doll Taiber	Republic of Germany	Member
Dr. Dong Ja Yang	The United States	Member
Mr. Othman Mohammed Alsaad	Saudi Arabia	Member
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Prof./ Talal Mohammed Aldamiri	Saudi Arabia	Member
Prof./Mohammed Bin Saeed Abu Omair	Saudi Arabia	Member
Mr./ Mohammed Bin Saleh Alqarnas	Saudi Arabia	Prize General Secretary, Member
Mr./ Farraj Bin Sulaiman Alfarraj	Saudi Arabia	Prize Assit. General Secretary Member

International Council for Health, Physical Education, Recreation, Sport, and Dance (ICHPER·SD)

Individual Membership/Commission Application

PLEASE TYPE OR PRINT CLEARLY Title: ☐ Prof. ☐ Dr. (☐Male/☐Female) ☐ Mr. ☐ Ms.

Name:____
First Middle Last

Address:____

____

____
City State/Country Zip/Postal Code

Institutional Affiliation: ____
College/University/Organization Department

Telephone No.________________________ **Fax No.**________________________

E-Mail: **Please print one letter per line**: __

Type of Membership:	☐ **Individual /Group A* ($60.00 U.S.)** ☐ **Individual/Group B* ($50.00 U.S.)** ☐ **Individual/Group C* ($40.00 U.S.)** ☐ **Life ($1,500.00 U.S.)** ☐ **Contributing ($1,000.00 U.S. or more)**	***Group A, B, and C corresponds to a graduated membership fee system. The three different annual individual membership fees are based on economic status of the nation in which a member resides and works. (See back of this application.)**

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ICHPER·SD has forty (40) Commissions. Every individual member of the Council is encouraged to be a member of a Commission according to his or her own preference. Each Commission, as an international substructure of ICHPER·SD, is responsible for carrying out the sustained projects and programs for each field of specialization in health, physical education, recreation, sport, and dance. Thus, your participation will enrich you by broadening your connection with other professionals throughout the world.
Please select one Commission by circling the appropriate number:

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2. Aerobics
3. Aging
4. Aquatics
5. Coaching
6. Comparative Physical Education & Sport
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8. Dance and Dance Education
9. Fitness and Wellness
10. Girls and Women in Sport
11. Health Education
12. History of Physical Education and Sport
13. Int'l. Curriculum Standards & Sport
14. Legal Liability in HPERSD
15. Leisure and Recreation
16. Martial Arts Education
17. Mass Media and Sport
18. Measurement and Evaluation of Physical Education
19. Nutrition and Physical Education
20. Olympic Education
21. Philosophy of Physical Education and Sport
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23. Physical Education at the Primary Level
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25. Professional Preparation & Certification in HPERSD
26. Professional Standards and Ethics
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28. Sport and Recreation Facilities
29. Sport Biomechanics
30. Sport Counseling Psychology
31. Sport For All
32. Sport Governance, Organizations, and Law
33. Sport Management and Administration
34. Sport Marketing and Economics
35. Sport Medicine
36. Sport Pedagogy
37. Sport Physiology
38. Sport Psychology
39. Sport Sociology
40. Yoga

MAIL TO:
ICHPER·SD, 1900 Association Drive, Reston, Virginia 20191, U.S.A.
Tel: (703) 476-3462 FAX (703) 476-9527, E-Mail: ichper@aahperd.org
Payments must be made in US funds via money order, check drawn on US or Canadian bank, or charged to your credit card.

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- **Receipt of the Certificate of Appointment to the ICHPER·SD Commission you select according to your specialization or interest.**
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- **Life Member--receipt of Life Membership plaque, and all above benefits of Individual membership.**

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A member in Group A shall pay a $60.00 annual membership fee and 100% of Congress registration fee; Group B $50.00, and 75% of Congress registration fee; and Group C $40.00, and 50% of Congress registration fee.

Countries in Group A (49)

American Samoa, Andorra, Argentina, Aruba, Australia, Austria, Bahamas, Bahrain, Barbados, Belgium, Brunei Darussalam, Canada, Chile, China, Cyprus, Denmark, Finland, France, Germany, Greece, Guam, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Korea (South), Kuwait, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands Antilles, Netherlands, New Zealand, Norway, Puerto Rico, Qatar, San Marino, Singapore, Spain, Sweden, Switzerland, Taiwan, United Arab Emirates, United Kingdom, United States of America, U.S. Virgin Islands.

Countries in Group B (32)

Antigua & Barbuda, Bermuda, Brazil, British Virgin Island, Cayman Islands, Cook Islands, Colombia, Costa Rica, Croatia, Czech Republic, Fiji, Gabon, Hungary, Libya, Malaysia, Mauritus, Mexico, Nauru, Oman, Palau, Panama, Poland, Portugal, Saint Kitts and Nevis, Saudi Arabia, Seychelles, Slovakia, South Africa, Trinidad & Tobago, Turkey, Uruguay, Venezuela

Countries in Group C (121)

Afghanistan, Albania, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Belarus, Belize, Benin, Bhutan, Bolivia, Bosnia & Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central Africa Republic, Chad, Comoros, Congo (Democratic Republic of), Congo (Republic of the), Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran, Iraq, Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Korea (North), Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Lithuania, Macedonia, Madagascar, Malawi, Maldives, Mali, Marshall Islands, Mauritania, Micronesia, Moldova, Mongolia, Morocco, Mozambique, Myanmar (Union of Burma), Namibia, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Palestine, Papua New Guinea, Paraguay, Peru, Philippines, Romania, Russia, Rwanda, Saint Lucia, Saint Vincent & The Grenadines, Samoa, Sao Tome and Principe, Senegal, Sierra Leone, Slovenia, Solomon Islands, Somalia, Sri Lanka, Sudan, Suriname, Swaziland, Syria, Tajikistan, Tanzania, Thailand, Togo, Tonga, Tunisia, Turkmenistan, Tuvalu, Uganda, Ukraine, Uzbekistan, Vanuatu, Vietnam, Yemen, Yugoslavia, Zambia, Zimbabwe.