Florida International University
College of Education
Research Conference

April 30, 2005

Honoring Inquiry Promoting Mentoring Fostering Scholarship

COERC 2005

Proceedings of
The Fourth Annual College of Education
Research Conference

April 30, 2005
Florida International University
Miami, Florida USA

Proceedings of
The Fourth Annual College of Education Research Conference

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To all FIU Fourth Annual College of Education Research Conference Participants, Sponsors, and Guests:

The FIU College of Education Research Conference Steering Committee would like to thank the College of Education faculty and students for supporting the Fourth Annual COE Research Conference: *Honoring Inquiry, Promoting Mentoring, and Fostering Scholarship*

Special thanks go to the Steering Committee members who worked hard at creating documents and procedures to sustain this conference in the long term while taking care of all the details of facilitating a quality conference: Michelle Cleary, (Co-chair, Steering Committee), Carlos Batist (Marketing), Greg K. Dubrow (Program Planning), Mohammed K. Farouk (By-Laws), Barry Greenberg (L. R. Gay Award), Hilary Landorf (Co-Chair, Review and Selection Committee), Ann Nevin (Co-Chair, Review and Selection Committee), Tony Normore (Program Planning), Sarah M. Nielson (Proceedings Co-Editor), and Masha Plakhotnik (Proceedings Co-Editor), and to the rest of the committee who contributed insights, edited, reviewed proposals, and innumerable other tasks associated with such a large endeavor. The Steering Committee members are: Carlos Batist, Michelle Cleary, Laura E. Blitzer, Greg K. Dubrow, Mohammed K. Farouk, Delia C. Garcia, Barry Greenberg, Hilary Landorf, Ann Nevin, Sarah Nielson, Tony Normore, Tonette S. Rocco, Linda Spears-Bunton, and Maria V. Tester.

In their third year of service on the Lorraine R. Gay Award for Excellence in Research/Scholarship Selection committee are: Dan Dustin, First Frost Professor, Parks and Recreation Management, Adriana McEachern, Associate Dean and Associate Professor Educational & Psychological Studies, and Barry Greenberg, Professor, Educational & Psychological Studies. We appreciate their expertise and the time they gave to select this year's award winners.

We are grateful to Mrs. Maria Tester, Office of Research and Grants, who facilitated the work of the Logistics Committee. We appreciate the hard work of the volunteers and College of Education Graduate Student Network who made this happen.

We appreciate the efforts of the faculty who participated by registering to moderate sessions. This year's moderators are: Patricia Barbetta, Peter Cistone, Jenna Doherty, Greg Dubrow, Dan Dustin, Steve Fain, Michael Parsons, Angela Salmon, Jan Sandiford, Lynn Ilon, and Bryan Moseley.

We are pleased that PDK has chosen to sponsor the conference by underwriting the cost of refreshments. We also wish to thank the Miami Herald for support of the conference. The Steering Committee is indebted to the Office of Research and Grants for their sponsorship and the invaluable assistance of Mrs. Maria Tester and the guidance of Dr. Mark Shermis.

Thank you all for making *Fourth Annual COE Research Conference* an event that we are proud of and deserving of our continued support.

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Phi Delta Kappa International

FOR NEARLY A CENTURY Phi Delta Kappa International has played an influential role in education. Members and volunteer leaders embody the ideals of the profession and are united in the belief that education is essential to a free society. The association provides professional growth opportunities, fosters collegiality among its members, and offers many services to education and the larger community.

MISSION To promote high quality education, in particular publicly supported education, as essential to the development and maintenance of a democratic way of life. This mission is accomplished through leadership, research, and service in education.

BELIEFS We believe in publicly supported education. We believe that high quality education for all is essential to the development and maintenance of a democratic way of life. We believe in upholding the ethical ideals of leadership, research, and service. We believe that leadership should be nurtured and developed. We believe that a dynamic organization incorporates the needs of its members, is responsive to the environment and trends, and changes as needed. We believe that diversity strengthens our association.

The FIU Chapter of PDK meets approximately five times each academic year. The Chapter sponsors members who participate in national conventions and offers members the opportunity to develop relationships with others committed to the advancement of education. The Chapter sponsors lectures from visiting scholars and supports members who represent the Chapter at national meetings. In addition, the Chapter has the opportunity to sponsor students for scholarship assistance and recognition for quality research efforts. Finally, the FIU Chapter of Phi Delta Kappa recognizes professional and lay individuals who work to advance the cause of education.

For information about joining PDK contact Drs. Karis MacDonnell at karismac@bellsouth.net, Hilary Landorf at landorfh@fiu.edu, or Tonette Rocco at roccot@fiu.edu.

For information about sponsoring part of the COE Research Conference or donating to the L.R. Gay Award fund contact Dr. Michelle Cleary at clearym@fiu.edu.

Dr. Modesto A. Maidique - Keynote Speaker

President, Florida International University

Modesto A. Maidique is the 4th president of Florida International University (FIU), a member of the State University System of Florida and the fastest growing research university in the United States. During his tenure at FIU, Dr. Maidique has presided over the establishment of the School of Architecture and the College of Law, initiated the football program, and doubled enrollment to over 35,000 students today. In addition, sponsored research has increased more than seven-fold to $75.5 million, while endowment quintupled.

A graduate of the Department of Electrical Engineering and Computer Science at the Massachusetts Institute of Technology (Ph.D.) and the Harvard Business School (PMD) program, Dr. Maidique is a world-renowned authority on the management of high technology enterprises. For more than two decades -- for institutions including the White House, Harvard and IBM -- Dr. Maidique has provided counsel on critical management and educational issues impacting our nation. Dr. Maidique is the author of numerous articles in academic journals, a contributing author to ten books, and a co-author of Strategic Management of Technology and Innovation. An article he co-authored, "The Art of High Technology Management," is one of the best selling articles published in the Sloan Management Review. He is also the co-author of Energy Future, a New York Times best seller on energy policy.

In 1989, former President George H. W. Bush appointed Dr. Maidique to the President's Educational Policy Advisory Committee. In 2000, President George W. Bush appointed Dr. Maidique to the President's Education Advisory Committee. Currently, he also serves on the Secretary of Energy Advisory Board.

Panel Discussant Profile

Charles Bleiker, Ph.D., Associate Professor of Early Childhood Education

I am currently coordinator of Early Childhood Programs at FIU, and Principal Investigator of several grants studying the effectiveness of intervention for school readiness. These projects are aimed at finding better ways to prepare high poverty, urban children for formal schooling. Ultimate goals are more children performing at grade level, fewer children in Special Education, better school attendance, more parent participation, better readers, and generally more successful students. By intervening years before children enter school we hope to prevent many of the school failures currently afflicting our schools.

In this presentation I will discuss the power of film as a research technique. Film is a medium that lets the participant speak out directly to the audience. The researcher as filmmaker uses the image as much as the word to make meaning out of lived events. I will show clips from an ongoing documentary of poor families struggling to prepare their children for school. I will then discuss what I see as the benefits of this type of research, and why it should have greater legitimacy in academia.

The College of Education of Florida International University

In memory of Lorraine R. Gay
Respected scholar and teacher;
Valued colleague and treasured friend
&
Founding member of the research faculty of the College

(2001) Loraine Wasserman, *The effects of a family-based educational intervention on the prevention of lead poisoning in children*

(2002) Sarah M. Nielsen, *High Stakes and No Takers: The Impact of Florida Comprehensive Assessment Test (FCAT) Writing on Students' and Teachers' Perceptions of Writing*

(2003) Kandell Malocsay, *The Effects of Cultural Distance on Student Socialization and Departure Decisions*

The Lorraine R. Gay Award for Excellence in Research and Scholarship

The purpose of the award is to acknowledge, in the name of L. R. Gay, outstanding research scholarship on the part of students and their supporting faculty in the College of Education of FIU.

L. R. (Lorrie) Gay, the founding professor of educational research for the FIU College of Education, was dedicated to students, to the rigorous pursuit of educational excellence and to research scholarship. She chaired the first doctoral dissertation awarded in the College of Education. She published textbooks in educational research, tests and measurement, and educational psychology. They were published as L.R. rather than Lorrie because the publisher felt a female author would not be as accepted as a male, so initials were used. The educational research text became the best-selling book of its kind and her publisher estimates that 1 out of every 2 students in the field has used this text.

The recipients of this award walk in the shadow of someone who cared for every student, and fought to make our course in educational research the best of its kind because she knew this was the way to best serve students. If you have taken the course you know what it requires and as you realize the skills you have attained through her efforts, you appreciate her efforts to this day, years after her passing.

It is anticipated that one award will be presented annually to the student and faculty member whose research best exemplifies Lorrie's high standards. In the case of multiple authors for the same paper, multiple awards will be bestowed.

The awards are determined based upon papers submitted for presentation at the College of Education Annual Research Conference. Award decisions are determined by the judgment of the faculty members serving as the L. R. Gay Award sub-Committee. Members of this sub-committee are to be selected by the entire Steering Committee and serve three-year terms. The current members of the L. R. Gay Award sub-committee are Professors Barry Greenberg, Daniel Dustin, and Adriana McEachern.

College of Education
Peer-Reviewed Papers and Posters

Physeal Growth Plate Fractures: Implications for the Pediatric Athlete

Tara J. Clark, Lindsey E. Eberman, and Michelle A. Cleary

Abstract: Pediatric musculoskeletal trauma accounts for most childhood injuries. The anatomy and physiology of the pediatric skeleton is unique as is its response to trauma. The pediatric skeleton has periods of rapid growth; therefore the effect of trauma to the musculoskeletal system may have significant long-term complications.

Musculoskeletal trauma is the primary cause of emergency department care for children and adolescents (Perron, Miller, & Brady, 2002). Musculoskeletal injuries are a leading cause of long-term morbidity and disability in pediatric patients, and may lead to loss of limb, permanent neurological dysfunction, premature growth arrest, angular limb deformity, posttraumatic arthritis, joint stiffness, and chronic pain. Pediatric orthopedic trauma management should differ from that of an adult because of the physiological and anatomical differences among populations. Pediatric skeletal characteristics include persistent growth, bone remodeling potential, elastic bone, open growth plates, thick periosteum, and smaller anatomic structures (Musgrave & Mendleson, 2002). Appropriate and timely management of these musculoskeletal injuries, in coordination with the management of life threatening injuries, is vital in minimizing long-term morbidity and dysfunction in pediatric trauma patients.

The most important difference between an immature skeleton and a mature adult skeletal system is the presence of a physis. The physis, also known as the growth plate, is the region of long bones involved in Salter-Harris fractures, the physeal injury classification system. Physeal injuries account for 15 to 30% of all skeletal injuries in children, (Greenfield, 1996; Mann & Rajmaira, 1990) occurring most commonly after the age of 10 (Della-Giustina & Della-Giustina, 1999; Greenfield, 1996). Approximately 80% of physeal injuries occur between the ages of 10 and 16 years (Peterson & Peterson, 1972; Rogers, 1970; Musharafieh & Macari, 2000). Physeal injuries are more frequent in boys than girls secondary to an overall increased incidence of musculoskeletal injuries as well as the developmental age of skeletal maturity in boys (Musharafieh & Macari, 2000; Peterson & Peterson, 1972; Rogers, 1970). Injury to the physis may be due to chronic overuse or it may be the result of an acute traumatic event. When injury to the physis is overlooked or mismanaged, growth plate impairment can occur causing a bone growth deficit (Perron et al., 2002). Growth plate problems can lead to improper growth of the limb leading to limb length discrepancies and angular deformities which persist throughout the lifetime. The purpose of this clinical research paper was to present current evidence on pathophysiology, classification, diagnosis, treatment, and prognosis of physeal fractures upon which to base best clinical practice and minimize the potential adverse effects of misdiagnosis or mismanagement of these types of injuries.

Methods

The clinical research model involved collecting data by searching the internet databases MEDLINE, PUBMed, and MDConsult with the following keywords: adolescent injuries, physeal fractures, epiphyseal fracture, growth plate, orthopedic injuries. Content was analyzed, outcomes were synthesized, and findings were critically applied to current clinical practice in order to promote changes that will foster effective and efficient methods of providing athletic training services (Portney & Watkins, 2000).

Results

Pathophysiology

The anatomy of pediatric bone (Figure 1a) consists of a diaphysis, periosteum, epiphysis, physis (growth plate), and metaphysis. The diaphysis is the primary portion of the long bone and provides tubular strength and support in axial loading. The periosteum is the double layer of connective tissue that covers the outer surface of most bones. Ligaments and tendons are interwoven into the periosteum, which serves to stabilize joints, thus supporting the mechanical functions involving movements of the joints of the body. Nervous tissue innervates the periosteum and is responsible for the pain associated with bone injuries. The epiphysis is composed of the secondary centers of ossification (bone growth) in the bone, which allow for specialized bone formation of shape and function. The epiphyseal structure also allows for the hypertrophied (increase in size) vascular epiphysis arteries to provide nutritional blood supply for the mature hyaline cartilage cell. The metaphysis is the funnel-shaped end of the long bone where remodeling of bone after a fracture most prominently occurs (Calmer & Vinci, 2002).

The primary function of the physis is rapid, integrated longitudinal bone growth. The physis (Figure 1a) is composed of cartilage, bone, and fibrous connective tissue. The cartilaginous component of the growing physis consists of four distinct zones listed in order from the epiphysis to the metaphysis: resting (germinal) cells, proliferating cells, hypertrophic/ maturing cells, and provisional calcification. Of these zones, the hypertrophic zone is the weakest link due to its limited amount of collagenous matrix and lack of significant calcification, and consequently the zone where a cleavage plane is most likely to pass as a result of trauma. Normal growth and maturation of the physis is dependent on the nutrient blood supply received from the epiphysis. When injury to the physis disrupts the vascular supply, physeal growth plate arrest and joint incongruity may occur (Perron et al., 2002).

Classification and Diagnosis

The Salter-Harris classification system (Figure 1) is the most well known and widely used classification system for growth plate injuries (Musgrave & Mendelson, 2002; Perron et al., 2002; White & Sty, 2002). The Salter-Harris classification system, based on the extent of involvement of the physis, epiphysis, and the joint, describes five types of growth plate fractures with specific prognostic and treatment implications. It is imperative for allied health practitioners to know and understand the Salter-Harris classification system to render appropriate treatment of the injury. A greater Salter-Harris fracture classification indicates an increased risk of physeal arrest and joint incongruity, predominately attributed to vascular supply disruption (Robertson, 1990; Salter & Harris, 1963).

Salter-Harris type I (Figure 1b) fractures are most frequently observed in infants and toddlers and generally require a shearing, torsion, or avulsion mechanism of injury (Perron et al., 2002). In these injuries, which represent 5-6% of physeal injuries, the fracture line passes horizontally through the physis separating the epiphysis from the metaphysis (Perron et al., 2002; White & Sty, 2002). No indication of osseous fracture to either the epiphysis or metaphysis occurs, and the line of cleavage runs through the hypertrophic zone, with the growing cells remaining on the epiphysis.

A Salter-Harris type II (Figure 1c) fracture is the most common type encountered, accounting for 75% of physeal injuries (Della-Giustina & Della-Giustina, 1999; Norlock & Stower, 1986; Perron et al., 2002; Salter & Harris, 1963; White & Sty, 2002). The line of the fracture runs through the hypertrophic zone of the physis and then out through a segment of

metaphyseal bone (Perron et al., 2002; White & Sty, 2002) leaving a metaphyseal spike attached to the epiphyseal fragment (Musgrave & Mendelson, 2002).

Salter-Harris type III (Figure 1d) fractures are intra-articular fractures of the epiphysis with extension through the hypertrophic cell layer of the physis (Perron et al., 2002; Musgrave & Mendelson, 2002; Perron et al., 2002; White & Sty, 2002). The fracture line begins on the articular surface and courses vertically through to the epiphysis and then horizontally through the peripheral aspect of the physis. This intra-articular injury creates a separate epiphyseal fragment with no connection to the metaphysis (White & Sty, 2002). These injuries account for nearly 10% of physeal injuries (Salter & Harris, 1963; Norlock & Stower, 1986; Della-Giustina & Della-Giustina, 1999; White & Sty, 2002; Perron et al., 2002).

A Salter-Harris type IV (Figure 1e) fracture line originates at the articular surface, crosses the epiphysis, extends through the full thickness of the physis, and exits through a segment of the metaphysis (Musgrave & Mendelson, 2002; Perron et al., 2002; White & Sty, 2002). A single fragment consisting of both epiphysis and metaphysis is created and is usually separated from the parent bone. These injuries account for 10% of all physeal fractures (Salter & Harris, 1963; Norlock & Stower, 1986; Perron et al., 2002; White & Sty, 2002).

The Salter-Harris type IV (Figure 1f) fracture, the most rare fracture pattern, accounting for only 1% or less of physeal injuries, may result in focal bone growth arrest (Della-Giustina & Della-Giustina, 1999; Greenfield, 1996; Norlock & Stower, 1986; Ogden, 1982; Perron et al., 2002Salter & Harris, 1963; White & Sty, 2002;). These injuries are most likely to occur at the knee or ankle, and are the result of a severe abduction or adduction injury transmitting profound compressive forces across the physis (Perron et al., 2002). This resultant axial compression crushes the physis, specifically injuring the cells of the resting and proliferative zones (Perron et al., 2002).

Clinical Presentation and Evaluation

Injury to the physis in children is common due to the inherent vulnerability of this structure. The physis is the part of the bone most vulnerable to failure and represents the weak link in this patient population (Musgrave & Mendleson, 2002; Perron et al., 2002). Children generally have increased ligamentous strength versus adults, resulting in mechanical forces stressing the integrity of the physis. Practitioners should recognize that a similar mechanism of injury resulting in a sprain or dislocation in an adult could cause physeal injuries in children (Perron et al., 2002).

Injury to the physis may be the result of an acute traumatic event or chronic overuse. The most common mechanisms for upper extremity injuries are a direct blow, collision, or falling on an outstretched arm (Gomez, 2002; Musharafieh & Macari, 2000; Perron, et al., 2002). Abduction, adduction, and torsion forces are frequently encountered with lower extremity physeal injuries (Gomez, 2002). Physical examination and history are central in diagnosing this injury. Due to occasionally insignificant findings on x-ray film, it is vital that practitioners obtain a thorough history and physical examination for a proper diagnosis. Upon physical examination, signs and symptoms range from subtle to obvious (Perron et al., 2002). Inspection for signs of deformity and swelling, palpation for deformity and crepitus, evaluation of range of motion, stability testing, neurovascular evaluation and performance tests such as impingement signs should be performed (Gomez, 2002; Wasserlauf & Paletta, 2003). Neurovascular complications are not often common in physis injuries, but any neural or vascular complications must be ruled out. Patients with humeral physeal plate fractures present with limited active abduction secondary to the orientation of the fracture in association with the deltoid tuberosity (Gomez,

2002). Point tenderness superficial to the physis is often reason enough to suspect a growth plate injury (Perron et al., 2002; White & Sty, 2002).

Radiographic Findings

Obtaining the appropriate imaging study is the first and most important step in the radiological evaluation of pediatric musculoskeletal injuries. Radiographic evaluation is the mainstay of imaging in the evaluation of the skeletally immature population (Wasserlauf & Paletta, 2003). Detection of physis injuries is difficult because of the radiolucent properties (Perron et al., 2002). Acute physis fractures may occur without any radiographic abnormalities, or may appear as a widened physis. Correlating clinical findings and selective use of contralateral comparison films to minimize diagnostic errors serve in appropriate diagnosis (Perron et al., 2002). Radiographic (X-ray) findings of Salter-Harris I fractures may reveal a physeal widening and epiphyseal displacement, but more frequently appear normal (Musgrave & Mendelson, 2002; White & Sty, 2002). In this case, diagnosis is made clinically by demonstrating tenderness over the area of the growth plate.

Salter-Harris fractures II, III, and IV are usually evident on plain X-ray film, but types I and V can be radiographically occult in the acute setting often leading to misdiagnosis (Perron et al., 2002; White & Sty, 2002). Judicious use of stress radiography (an X-ray while stress is applied to the joint) frequently performed under orthopedist supervision can be helpful in acute conditions (Perron et al., 2002). Ultrasonography, bone scintiography, and magnetic resonance imaging (MRI) have all been advocated for the assessment of these injuries as well (Naranja, Gregg, Dormans, Drummond, Davidson, & Hahn, 1997; Perron et al., 2002; Rizzo, Bould, Lyden, & Asnis, 1993). MRI scans performed within 10 days of fracture may change the Salter-Harris classification, especially in confusing fracture patterns that are difficult to interpret on radiographs. MRI performed early (between 3 and 17 weeks after fracture) can demonstrate transphyseal bridging or altered growth lines in physeal fractures before these become apparent on plain radiographs (Canale, 1998).

Treatment and Prognosis

Education for parents and patients regarding treatment and potential growth abnormalities is an important aspect of care. Although, negative radiographs are common, X-rays with point tenderness over a physis indicates a Salter-Harris type I injury and should be treated as such. Treatment for type I injuries consists of splint immobilization, intermittent icing, and referral to an orthopedic surgeon for re-evaluation and follow-up (Perron et al., 2002). Due to the continuity with nutrient blood supply, Salter-Harris type I fractures carry an optimistic prognosis and infrequently result in any growth disturbances. However, possible exceptions occur at the proximal radius, proximal and distal femur, and proximal tibia due to premature physeal closure and posttraumatic growth arrest due to repetitive compressive stress at these locations (Hogan & Gross, 2003; Howald, Weiss, & Sizonenko, 1993; White & Sty, 2002).

Type II injuries can be similarly managed with splinting and outpatient follow-up as long as there is no angulation or significant displacement of the fracture segment (Perron et al., 2002). As with type I fractures, growth is usually preserved since the reproductive layers of the physis remains connected to the epiphysis and blood supply, making for a favorable prognosis (Perron et al., 2002; White & Sty, 2002).

Type III fractures frequently require open reduction and internal fixation surgical techniques. Anatomic alignment of the epiphyseal fracture fragment for both blood supply maintenance and joint congruity must be achieved for appropriate bone growth (Perron et al., 2002). Near perfect alignment of the articular surface is critical for successful outcomes. The

prognosis for normal bone growth is generally positive, but more guarded than with type I or II injuries (Perron et al., 2002; White & Sty, 2002). Anatomical position must be reestablished to restore normal joint function and prevent growth arrest (White & Sty, 2002). With greater displacement and/or fragmentation, the risk for blood supply disruption, and subsequent growth disturbances increases (Della-Giustina & Della-Giustina, 1999; Kaedin & Whitehead, 1998; Norlock & Stower, 1986; Perron et al., 2002; Salter & Harris, 1963).

Type IV injuries have an increased likelihood of operative intervention to achieve anatomic reduction, and even with good reduction carry a significant risk of growth disturbances (Norlock& Stower, 1986; Perron et al., 2002; Salter & Harris, 1963). Open reduction and internal fixation are sometimes necessary (White & Sty, 2002). Growth arrest and joint deformities are higher risks depending on the degree of blood supply disruption from the epiphysis (Perron et al., 2002; White & Sty, 2002).

Type V injuries typically effect the lower extremity, and patients with type V injuries are usually casted and endure prolonged non-weight-bearing (Perron et al., 2002). With this type of fracture, there is no or minimal displacement, and diagnosis is often made in retrospect once a bone growth abnormality has been identified (Canale, 1998; Musgrave & Mendelson, 2002; Perron et al., 2002; White & Sty, 2002).

Clinical Implications

It is imperative for health practitioners that work with children sport participants to remain current on the evidence upon which they base their clinical practice. Practitioners must understand that the anatomical and physiological characteristics of the adolescent musculoskeletal system differ from that of an adult and therefore should be treated differently. With nearly 15-30% of all pediatric skeletal injuries involving injury to the physis, it is vital for practitioners to be able to properly evaluate and recognize these injuries. Understanding the mechanism of injury, obtaining a thorough history, and a proper physical examination are key components of correctly diagnosing physeal injuries. The presence of open physes results in the ability to remodel certain angular deformities that would be intolerable in adults. The desire to avoid iatrogenic or unwanted results of treatment for physeal injuries can limit the options for rigidly stabilizing pediatric fractures. Clinical evidence supports acknowledging that differences exist in the appropriate management of pediatric trauma compared to adults. Appropriate recognition and orthopedic treatment of injuries such as physeal fractures will allow the avoidance of potential long-term disabilities as a result of mismanagement. As health care practitioners, athletic trainers must constantly remain informed of the current standard of care and correctly recognize physeal fractures for appropriate management and to minimize potential long-term disability and dysfunction caused by these orthopedic injuries.

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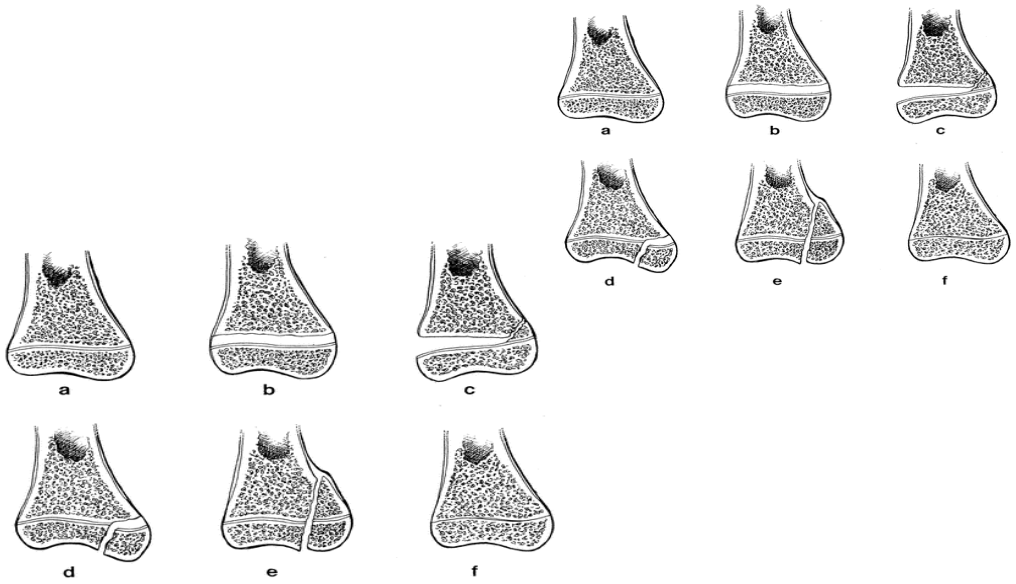
Figure 1. *a,* the distal end of a long bone consists of the metaphysic, physis, and epiphysis; *b,* a Salter-Harris type I fracture involves the physis only; *c,* a Salter-Harris type II fracture includes a metaphyseal spike attached to the epiphyseal fragment; *d,* a Salter-Harris type III fracture propagates across the physis and then across the epiphysis, exiting the joint surface; *e,* a Salter-Harris type IV fracture transverses the metaphysic, physis, and epiphysis; *f,* a Salter-Harris type V fracture is a physeal torus fracture resulting from axial compression.



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Feminine Concepts of Leadership and Power: A New Framework for Development Ethics and Education Development

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Abstract: The last twenty years have been a period of growth in education development, development ethics, and female leadership studies. Literature indicates meaningful connections between these disciplines and points towards reassessment of obstacles to systemic change. A new term *en*powerment is coined to define a proposed framework for ethical development practice.

Exacerbated by rapidly changing political and economic demands, the fractious context of education development is characterized by a competitive split between two theories in practice: paternalistic, supply-driven aid versus non-political, project-focused programs. According to the United Nations Education, Scientific and Cultural Organization (UNESCO), n.d., aid efficiencies are negatively impacted by inconsistent, largely top-down implementation policies. UNESCO describes the work of the majority of aid agencies as follows:

> They are very active and carry out activities as they please, often preferring to make their own concept of development progress, rather than respect the goals of the recipient country, or take into account its capacity to absorb the aid. (p. 5)

Questions intrinsic to post-WWII development include: (a) What direction and by what means should societies develop? (b) Who is morally responsible for beneficial change? and (c) What obligations do rich societies have towards poor societies (Crocker, 1998, p. 1)? These questions are addressed by the emerging field of development ethics. The purpose of this paper is to analyze these dilemmas from a new point of view, that of the female leader, in order to create a unified framework for ethical, effective practice.

Method

A review of the extant literature was used to collect data for this paper. The data collection procedure involved a search of ERIC documents, policy briefs, executive summaries, books, professional journals, as well as significant web sites, including UNESCO. Once these data were collected, they were placed in categories for analysis. We conducted interrelated reliability analysis by reading and re-reading the data and crosschecking to keep track of common themes and patterns that emerged throughout the literature. Three critical issues that have received attention in the arena of ethical development practices include: (a) education development, (b) development ethics, and (c) female leadership.

Theoretical and Historical Perspective

Temporal and theoretical connections exist between three seemingly unrelated disciplines: education development, developmental ethics, and female leadership studies. All three experienced significant growth during the 1980s. With the publication of *In a Different Voice* in 1982, Carol Gilligan identified aspects of women's moral reasoning that researchers find manifest in both private and public spheres. Systematic, authoritative discourse on development ethics began in 1987 at the first conference of the International Development Ethics Association (IDEA) in San Jose, Costa Rica (Goulet, 1996). In 1990 the first World Conference on Education for All (WCEFA) attempted to coalesce and catalyze state-of-the-art Western resources, technology, and expertise in extending education opportunities to the world's poor.

The essential work of researchers and theorists in these disciplines is a search for connections, a vigorous effort to apply new ideas to nagging dilemmas.

Education Development

The struggle to overcome failures of traditional top-down welfare theory in the education sector mirrors broad historical themes in the development field. Throughout the post-WWII 40s, 50s, and 60s, comprehensive economic planning focused efforts on manpower development, industrial and agricultural growth, and technology transfer. By the 1970s, critics were taking this dependency approach to task for fostering underdevelopment and spreading neocolonial ideas. The debt crisis of the 80s brought austerity measures and efficiency planning to the table, but the creation of the Human Development Index in the 90s redirected attention to human resource development, inclusion, and participation. The tragedy of the theoretical debate among donor nations has been its real effect on the poor. While the pendulum swings between technocratic and transactional aid processes, powerless societies stagnate because "the legitimacy of individual nation-states depends, in part, on their effectiveness in promoting [the] globally established vision of national development—a vision which does not necessarily correspond to local conditions or resources" (Chabbott, 2003, p. 49).

Despite 50 years of unremitting efforts, the history of international development reveals high levels of frustration caused by repeated failures to achieve systemic change (Chabbott, 2003). The cyclical dynamic of international development agencies is characterized by periods of frenzied goal setting and action planning, followed by extensive fieldwork, culminating in reflection and bitter disappointment. A period of stagnation often results. For example, education workers, having fallen short of the lofty Year 2000 goals of the WCEFA, remain as tenaciously committed to their institutions as they are to the traditional, top-down means used to create them. UNESCO describes the salient features of the current state of international education development in several ways: (a) developing nations' vague discourse and declarations of intent provide aid workers with an insufficient framework to guide responsible decision making, (b) member nations' inability to engage in upstream planning and downstream implementation is largely due to the absence of strategic vision, technical expertise, and analytical data, (c) a shift in attention to developing national education policies has placed focus on political exigencies, rather than educational needs, and (d) financially dependent nations experience organizational imbalances in which nationals are replaced by expatriates at the planning and implementation levels (UNESCO, n.d.). The time is ripe for reconceptualization. Given that the customary organizational, philosophical, and ethical underpinnings of international development have been hierarchical and autocratic, indeed masculine in nature, analysis of the situation based on a different conception of leadership and power is appropriate.

Development Ethics

David Crocker (1998), one of the founders of IDEA, defines development ethics as "ethical reflection on the ends and means of socioeconomic change in poor countries and regions" (p. 1). The work of development ethicists is to push current thinking to another level by asking probing questions and viewing dilemmas from multiple points of view. In 1968 the Swedish economist Gunnar Myrdal (1969) introduced his effort to reconceptualize the gap between objective and values-based development interventions by asking the following:

> …how can the student of social problems liberate himself from (1) the powerful heritage of earlier writings in his field of inquiry…(2) the influences of the entire cultural, social, economic, and political milieu of the society where he lives, works, and earns his living and his status; and (3) the influence stemming from

> his own personality, as molded not only by traditions and environment but also by his individual history, constitution, and inclinations? (p. 3)

Amartya Sen, the 1998 Nobel Prize winning economist and ethicist, has achieved such freedom of thought with his groundbreaking entitlement and capability theories. Sen (1999) views development globally, as a process rather than an end, applicable not just to poor countries but to any sector of any society in which poverty, opportunity, equity or quality of life are at issue. At the heart of Sen's work lie his confidence in liberty and potentiality and his rigorous analysis of the effects of material distribution on these essential aspects of well-being. Sen uses the term entitlements to describe not those things people have a right to receive, but the acquisition power they possess to obtain them. Capabilities refer to the range of options people have available to them (their capability set) and things people do to achieve them (their functionings). Implicit in these theories is the necessity of individual freedom and democratic discourse, to which he assigns three levels of importance: (a) direct importance – freedom of choice has value in and of itself, regardless of results: in determining a market's attractiveness, results should be treated as a separate issue, (b) instrumental importance – liberty of thought and action can lead to secondary positive results, and (c) constructive importance – freedom is an educative process that plays a critical role in public discourse and the assemblage of community consensus on values, goals, and priorities (Gasper, 2000).

Gasper (2000) reiterates that "capability analysis, by taking us beyond the markets…brings us to more open political choices about values rather than choices hidden behind financial calculations" (p. 993). Education is central to this theory; it guarantees transparency through informed discourse and expands the range of available entitlements and individual capabilities. Sen (1999)criticizes the traditional welfare approach to development, writing "the focus has to be…on the freedoms generated by commodities, rather than on the commodities seen on their own" (Gasper, 2000, p. 996). Sen permeates development ethics with human agency; he takes discourse beyond the traditional debates between direction and cooperation, welfare and independence, objectivity and particularity. Development becomes both the allocation of necessary resources for achieving individual and societal freedoms and the removal of structural obstacles to achieving liberty. Sen's theories fall short, however, when viewed operationally; "gaps between opportunity and action, and choosing and doing, while not ignored have not been deeply investigative" (Gasper, 2000, p. 999). Leadership bridges this gap. According to Newstrom and Davis (2002), "Leadership is the process of influencing and supporting others to work enthusiastically toward achieving objectives. It is the critical factor that helps an individual or a group identify its goals and then motivates and assists in achieving the stated goals" (p. 163).

Female Leadership

Although Sen does not explicitly address leadership styles, he provides direction by distinguishing between sympathy and commitment to the well-being of others. Gasper (2000) maintains that "sympathy' is concern for others where one's own well-being rises/falls as their state of well-being or achievement rises/falls; 'commitment' is concern that exists regardless of effects on one's own feelings of well-being (or despite negative effects)" (p. 997). Leaders tending towards a sympathetic response to the condition of others naturally depend on detached, objective principles of justice in decision-making. Committed leaders utilize an ethic of care, as described by Carol Gilligan (1982), because it is more relational and responsive to the needs of others. Sympathetic leaders, in order to preserve their own well-being in the face of oppression, poverty, and powerlessness, wield power over others while committed leaders selflessly exercise

power with or give power to the other. The latter conception of leadership – committed, caring, relational, responsive, and selfless – has been identified as female in nature (Brunner, 1995; Stanford, Oates, & Flores, 1995).

Rather than assigning these characteristics gender specificity, however, female leadership theorists use their research on women to put forth a non-traditional leadership style accessible to any interested leader (Evans, 2001; Kark, 2004). The voice described by Carol Gilligan (1982) in her landmark book *In a Different Voice* is thematically unique rather than gender specific. Its association with women was established through empirical observation, arising from experiences shaped by differences in social context, status and power relationships, and reproductive biology (Gilligan, 1982). Recent research suggests that gender differences are also strongly affected by distinct brain structures. In the chapter entitled "Women's Rights and Women's Judgment," Gilligan (1982) identifies a salient feature of this unique voice, an ethic of responsibility which is at "the center of women's moral concern, anchoring the self in a world of relationships and giving rise to activities of care…" (p. 132). Referred to in the literature as the ethic of care, this judgment framework is characterized by a transactional, responsive, relational practice of morality, as opposed to the detached, objective, principles-based masculine ethic of justice (Shaipro & Stefkovich, 1997). According to Gilligan, philosophers have assumed that justice is determined by weighing competing rights within a rubric of absolute moral injunctions. Feminine morality is more circumstantially contingent and holistic; for women "the personal is political" (Brunner, 1995, p. 5). Women's moral judgment is exercised through distinctive leadership behaviors. Archetypal characteristics of female leaders include sublimation, commitment, consensus building, and communication. Female leaders are described as wielding power through others, being non-confrontational, and exerting quiet influence. They are highly motivational, team-oriented, and collaborative. Women tend to lay a firm foundation for success and then delegate power to qualified others (Brunner, 1995; Stanford et al., 1995).

The ethic of care is also translated into a feminine definition of power. The dominant trajectory of history has been the achievement of control, command and domination over others – power over. A subordinate arc defines power as the capacity to render social good through cooperation – power with/to. Traditionally, analysts have viewed power and ethics within political arenas, such as nations, states, and local governance structures, ignoring families, religious organizations, schools, and other institutions of daily life (Brunner, 1995). These are the historic domains of female leadership, whether formally acknowledged or relegated to the background, where power with/to plays out. Furthermore, whereas masculine conceptions of power tend towards small concentrations of individuals exerting influence upon the greatest number of others, feminine power is all about production, or the nurturing of power in others. This is not to say that power production involves transferring power, granting authority, or conferring rights to the previously powerless. Rather, the feminine leadership process of power production involves development – removal of impediments to empower others in achieving their broadest possible capability set.

Enpowerment. The colloquial usage of the term empowerment fails to accurately describe the potent connection between feminine leadership and Amartya Sen's (1999) capabilities theory. By definition, *em*powerment is the act of giving power to another or of bestowing license or authority (Weiner, 1986). This implies that power is either a limited resource, transferred on the basis of goodwill and sympathy, or that power is a mental construct, defined and created by an entitled class. Sen (1999) argues that power has value, is measurable, and is inherent to personhood – even the very poor place significant value on freedom (Gasper, 2000). Power is an

unlimited, renewable resource, and it is the leader's task is to unleash its potential to transform vision into reality. It is suggested that a new term, *en*powerment, accurately enunciates the process of bringing others into the state of power. *En*powerment is derived from the ideas that all people are born with the capability to achieve some measure of power and that the purpose of leadership is to create an environment in which power can be used to create and discern choices. Above all it is power with – it requires leadership of the confident, committed, and caring. *En*powerment is a process grounded in the feminine transactional form of ethics, in which decisions are formed on the basis of a holistic appraisal of internal and external situational factors, interested stakeholders, and principles of justice. It is inherently relational, sustainable, expansive, and self-proliferating.

The process of *en*powerment thrives on conflict and complexity; real power is achieved through democratic discourse and debate. As in the Hegelian dialectic, new ideas are synthesized from competing theses and antitheses. The leadership style that best enables the *en*powerment process is feminine in nature, involving listening, pulse-taking, vision and story sharing, intuiting, creating, and reflecting (Funke, Pankake, & Schroth, 2002). *En*powerment is essential in pluralistic environments in which many views must coexist, and in which women, natural multi-taskers, are uniquely qualified to foster successful, productive, peaceful arrangements. *En*powerment gives rise to an environment conducive to human agency rather than acquisition; the process can be messy but also pragmatic and, ultimately, economically beneficial.

Conclusions and Implications

A need exists for the development of discourses about feminine concepts of leadership and power across cultures. Currently, leaders are very conscious of changing social, political and economic demands. This is experienced within a general organizational reform movement that influences all areas leadership. The challenge for leaders is meeting the changing expectations for social and professional demands, without losing sight of the necessity to meet the needs of those they serve and protect their best interests in an ethical manner. The research implications for the nexus between empowerment and capabilities theory in the broad field of international development aid, and education development in particular, are manifold. Applicable qualitative and quantitative analyses could be conducted in the following areas: (a) archetypal characteristics of successful development leaders, both national and expatriate, at international, national, and local planning levels; (b) archetypes of organizational structures that foster feminine leadership behavior; (c) leadership recruitment and training, across cultures, and (d) common organizational attributes of successful development case studies, in education and other sectors, from the viewpoint of recipients at the national and local level.

By teasing out the threads of success – when, where, and how it occurs – researchers can build a model of leadership that may break the terrible recurring pattern of lofty goal setting, well-intentioned efforts, and disappointing failures in international development aid. Given that this research will be generated by donor nations, the prospect of using such models to assist the vast numbers of poor in already 'developed' nations is particularly inspiring. It is easy to forget that as citizens of the wealthiest of nations, we are not all benefiting from our prosperity. Ethically speaking, initiatives such as Education for All (cite) should be aimed at all underserved populations in all nations. Granted, limited material resources require strict priority setting in the development process of expanding capability sets. But by viewing the entire process from the perspective of *en*powerment, it is possible to set more ethically consistent priorities, goals, and plans of action. The instrumental and transformational effects of such a paradigm shift remain to be seen.

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Effects of Active Dehydration on Balance in Normothermic Participants

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Abstract: The purpose of this investigation was to identify balance deficits as a result of dehydration in a warm humid environment. Our investigation employed a clinical balance testing system in an upright stance to better mimic sport specific activity.

Exercise in hot, humid environments has led to an aggressive investigation of the physiological effects of performance implications of heat and hydration. Dehydration has been demonstrated to reduce physical performance (Barr, 1999; Casa, 1999; Hedley, Climstein, & Hansen, 2002; Sawka, Montain, & Latzka, 2001; Terrados, & Maughan 1995; Yoshida, Takanishi, Nakai, Yorimoto, & Morimoto, 2002). The physiological effects of dehydration on exercise performance are becoming well understood; however, the literature lacks comprehensive conclusions and clinical implications concerning the effects of dehydration on components of physical performance.

Performance has been described as an all inclusive term concerning agility, balance, coordination, speed, strength, and endurance (Barr, 1999; Casa, 1999; Hedley et al., 2002; Sawka et al., 2001; Terrados et al., 1995; Yoshida et al., 2002). Performance can best be described as a combination of high-level sensory input and motor output and is a highly cognitive and neurological function that incorporates balance by utilizing the sensorimotor system.

Balance is an integral aspect of performance and requires the use of muscular force after the input of visual and kinesthetic information to maintain the position of the body over its center of support (Irrang, Whitney, & Cox, 1994). Balance is a measure of the reaction forces produced by the body's center of gravity moving around a fixed axis of support (Guskiewicz, Riemann, Perrin, & Nasher, 1997; Guskiewicz, Ross, & Marshall, 2001; Riemann, & Lephart, 2002). Balance allows the body to self-evaluate joint position, movement, direction and speed based on a combination of somatosensory, visual, and vestibular input to the central nervous system (Riemann, Myers, & Lephart, 2002; Vuillerme, Danion, Forestier, & Nougier, 2002). Therefore, balance is a complex function of the nervous system and is a necessary component in order to achieve quality performance. The purpose of this investigation was to identify balance deficits as a result of dehydration in a warm, humid environment. Our investigation employed a clinical balance testing system and an upright stance to better mimic sport specific activity.

Methods

Experimental design and procedures. The research design consisted of a test-retest design with one within-subjects experimental group. The dependent variable was balance and was measured using a computerized clinical balance testing system (Biodex Balance System^{TM}, Biodex Medical Systems, Inc., Shirley, NY). The Biodex Balance System displays output for overall stability index (OSI), anterior/posterior stability index (APSI), medial/lateral stability index (MLSI), and percent time in zone. The OSI represents the variance of foot platform displacement in degrees in all directions; a high score is indicative of decreased stability. The APSI represents the variance of foot platform displacement in degrees for motion in the sagittal plane (parallel to the body's midline). The MLSI represents the variance of foot platform displacement in degrees for motion in the frontal plane (perpendicular to the sagittal plane).

Percent time in zone scores represent the percentage of the 30-s trial in which the participant's center of gravity remained within 0-5^{o} (zone A), 6-10^{o} (zone B), 11-15^{o} (zone C), and 16-20^{o} (zone D) of deflection. Measures of the dependent variable were obtained in euhydrated (prior to the heat stress trial) and in dehydrated conditions (after the heat stress trial).

Familiarization session. A familiarization session was conducted at the Florida International University Sport Science Research Laboratory 24-hours prior to the investigation. Informed consent, approved by Florida International University's Institutional Review Board, was obtained and demographic information was amassed prior to the collection of baseline data. Participants completed a health history questionnaire prior to participation and were excluded if they had experienced any of the following: heat-induced illness, chronic health problems, orthopedic limitations, cardiovascular disease, metabolic disease, or respiratory disease within the last year. Balance assessment was practiced during six separate trials (30-s each) to reduce the learning effect of balance testing (Cachupe, Shifflett, Kahonov, & Wughalter, 2001). Participants were instructed to return to the laboratory the following day.

Data collection session. Upon arrival at the laboratory, participants were instructed to completely void urine, and nude body mass, urine color, and urine specific gravity data were recorded. Body mass was measured using a digital medical platform scale (model BWB-800S, Tanita Inc., Brooklyn, NY). A urine color chart (Human Kinetics, Champaign, IL) was used to determine urine concentration with the closest shade on the chart recorded. Urine specific gravity was measured using a clinical refractometer (model 300CL Atago Inc., Japan). Euhydrated body mass was measured within $\pm$1% of baseline body mass (Convertino et al., 1996). Participants performed the heat stress trial (mean ambient temperature = 27.9 $\pm$0.7 ^{o}C, relative humidity = 50.0 $\pm$8.8%) until a criterion 3.0% body mass loss (Convertino et al., 1996) was achieved. As a preventative measure, heart rate, core body temperature, blood pressure, and rating of perceived exertion were monitored at intervals throughout the heat stress trial. No participant was permitted to continue if core body temperature exceeded 40.0 ^{o}C. Heart rate was measured using a Polar heart rate monitor (Polar Electro Inc., Woodbury, NY). Core body temperature was measured via ingestion of a CorTemp Ingestible Core Body Temperature Sensor (HT15002, HQInc., Palmetto, FL) tracked throughout the heat stress trial and recovery period with the CorTemp Miniaturized Ambulatory Data Recorder (HT150016, HQInc., Palmetto, FL). Every 15 min of the heat stress trial, blood pressure was assessed using a stethoscope and sphygmomanometer (American Diagnostics, West Babylon, NY). Rating of perceived exertion was measured with a Borg scale (Borg, 1998).

Recovery period. At the conclusion of the trial, participants were instructed to dismount the treadmill, remove clothing, and towel dry. Participants voided urine and criterion percent body mass loss was confirmed. Urine color was determined and specific gravity data were recorded. The recovery period was designed to eliminate the effects of hyperthermia and allowed participants to rest in a thermoneutral environment (26.7 $\pm$0.9 ^{o}C; 39.9 $\pm$ 5.1 % relative humidity). Following the return to baseline core temperature, balance testing was repeated. At the end of the data collection session, dehydrated participants were required to orally rehydrate with cool water.

Participants. A random sample of 19 healthy, active volunteers yielded 10 participants (seven men and three women; age = 25.2 $\pm$4.7 y; ht = 177.9 $\pm$8.2 cm; and body mass = 83.4 $\pm$14.8 kg) achieving a mean of -3.03 $\pm$.35% body mass loss. Participants were instructed to avoid alcohol, caffeine, and non-prescription medication ingestion, as well as partaking in dehydrating behaviors (i.e., sauna, diuretics, sweat suits, etc.). In addition, participants were instructed to

cease eating and drinking at 12:00AM midnight the night before to aid in inducing dehydration during the subsequent heat stress trial.

Statistical analysis. Hydration status in the euhydrated and dehydrated condition were compared using dependent t-tests. Descriptive statistics were used to report cardiovascular measures, thermoregulatory data, and environmental conditions, and percent time in zone. A 2 (condition) x 3 (balance stability index) ANOVA with repeated measures was used to identify significant differences on the balance index scores. Data were analyzed using the SPSS series 11.0 Statistical Package for Windows (SPSS Inc., Chicago, IL) with significance set at $P \leq 0.05$ for all analyses.

Results

Participants were significantly dehydrated following the heat stress trial based on two of three appropriate criteria (see Table 1): body mass loss ($t_9 = 13.388$, $p \leq .001$, mean = -2.6 $\pm$0.6 kg) and urine color ($t_9 = -6.082$, $p \leq .001$; mean=-2.05 $\pm$ 1.07 shades) but not urine specific gravity ($t_9 = -1.940$, $p = .084$). Core body temperature prior to exercise in the euhydrated condition and following recovery (mean recovery= 44.0 $\pm$13.7 min) in the dehydrated testing condition were not significantly different between euhydrated (37.31 $\pm$0.37 ^{o}C) and dehydrated (37.56 $\pm$0.13 ^{o}C) conditions (see Table 2).

No significant differences between the euhydrated and dehydrated conditions on OSI, APSI, and MLSI were found. However, a trend toward increased stability scores in the dehydrated condition for OSI and APSI were revealed and are displayed in Figure 1. A visual comparison (see Figure 2) of euhydrated and dehydrated percentage time in zones revealed decreased percent time in zone A (closest to center).

Discussion

The current research surrounding the effects of dehydration on balance is limited. Comparisons of posturagraphic data from participants performing a two hour cycle ergometer exercise trial (Derave, DeClerQ, Bouckaert, & Pannier, 1998) concluded that dehydrated participants were significantly more unstable than euhydrated participants. A period of rest followed exercise, decreasing the confounding factors of hyperthermia and fatigue; however the change in sensory conditions (seated to standing) may have influenced the outcome of the study. Derave, et al. also studied the effects of a passive dehydration method, concurrent sauna sessions, on balance, and reported no significant effect on balance. Decrements in balance have been demonstrated when fatigue was induced through exercise and worsened in the dehydrated condition (Gauchard, Gangloff, Vouriot, Mallie, & Perrin, 2002). Hydration status was measured through fluid consumption or non-consumption, and was therefore not congruent with similar hydration investigations. In addition, the posturographic tests were performed immediately following the exercise trials indicating that balance deficits may be influenced by fatigue and hyperthermia.

Prior to the heat stress trial our participants were confirmed to be euhydrated and normothermic. Following the heat stress trial the participants became significantly dehydrated and had returned to the normothermic condition. The level of dehydration achieved in our investigation was moderate (-3.03 $\pm$.35%) compared to mild (-2.7 $\pm$0.4%) achieved by Derave et al. (1998), yet Derave found greater balance deficits. The force platform utilized by Derave et al., measured sway and velocity of center of foot pressure, which may be poorly associated to the calculated stability indices and degree of deflection measured within the Biodex Balance System^{TM}.

Compared to a previous investigation (Susco, Valovich McLeod, Gansneder, & Schultz, 2004), the recovery period in the current study was sufficient to decrease fatigue. Our research design was similar to that of Derave et al. (1998), with the exception of exercising in upright stance which we believed would better mimic sport specific activity by using a treadmill exercise heat stress trial. In addition, Derave et al. employed a static balance assessment which is appropriate for afflicted or aged participants but may not best evaluate physically active participants (Hinman, 2000). Hinman suggested that static balance tests do not incorporate all the domains of balance that are necessary for dynamic functional activities and therefore suggested the use of dynamic balance testing with the Biodex Balance System™. The Biodex Balance System™ dynamic stability testing employs movement of both center of pressure and the base of support incorporating somatosensory, visual, and vestibular input.

Researchers have found increased motion in the anterior/posterior plane, sway from heel to toe, in any condition (Derave et al., 1998; Gauchard et al., 2002). We also suggest that the ankle strategy within the anterior/posterior plane is affected by dehydration greater than that of the medial/lateral ankle strategy. Furthermore, the findings for percent time in zone suggest a trend toward decreased stability (see Figure 2). In the dehydrated condition, the participants demonstrated less time spent in zone A, which is closest to the center and greater time spent in the other three zones, suggesting greater deflection from center.

Clinical Implications and Suggestions for Further Research

The purpose of this investigation was to identify the effects of active dehydration on balance. Our research design provided a normothermic and minimized fatigue environment for dehydrated testing. We were unable to find significant differences between the euhydrated and dehydrated condition. Still, we were able to demonstrate a trend toward deficient balance in the dehydrated condition. This trend implies altered performance in an athletic setting, ultimately leading to poor performance and potential injury. Significant findings may have been limited by an insufficient number of participants, Biodex Balance System™ sensitivity, and severity of dehydration level. We suggest further investigation is necessary and should retain more participants and test at higher levels of dehydration.

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Nude Body Mass*		Urine Color*		Urine Specific Gravity	
Euhydrated (kg $\pm$ sd)	Dehydrated (kg $\pm$ sd)	Euhydrated (mean $\pm$ sd)	Dehydrated (mean $\pm$ sd)	Euhydrated (mean $\pm$ sd)	Dehydrated (mean $\pm$ sd)
83.4 $\pm$14.8	80.8 $\pm$14.3	3.9 $\pm$1.0	6.0 $\pm$0.9	1.021 $\pm$.005	1.024 $\pm$.004

Table 1.*Euhydrated and Dehydrated Nude Body Mass, Urine Color, and Urine Specific Gravity Measurements**Participants (n= 10) were significantly dehydrated based on body mass loss (t_9 = 13.388, $p \leq .001$, mean = -2.6 $\pm$0.6 kg) and urine color (t_9 = -6.082, $p \leq .001$; mean= -2.05 $\pm$ 1.07 shades) but not urine specific gravity (t_9 = -1.940, p = .084).

Group (n = 10)	Euhydrated ($^{o}C \pm$ sd)	Dehydrated ($^{o}C \pm$ sd)
Core Body Temperature	37.31 ±0.37	37.56 ±0.13

Table 2. Euhydrated and Dehydrated Core Body Temperature

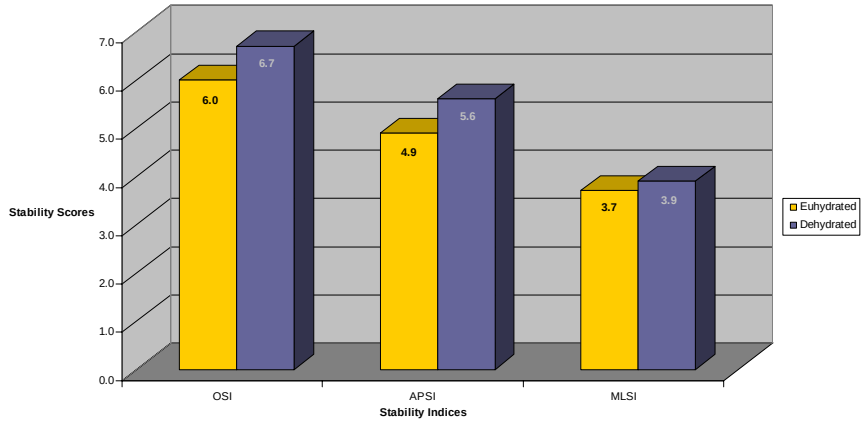

Figure 1. Mean Stability Index Scores. Mean stability index scores comparing the euhydrated and dehydrated conditions.

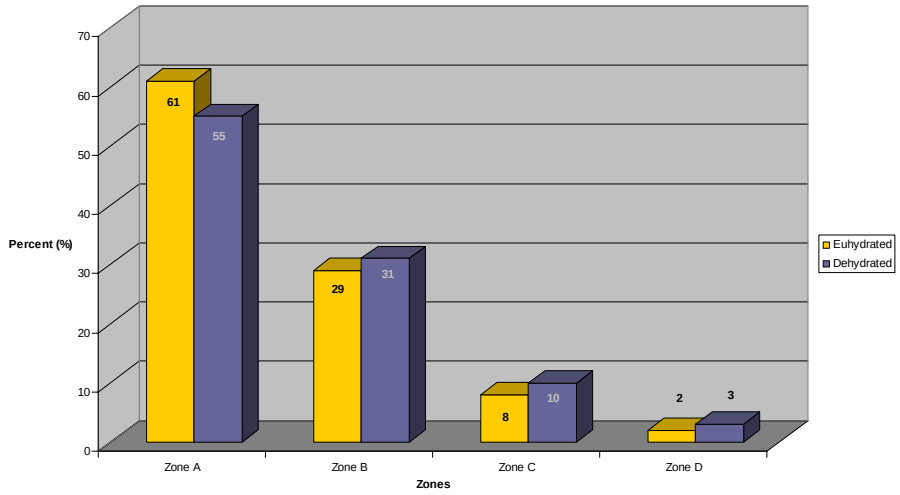

Figure 2. Percent Time in Zone. Percent time in zone values comparing the euhydrated and dehydrated conditions.

Content and Methods of Teaching Literacy: The Effect of One-on-One Tutoring in Preservice Clinical Education in Two Low-Performing, Diverse School Settings on the Effectiveness of Preservice Teachers' Reading Instruction

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Abstract: This is a study of preservice teachers' ability to teach reading to struggling, diverse students, after participating in a school-embedded course incorporating a one-on-one tutorial directly supervised by reading experts. Changes in reading performance as well as plans to analyze changes in the preservice teachers will be discussed.

This paper presents a description of the first phase in a line of research that has a dual focus: (a) the improvement of students' reading performance in grades three and four and (b) the improvement of the preparation of preservice teacher candidates in implementing effective reading instruction. To initiate this line of research, the College of Education at Florida International University collaborated with individual Miami-Dade County Public Schools to implement a school-based clinical experience that would benefit struggling readers and preservice teacher education candidates.

The need for this program emerged from two areas of concern. The first area relates to the critical need to support struggling readers. In Florida, students must demonstrate appropriate levels of reading achievement in order to progress to the next grade. In fact, state law mandates that students in the third grade who do not pass the Florida Comprehensive Assessment Test (F-CAT) be retained. Many of these students lack the most basic reading skills and abilities and need explicit, systematic reading instruction. It is difficult for classroom teachers to meet the needs of low-performing student for intensive instruction within a classroom setting. Therefore, a primary aim in the development of this clinical experience was to provide support for struggling readers, in a one-on-one tutorial. In this context, the struggling readers' strengths and areas for growth may be assessed, and targeted instructional support may be planned and implemented.

The second area of concern that prompted the development of this clinical experience focused on the need to enhance the preparation of preservice teacher education candidates in the area of reading education. Throughout the country, the reading needs of students have increased the demand for teachers, including first year teachers, who are well prepared to teach diverse literacy learners. The College of Education at Florida International University has had a long history of requiring three reading courses in the Elementary Education program. This already exceeds by two the number of reading courses offered at many institutions across the country. Recently, the state of Florida Department of Education required that Florida public institutions of higher education offer a fourth reading course. Based on the findings in *Prepared to Make A Difference: The Report of the National Commission on Excellence in Elementary Teacher Preparation For Reading Instruction* (2003) conducted by the International Reading Association, that concluded that a tutorial was a highly-valued experience contributing to a beginning reading teacher's efficacy to teach reading, it was decided to create a school-based clinical experience as part of the fourth reading class. In this course, teacher education candidates would have direct experiences and responsibilities for providing reading instruction to struggling

readers in diverse, urban educational settings just prior to their final internship (student teaching) experience. When fully implemented, candidates' success in this clinical experience would help to ensure that upon exiting the Elementary Education program, they would be fully prepared to teach reading to all learners.

This paper will present results from the initial implementation year of this clinical experience. The following will be shared: pre -post test gains related to students' reading performance as a result of one-on-one tutoring. Results of preservice teacher candidates' development based upon the analysis of candidates' written reflections will be analyzed in the next phase of the study.

Theoretical Framework

Low reading achievement, more than any other factor, is a primary concern of chronically low-performing schools. The most fundamental responsibility of schools is teaching students to read; however, there is an alarming prevalence of struggling and poor readers. Further, although twenty percent of elementary students nationwide have significant problems learning to read, the rate of reading failure ranges from 60 to 70 percent for African-American, Hispanic, limited-English speakers and children from low socio-economic backgrounds (Moats, 1999). The intent of state and national mandates in reading is to reach these populations of struggling readers. Research (Keehn, Harmon, Hedrick, Martinez, & Perez, 2001) indicates that well-prepared teachers are the key.

A recent study found there was a need for coursework to focus, at least in part, on the instruction of struggling readers (Duffy & Atkinson, 2001). The majority of preservice teachers in the study did not feel prepared to teach these students until they received instruction that explicitly addresses teaching struggling readers in elementary school. Additionally, Duffy and Atkinson (2001), in directly teaching struggling readers in elementary schools, advocate the use of assessments as key in helping preservice teachers learn to teach struggling and non-struggling readers effectively.

Of various strategies that are used in teacher education programs, extensive community-based immersion experiences, coupled with coursework, seem to have the most promise in teacher preparation programs (Sleeter, 2001). The clinical experience designed for implementation in the Miami-Dade County Public Schools seeks to actualize these research-based findings to support preservice teacher preparation and improve reading instruction.

Purpose

The purpose of the current research was to examine the effects of one-on-one tutoring in preservice clinical education in two low-performing, diverse school settings on the effectiveness of preservice teacher education candidates' reading instruction of struggling readers.

Research Questions

How does one-on-one tutoring impact the reading performance of struggling readers? How does participation in the delivery of one -on-one tutoring impact the preparation of preservice teacher education candidates in the area of reading education?

Research Design

The design of this study utilized mixed methods. Pre- and post test scores were compared quantitatively to assess gains in reading performance. Preservice teacher candidates' written reflections were analyzed qualitatively for evidence of depth of learning. This second part for the qualitative is in process with the collection of data at the end of the term just completed.

Data Collection

The *Basic Reading Inventory* was administered at the beginning and at the end of the tutoring sessions to measure the elementary students' reading performance. These inventories were administered and analyzed by the teacher education candidates, under closely-supervised conditions.

The preservice teacher education candidates were asked to reflect regularly in writing upon the following: What did you do that went well? How did it link to the assessment? What are you going to teach next? The candidates' reflections will be analyzed qualitatively for emerging patterns.

Sample

Forty-five third and fourth grade students in two low-performing (as identified by the state's formula for performance on the standardized test, FCAT), and diverse (having a high percentage of minority students) elementary schools were selected to participate in one-on-one reading tutoring. The students were individually identified by their classroom teachers as struggling readers. Many of the students had been retained once in third grade due to failing scores on the F-CAT, and many of the students would probably be potential retainees in the third grade due to low Stanford Achievement Test, SAT-9, scores from the second grade.

Forty-five, middle-class, minority (80 % Hispanic, 20% African American) preservice teacher candidates, who were enrolled in a newly designed undergraduate fourth literacy course provided one-on-one reading tutoring for the elementary students.

Clinical Experience

Undergraduate students who were enrolled in a newly-designed fourth literacy course provided effective reading instruction for struggling readers as identified by their classroom teachers. One-on-one tutoring took place in two low-performing, diverse, elementary schools in a clinical setting. The elements of the tutoring were: administration of the *Basic Reading Inventory*, instruction in specific reading comprehension strategies, an interest inventory, instruction in lesson planning, and a case study of the tutored student.

Procedure

Two classes of preservice teacher candidates attended classes in a low-performing, diverse elementary school setting prior to beginning the tutoring. They were instructed on administering reading assessments, reading instruction based on assessment, and discussions on the importance of selecting developmentally appropriate, leveled texts. The preservice teachers received instruction on how to analyze what they learned about the student from the *Basic Reading Inventory* (Johns, 2005) to formulate reading lessons tailored to the student's reading needs. In addition to administering the *Basic Reading Inventory*, they also administered an interest inventory and fluency checks. The preservice teacher candidates were randomly paired with a student to tutor. Twelve one hour, one-on-one tutoring sessions were conducted, during which they focused on reading comprehension of text. The preservice teacher candidates developed reading and reading response lesson plans each week for the duration of the tutoring sessions. The reading lesson plans were reviewed by the instructors prior to implementation with the students and the preservice teachers were mentored throughout the process. Preservice teachers wrote reflections following the sessions. Each preservice teacher administered the *Basic Reading Inventory* at the beginning and at the end of the twelve hour-long tutoring sessions. The tutoring sessions took place in the library of the respective elementary schools.

Results

The effect on reading achievement of the elementary school students was measured quantitatively by comparing the scores of a beginning *Basic Reading Inventory* to the same students' ending scores on the *Basic Reading Inventory* with a paired samples t-test. Individual students' scores were analyzed with a paired samples t-test in order to examine each student's reading achievement gains. Comparison of the pre and posttest scores showed statistically significant reading gains, $t = 11.31$ ($df = 44$) $.00<p<.05$. The mean of the posttest scores ($M = 1.45$, $SD = 1.11$) was significantly greater than the mean of the pretest scores ($M = 2.53$, $SD = 1.03$).

The second aspect of this line of research will analyze the preservice teacher candidates' reflections qualitatively for recurring patterns. The researchers will be looking for patterns of awareness of the needs of minority students and an increased of depth of knowledge towards working with struggling readers.

Implications

The Florida Comprehensive Assessment Test (F-CAT) as defined by the State Department of Education determines whether a student is promoted to the next grade level. It is the deciding factor for third grade students in elementary schools. In the school district, six thousand third-grade students were retained in 2003 the first year of implementation retention; nine thousand third-grade students were retained in 2004, many of the original ones for the second time. There is a critical need to explore methods of reading interventions for all students, in addition to examining the preparation of teachers who will be able to teach these struggling readers well in any school.

The main thrust of studies conducted on preservice, one-on-one reading tutoring suggest that not only would preservice teachers likely be successful in providing reading instruction to young students, but they would also probably profit from the experience in preparation for their future roles as teachers of reading in the classroom because of the links between coursework and classroom practices (Cabello, Eckmier, & Baghieri, 1995). In addition, preservice teachers need coaching and feedback as they explore literacy events. Having teacher educators provide guidance and assistance might transform the way preservice teachers conceptualize and practice literacy in plural societies (Hoffman, 1996).

Additionally, in recent years, major demographic transformations have occurred in schools; children from ethnic and racial minority cultures make up the largest percentage of students from most urban districts (Marshall, 1996). Students from diverse populations continue to increase exponentially, while the numbers of teachers consist primarily of White, middle class women, who sometimes lack knowledge concerning cultural minorities, the requisite background cultural knowledge of literacy learning, in order to reach students from diverse backgrounds effectively. While the populations of preservice teacher candidates remain predominately the same in this county, the teachers in the study are themselves minority students, yet their middle class background does not mirror that of the students. Therefore, this report on research is only the initial phase in a line of longitudinal research. Further research is needed to follow these preservice teacher candidates into their first year of teaching to examine the effects of their teacher preparation program on their teaching of reading and the impact it has on the reading performance of the students they teach. Implications for related future research could include measures of the effects of exposure to teaching reading to diverse students who are in low-performing schools upon the preservice candidates' ability to impact their future students.

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Integrating Individuals with Developmental Disabilities into the Open Labor Market

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Abstract: This qualitative study addresses attitudes concerning employing individuals with developmental disabilities (DD) and identifies factors limiting their integration into the workplace. Four themes emerged: lack of infrastructure, awareness, family support, and the need for ongoing training and development. A proposed model of integrating individuals with DD in the workplace is discussed.

Historically, people with DD were considered unfit for work and, hence, rarely a part vocational training and work activities. Many individuals with DD lived in restrictive environments isolated from their communities, minimizing their opportunities for independence, productivity and social integration. This environment created unfavorable attitudes that reinforced their marginalization (Konig & Schalock, 1991).

The issue of integrating individuals with DD into the workforce has become a nation-wide agenda. The U.S. Department of Education (1999) has recognized the importance of the transition of students with exceptional needs from school to the workplace and adult life. The goal of disability and rehabilitation research is to maximize the inclusion, social integration, employment, and independent living of individuals with developmental disabilities (Melia, Pledger, & Wilson, 2003). The National Institute on Disability and Rehabilitation Research has focused on developing new methods, technologies, and approaches for eliminating the environmental, cultural, and social barriers that prevent people with disabilities from full inclusion in all aspects of society. Despite these efforts and studies that have demonstrated most individuals with DD (even severe disabilities) are very capable of exceptional job performance (Bellamy, Rhodes, Mank, & Albin, 1988; Konig & Schalock, 1991), over 75% of individuals with DD remain unemployed (U.S. Department of Census, 2000). The barriers faced by workers with disabilities when entering the workforce are enormous, and employer attitudes can be a major impediment to employment (Bolton & Roessler, 1985).

Employers who have had limited experience interacting with disabled employees may believe that they present too many problems (Nathanson & Lambert, 1981) or that they are neither capable of performance nor able to meet the employer's expectations. Yet recent surveys of employers of individuals with developmental disabilities reveal general satisfaction with work performance when comparing their productivity, turnover rates, absenteeism, and safety risks with those of non-disabled employees, according to a national organization on mental retardation (ARC, 2001). It is vital that we (researchers) as well as members within organizations (executives, managers and other employees) are aware of and understand an organization's attitudes and consequent behaviors to effectively interact with developmentally disabled employees (Nathanson & Lambert, 1981). Understanding organizational members' attitudes may eliminate attitudinal barriers through the creation of a new awareness around the enthusiasm, capabilities and successful performance of individuals with DD, leading to more favorable attitudes. The purpose of this study is to examine the attitudes that employers and members of organizations have towards individuals with DD and to identify factors that facilitate integration of people with DD into the open labor market. Two research questions guided the study: (a)

What are three employers' attitudes concerning employing individuals with DD and (b) What are factors limiting the employment of individuals with DD?

Conceptual Framework

Despite suffering from social disadvantages, many individuals with developmental disabilities view employment as important to them (Ormel, Lindenberg, Steverink, & Verbrugge, 1999), yet many remain unemployed (Konig & Schalock, 1991). Over the last few decades, several vocational rehabilitation approaches were developed aiming to improve the employability of people with DD including prevocational training programs, sheltered workshops and transitional employment. However, these traditional approaches did not significantly improve the employability of people with DD, failing to meet their objectives (Wehmeyer, Agran, & Hughes, 1998). A new paradigm of a socioecological framework for understanding disability encourages researchers to acknowledge the dynamic interaction between the person with DD and the environment (e.g., the work place) (Engel, 1977; Tate & Pledger, 2003). To facilitate successful integration of individuals with DD in the open labor market, adequate training and development during transition from school to work (Morgan, Ames, Loosli, & Feng, 1995), and development of training programs for supported employment (Handler, Doel, Henry, & Lucca, 2003) are critical. These factors also encourage more independent living and improve the quality of life.

Transition from school to work for individuals with DD is a planned process of moving an individual from a school program to adult life in the community (Wehmeyer & Kelchner, 1997). However, educators and community stakeholders do not share the vision for a continuum of service for students with exceptional needs (Melia & Pledger, 2003). The director of a supported employment agency commented, "Educators feel that their responsibility to students with exceptionalities ends upon graduation and therefore, are not generally involved in planning for the future of these students after graduation." Effective transition planning must consider the multifaceted lives of individuals with DD, including education, community participation, and skills for independent living, social awareness, and employment. Educators need to develop links and raise awareness of community groups, businesses, and vocational institutions for those with exceptional needs to develop to their full potential as participating members of society (Wehmeyer & Kelchner, 1997).

Supported employment enables people with DD to be employed in an integrated employment environment, and to obtain appropriate training, together with ongoing support to maintain employment within an integrative environment, to ensure the best balance between a person's capabilities and interests and the job requirements, as well as to lobby for wages and benefits equal to those of other workers with the same job responsibilities (fair pay) (Bellamy, Rhodes, Mank & Albin, 1988; Konig & Schalock, 1991). Although supported employment has been successful in integrating individuals with DD into the open labor market, it is moving slowly, sparking interest in what the attitudes of employers and organizational members are towards individuals with DD.

Methods

A qualitative approach was employed to develop an understanding of organizational members' perceptions of the developmentally disabled in the workplace, and to identify employers, customers and co-workers' views concerning the key factors that facilitate the integration of individuals with DD into the workplace. The data were gathered through responsive, semi-structured interviews of two job coaches and a supervisor working with individuals with DD. The sample was limited to three individuals, as this was an exploratory

examination of the attitudes of employers, co-workers and customers and the phenomenon of integrating individuals with DD into the open labor market. Data were analyzed by coding interview transcripts for emerging categories, concepts and themes. To strengthen the study, triangulation was employed by using multiple sources of two job coaches and one supervisor in obtaining multiple perspectives to provide corroborating evidence and to shed light on common themes (Creswell, 1998; Denzin, 1978).

Emerging Themes

Based on the literature review, the expectation was to find unfavorable attitudes as the contributing factor to low employment rates of individuals with DD (Konig & Schalock, 1991; Rusch, 1990). However, as the job coaches and supervisor shared their daily experiences and observations around the attitudes of organizational members, other themes emerged as limiting employment factors. The important themes and concepts that emerged were the need for infrastructure to create more employer and employee awareness as well as to provide continual, ongoing training and support. Also important is making sure that the individual's skills, abilities and interests are matched to the job and type of work.

Lack of Infrastructure

Supported employment aimed at enabling people with disabilities to find meaningful work has helped increase community awareness, eliminate segregation, and dispel unfavorable attitudes of disabled workers. However, due to limited resources and a lack of infrastructure, agencies providing supported work programs are too few to accommodate all individuals with DD. When individuals cannot obtain entry in an agency program, they lack the support or training to help integrate them in the workforce. Typical sheltered workshop staff lacks knowledge of what skills should be taught, how best to teach the skills, and how to structure their programs to facilitate movement toward non-sheltered, competitive employment (Pomerantz & Marholin, 1977). All three participants agreed that because of a lack of infrastructure, many individuals with DD remain unemployed. This inadequate, low percentage of employment leads to a lack of awareness around the capabilities and work attitudes of individuals with DD.

Lack of Awareness of Organizational Members (Employers and Co-workers)

Organizations, business owners, and managers are reluctant to hire the developmentally disabled because they are unaware of their abilities and the valuable work they can provide (Bellamy et al., 1988) with proper training, development and support. All three participants indicated any existing unfavorable attitudes and uneasiness toward people with DD was partly created due to their limited interaction.

One job coach noted the importance of employers' awareness of people with DD: "I would say that 90% of the people (co-workers, customers) are supportive; however, it is important to raise employer and organizational awareness that people with developmental disabilities are competent and capable individuals." Interaction among employees led to realization that individuals with DD are productive. The participants noted that the more that trained individuals with DD are integrated into the open labor market, the more positive attitudes are created, eliminating biases that many managers currently hold. MM contends, "It is exposure. Some employers don't know what to expect, what these individuals are capable of. It is also a learning process for the employer as well."

Continuous Training and Job-Person Match (Career Development)

Programs that ensure that the skills and appropriate work behaviors are taught increase the success of supported employment and integration of individuals into the workplace (Bellamy et al., 1988). It is important that tasks and skills are taught and completed in a work setting rather

than in a classroom, as the more closely individuals with DD train in an actual setting, the better their accuracy and job performance (Bellamy et al., 1988). Training allows for individuals to eventually become independent in their job. JD mentioned, “Dan is a good example; he is dropped off in the morning at his work and then he gets picked up in the afternoon.” In addition, matching a person’s abilities and interests to the job or task improves performance (Konig & Schalock, 1991; Leach, 2002). JD observed:

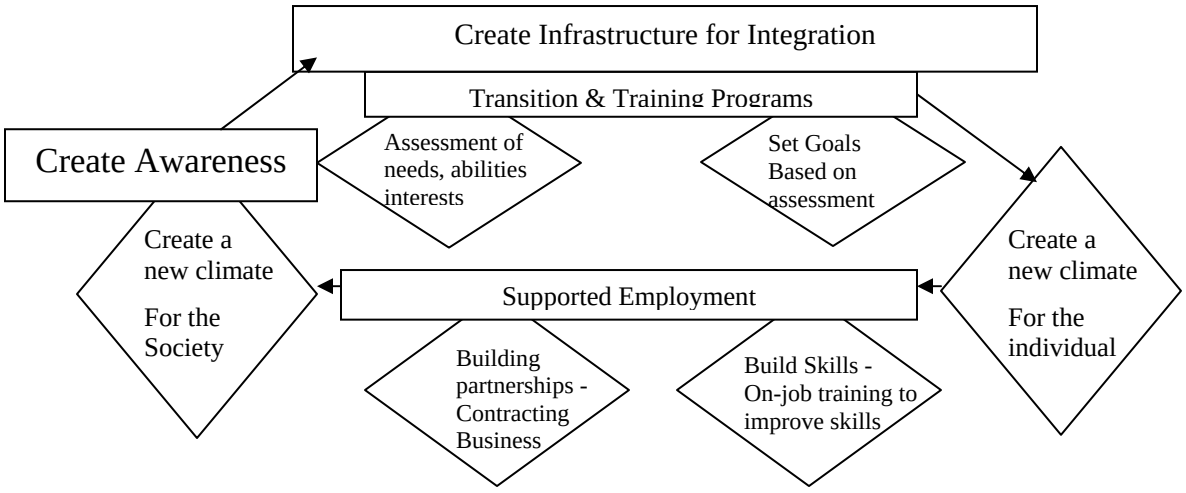
> Anna does really great work – she was put on a job site really suitable to her personality. She is very quiet and does not like to talk much. Her job does not require a lot of interaction with others and she is doing really well. Anna is a special case – she was put into a job fit for her to succeed. It is good for everybody around as well.

Building a Workable Model of Successful Integration

“People with developmental disabilities make excellent employees, they are enthusiastic, caring and willing to help… they need to be given a chance, and with support they do succeed” (JD). When employing individuals with DD, the most important organizational adjustment is not the adoption of specific policies and programs, but a change in employee attitudes and organizational culture by building an infrastructure that develops and trains individuals with DD to be successful in the open labor market (Leach, 2002). This infrastructure should provide adequate training and development for smooth transitions to work programs, assessing an individual’s needs and setting job goals and objectives that match an individual’s skills, abilities and interests. In addition, supported employment programs should allow for further development on the job and the building of business partnerships that contract and employ individuals with DD. From the findings, a preliminary integration model is discussed (see Figure 1)

Figure 1.

Workforce Development related to Individuals with Developmental Disabilities



Create an Infrastructure for Integration

Effective vocational resource and job placement programs committed to meeting an employer’s business needs with highly capable and enthusiastic individuals valued as productive members of any work force require an infrastructure of proper transition and training. Transition should include assessing the needs, skills, abilities (Wehmeyer & Kelchner, 1997) and interests of the individual. Setting objectives and job matching (Konig & Schalock, 1991; Wehmeyer & Kelchner, 1997) are integral parts of a successful employment situation for individuals who are

developmentally disabled. Following a transition program, supported employment assists in finding suitable work, providing support, and furthering development of skills.

Transition –training and development. Successful transition requires a widespread awareness of the issues and challenges facing individuals with exceptional needs when they leave school and enter the community (Morgan et al., 1995). Transition planning needs to be future focused, identifying a vision for the future and having strategies that work toward the achievement of that vision. In doing so, planning will identify goals and objectives, time lines, roles, and responsibilities for the individual with DD repetition. The transitional planning must work toward facilitation of self-determination, self-advocacy and independent living skills (Rosenberg & Brady, 2000; Wehmeyer et al., 1998).

In addition, ongoing training and development are important and linked with assessing the needs of students and young adults with developmental disabilities to identify their potential career and job paths (Wehmeyer & Kelchner, 1997). Based on the outcomes of this assessment, efforts should assist in setting goals and objectives that lead to the placement in a work environment that accommodates their interests and abilities (Wehmeyer & Kelchner, 1997).

Assessment of needs. Individuals have different needs, abilities and interests that must be evaluated to ensure that their program of work and support is appropriate. All participants agreed that identifying an individual's strengths and weaknesses and identifying key support areas is crucial in person-job planning. Long-term and short-term goals and objectives need to be identified, responsibility assigned to various people involved in the transition planning and time frames developed for each of the objectives (Wehmeyer et al., 1998). Adaptive skills in the basic area of social and interpersonal skills must be an integral part of any model of training for disabled individuals. Many individuals fail because of personal appearance, poor personal hygiene, and lack of appropriate decision skills (Rosenberg & Brady, 2000). All participants agreed that transition programs must provide appropriate social skill activities to improve interpersonal skills of disabled individuals.

Goals and objectives based on assessment. Career and job development helps students to translate personality, skills, abilities and interests into occupational terms and to blend their work role with other life roles in developing a healthy lifestyle (Konig & Schalock, 1991). Individuals with DD need assistance in learning about the structural relationships among occupations and in using goals and strategies to formulate ideas.

Create a new climate for the individual. Proper training, assessment and setting objectives lead to a new climate in organizations, and new opportunities for individuals with DD. The next step is to assist the individual in a supported employment program that will lead to a more independent and fulfilling life (Rusch, 1990).

Supported employment. Individuals with DD need assistance with employment through the use of mentoring and other supportive services. Successful elements of supported employment emphasize principles of a person-centered approach, beginning with vocational profiling, an excellent tool for job matching, then continuing with training and maintaining elements of supported employment. All supported employment services must be directed toward the changes that lead to increased work effectiveness based on principles of: (a) self-determination – freedom and ability to make choices; (b) person-centered planning – a process of discovery of individual aims, aspirations and skills that focus on the individual rather than service provision constraints; (c) social and economic inclusion – regular life experiences that include family, friends and a social life; (d) choice and independence; (e) employable - all individuals who want to work can work in a job that matches their skills and needs, and (f)

workplace learning – people learn about life by living, not by having life experience in segregated life centers (Leach, 2002).

Build skills. Job coaches assist individuals with DD on the job to improve skills and to address potential barriers. They identify the individual's skills and interests; find appropriate jobs; make the necessary startup arrangements; and organize the training, supervision, and support necessary for individuals to keep their jobs for a long period (Wehman & Kregel, 1985).

Build partnerships. Although job coaches have been effective in building partnerships with local organizations to employ more individuals with DD, more partnerships and workplaces are required. It becomes a vicious cycle. Organizations will not commit due to their lack the awareness of the capabilities of people with DD. It is difficult to build awareness if organizations are reluctant to hire people with DD. In building awareness, there must be more frequent and constant interaction. More frequent interaction will only begin when successful infrastructure is in place to support individuals with DD.

Create awareness. To create awareness among organization about the capabilities and work performance of individuals with DD, a successful working relationship must be mutually beneficial. In hiring an individual with developmental disabilities, employers are bringing a motivated and loyal employee into their organization, creating a more diversified workplace while taking advantage of government tax credits (Konig & Schalock, 1991). For the individual with DD, entering the workforce represents the ultimate validation, a sense of purpose that yields an exceptional eagerness to perform. In an age when recruiting and maintaining reliable unskilled entry-level workers is a problem, employers increasingly hiring individuals with DD are finding a creative and profitable solution.

Create a new climate for society. Programs of transition, training and supported employment seek jobs suitable for individuals with DD and provide personal job coaches with on-site training and supervision to new employees, placing workers in a wide range of positions including receptionists, food service workers, porters, and messengers. These programs lead to increased employment opportunities for individuals with DD, which will bring a new awareness to organizational members about the capabilities and enthusiasm that these individuals bring to the workplace.

Implications

The study identified issues that impede the employment of individuals in the open labor market and concludes with a preliminary model of key components for successfully integrating individuals with DD in the workplace. The main objectives are to enable people with DD to be employed in an integrated employment environment, assessing their needs and providing appropriate training together with ongoing support to ensure the best balance between a person's capabilities and interests and the job requirements (Bellamy et al., 1988; Konig & Schalock, 1991; Leach, 2000; Rucsh, 1990). Providing this infrastructure will not only lead to more awareness among organizational members, but will also maintain employment for individuals with DD at equal compensation and benefits, equal to those of other workers with the same job responsibilities (Konig & Schalock, 1991). Increasing numbers of disabled people employed in integrated employment settings and making fair wages reduces dependence on welfare payments and programs and maximizes tax contributions (Konig & Schalock, 1991).

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A Typology of Workplace Commitment Elements and Antecedents Affecting Organizational Effectiveness

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Abstract: The purpose of this paper is to present a typology workplace commitment of workplace commitment illustrating levels, elements, and antecedents of organizational and individual commitment. This typology focuses on elements that can be manipulated by the human resource development (HRD) researcher and practitioner to affect organizational performance.

Performance improvement in an organization goes beyond the commonly accepted principles of good management and effective leadership by engaging the emotional commitment of the employee (Katzenbach, 2000). Commitment is the differentiating factor between top performing companies and those of average performance (Katzenbach, 2000). Emotionally engaged employees are more productive and more customer-focused. High-levels of employee commitment are positively correlated with superior financial performance in organizations demonstrated by significant increases in operating and net profit margin (International Survey Research, 2001; Gallup, 2002; Watson Wyatt Global Consulting, 2003). Individuals and teams that are committed to the values and goals of an organization have a higher morale and lower turnover, increased job satisfaction, and increased productivity (Cohen, 2003; Meyer & Allen, 1997; Mowday, Porter, & Steers, 1982).

Gallup (2002) estimates that employees uncommitted to their work and organization cost the U.S. economy up to $350 billion per year. More than a third of employees worldwide admit to having low levels of commitment to the job and the company and instead are more committed to their careers (TNS Worldwide, 2002). Only one in twelve (8%) are “company-oriented” employees, predominantly committed to their company (TNS Worldwide, 2002). Levels of employee commitment in the USA are significantly lower than half of the world’s other major economies, placing USA companies at a disadvantage when competing in the global marketplace (International Survey Research, 2001). By understanding when and how commitments develop and how they shape attitude and behavior, organizations will be able to manage it more effectively (Meyer & Allen, 1997), and create a positive environment that sustains commitment. The purpose of this paper is to develop a typology that helps HRD practitioners understand and increase commitment.

Conceptual Framework

Since organization and management science emerged in the early 1900s, an evolution has occurred in concepts about the nature and functions of organizations and the criteria for organizational effectiveness (Katzenbach, 2000). There are numerous ways to conceptualize and model an organization, with profound consequences for effectiveness criteria. How an organization is designed and how it functions have important implications for how processes and people are managed and motivated. Toward the early 1970s, organizational theorists began questioning behaviorist models like Taylorism (Taylor, 1911), bureaucracy (Weber, 1946), and administrative control (Simon, 1957). Such rigid programs could easily become maladaptive, giving rise to a trained incompetence that would contribute to both ineffective and inefficient organizational performance.

The rapid pace of change and high level of competition requires a greater emphasis on engaging the hearts and minds of employees – the human relation perspective (Weick, 1979). Mayo's (1945) pivotal work demonstrating the Hawthorn Effect illustrated commitment and loyalty were often more important then self-interest and formal sanctions in increasing productivity. The human relations school gave rise to work directed at informal, normative structures; organizational cooperation, motivation, morality and commitment.

Commitment has been defined as the degree of pledging or binding of the individual to a set of behaviors and motivates one to act (Meyer et al., 1993). Once identification with the organization begins, concern with the broader interests of the organization (reputation, survival, and success) increases. This broader interest generates activity and resource exchange (reflecting enhanced concern between firm and employee) fostering further identification. Katzenbach (2000) describes an energized workforce as high performance (those that perform better than industry norms) and whose emotional commitment enables them to make and deliver products or services that constitute a sustainable competitive advantage.

Employees with strong organizational affective commitment are emotionally attached to the organization having a greater desire to contribute meaningfully to the organization, choose to be absent less, work harder (Mathieu & Zajac, 1990), improving production (Randal & Cote, 1994) and overall job performance (Meyer & Allen, 1997). Managers with strong affective commitment report higher levels of compliance with strategic decisions and avoidance of budgetary slack in financial planning (DeCotiis & Summers, 1987) and are more willing to engage in organizational citizenship or extra-role performance (Meyer et al., 1993).

Method

ERIC, PsycInfo, and ABI Inform were selected with the assistance of a reference librarian as most representative of education, psychology, and business for a structured literature review. Databases were searched from the 1970s because organizational structure moved towards a human resource approach during that time. The following descriptors were used separately: workplace commitment, organizational commitment, affective commitment, employee emotional commitment, career, profession and occupational commitment, job commitment, work group and team commitment. In addition, organizational and workplace commitment, career and job commitment were each paired with commitment antecedents and consequences. Each descriptor set produced a list of records that were reviewed for relevancy. The search resulted in 3985 articles of which 567 addressed workplace issues, not general societal trends such as societal commitment or familial commitment. Articles, non-specific to the workplace, were eliminated as were duplicate articles. Articles were then examined for the antecedents or consequences of commitment in the workplace resulting in 125 articles to analyze. Abstracts were read and categorized by (a) elements of commitment, (b) antecedents to commitment, and (c) consequences of commitment.

Content analysis is used to quantify and analyze the presence, meaning and relationships of concepts, then make inferences about the messages within the text to draw out conclusions. The text was coded and broken down into manageable categories on a variety of levels and themes. Relational analysis was used in examining the information coded. This analysis allow us to organized certain levels and factors of workplace commitment into a typology. A typology provides a mechanism for chunking or grouping, which allows large amounts of information to be collapsed into more convenient themes or categories that are easier to process, store, and comprehend (Carper & Snizek, 1980).

A Typology of Workplace Commitment

Commitment in the workplace or understanding how people become committed to an organization is multifaceted (Meyer & Allen, 1997) consisting of the elements, antecedents and consequences, and forms such as organizational (affective), job, career, team, and supervisory commitment. The results of factor analysis concluded that sufficient discriminate validity (reduction in concept redundancy) exists among affective organizational commitment, job commitment, career commitment (Chang, 1999; Morrow & Goetz, 1998; Morrow & Wirth, 1989), and group (team) commitment to consider these as independent forms of commitment in the workplace. Considering this, these independent forms of workplace commitment are reframed into two distinct levels – organizational commitment (organization and supervisor) and individual commitment (job, career, and team) to create a typology of workplace commitment including the levels, as well as the antecedents and consequences of workplace commitment. The structure of the typology identifies levels of workplace commitment, the antecedents to workplace commitment and consequences or outcomes of workplace commitment (See Table 1).

Table 1
Levels and Element to Improve Organizational Effectiveness

Levels of Commitments		
Antecedents to Organizational Commitment Commitment to the organization and supervisor	Antecedents to Individual Commitment Commitment to one's job, career, and team	Consequences of commitment
Congruency	Congruency	Organizational citizenship
Interesting work	Interesting work	Extra role performance
Clarity of purpose	Feedback	Increased Accountability
Equity and Fairness	Autonomy	Increased Job Satisfaction
Feedback		Increased Motivation
Empowerment		Improved Performance
Autonomy		Improved Production
		Lower Absenteeism
		Lower Turnover

Organizational Commitment

Organizational commitment is the measure of strength of the employee's identification with the goals and values of the organization (Mowday et al., 1982) and supervisor. Committed individuals exert extra effort, desire organizational membership (Morrow, 1993), protect company assets, and share company goals and values (Meyer & Allen, 1997). Supervisory commitment includes the strength of an individual's identification with the supervisor and internalization of the supervisor's values. Identification occurs when the subordinate admires certain attributes, such as attitudes, behavior, and accomplishments. Internalization occurs when the subordinate adopts the attitudes and behaviors of the supervisor because they are congruent with the subordinate's value systems (Becker, 1992). Commitment to an organization is related positively to a variety of desirable work outcomes including employee job satisfaction, motivation, and performance, and related negatively to absenteeism and turnover (Mathieu & Zajac, 1990). Organizational commitment can be measured as either attitudinal or calculative. Attitudinal, referred to as affective (Meyer, Allen, & Smith, 1993), or internalization and identification (O'Reilly & Chatman, 1986) is the employee's emotional attachment and identification with the organization (Cohen, 2003; Meyer & Allen, 1997; Mowday et al., 1982;

Porter, Steers, Mowday & Boulian, 1974). Employees continue with the organization because they want to do so (Meyer & Allen, 1997; Mowday et al, 1982) and feel proud to be part of the organization, respecting its values and accomplishments (O'Reilly & Chatman, 1986). The calculative or "side-bet" (Becker, 1960), also referred to as continuance (Meyer & Allen, 1997) and compliance (O'Reilly & Chatman, 1986), signifies the extent to which employees feel committed to their organization by virtue of the cost that they feel is associated with leaving it and their need to remain with the organization (Becker, 1992; Meyer & Allen, 1997).

The affective (attitudinal) commitment approach provides a clearer and more focused scale of organizational commitment (Cohen, 2003) because the correlation between antecedents and attitudinal (affective) measures are stronger than those measures of the calculated or continuance approach (Meyer & Allen, 1997; O'Reilly & Chatman, 1986). In addition, many existing measures of organizational commitment are attitudinal (Ko, Price, & Mueller, 1997), and the construct validity of affective (attitudinal) commitment is supported, while the construct validity of continuance and compliance commitment is questionable (Ko et al., 1997).

Individual Commitment

Individual commitment is the measure of strength of the employee's identification with the values of other individuals and peers within the organization (team commitment), and his/her work (job commitment) and careers (career commitment) and encourages individuals to exert extra organizational citizenship behavior as active positive contributions and avoid engaging in harmful behaviors. Team commitment is an individual's identification and sense of cohesiveness with other members of a group. The importance of team commitment is its enhancement of social involvement that reinforces the social ties that the individual forms with the organization (Randal & Cote, 1991).

Job commitment is the degree to which a person identifies psychologically with his/her work and the degree to which one's work performance affects one's self-esteem and self-image (Rabinowitz & Hall, 1977). Career commitment is defined as the magnitude of an individual's motivation, attitude, affects, belief and behavioral intentions toward an occupation or vocation or the degree of centrality of one's career for one's identity (Blau, 1995; Hall, 1971).

Antecedents to Commitment in the Workplace

Understanding the antecedents to commitment allows HRD practitioners to build and maintain highly effective organization. Congruency, interesting work, clarity of purpose, feedback, equity /fairness, empowerment, and autonomy are antecedent elements that lead to organizational commitment. The antecedents that lead to individual employee commitment are congruency, interesting work, feedback, and autonomy. These antecedents produce psychological states that lead to positive consequences for the organization and individual. Understanding the antecedents to commitment allows HRD practitioners to build and maintain highly effective organizations.

Congruency is the quality of agreement that exists between the employee's values and interests and those of the organization. If congruency exists between a person's interests, preferences, abilities (Holland, 1985) and values (Katzenbach, 2000), and organizational factors in the work environment, employees become more emotionally committed to the organization leading to improved performance (Holland, 1985; Katzenbach, 2000). Congruency or "fit" between the individual and his or her job/career increases commitment to the career and/or job (O'Reilly, Chatman, & Cadwell, 1991). Designing and building employee roles that are aligned with employees' values, abilities and interests lead to organizational effectiveness (Katzenbach, 2000; Nelson, 1999).

Interesting work holds the individual's attention, is challenging and rewarding by utilizing a variety of skills and knowledge, and is significant to the organization. Job characteristics such as challenge, skill variety (different activities and talents required), task identity (doing a job from beginning to end with visible results), task significance (the impact on the lives of workers and the organization), degree of autonomy (freedom, independence and discretion in scheduling work and determining procedures) all improve commitment to the organization (Mathieu & Zajac, 1990; Nelson, 1999), to the job (Hackman & Oldham, 1976), and one's career (Varona, 2002). The more important a task or job component (job significance) is, the greater the level of job commitment and satisfaction, motivation and performance (Hackman & Oldham, 1976). Organizations that ensure interesting work will improve employee commitment. HRD practitioners that allow for job and skill variety, independence or discretion in sequence, methods, procedures, quality control will improve organizational effectiveness.

Clarity of purpose provides a clear identification of the intentions, ideas, goals and plans of the organization allowing employees to be informed, ask questions, share information, and have a clear sense of direction. Organizations that provide a clear sense of direction (Greenberg, 1994), adequate explanation of new policies (DeCotiis & Summers, 1987; Rhodes & Steers, 1981) and purposereport high levels of organizational commitment (Mathleu & Zajac, 1990), workgroup commitment and individual commitment (Konovsky & Cropanzano, 1991)

Equity and fairness maintains a balance between and within the organization and its employees. Affective commitment and commitment between peers and supervisor is strengthened when employees' perceptions are of a fair, trusting, and equitable environment (Konovsky & Cropanzano, 1991; Rhodes & Steers, 1981).

Feedback is the degree to which employees receive information that reveals how well they are performing on the job. Feedback that promotes continuous improvement and constant communication with employees leads to the development of organizational commitment and enhanced performance (Katzenbach, 2000; Nelson, 1999; Varona, 2002).

Empowerment gives authority to the employees to make decisions about their work. Organizational commitment is stronger among employees who are allowed to participate in decision-making and empowered to carry out their work (DeCotiis & Summers, 1987; Meyers & Allen, 1997; Rhodes & Steers, 1981). Empowerment, autonomy, and mutual accountability focus employees on doing a job well and encourage them to lend a hand to a co-worker or department that needs help (Katzenbach, 2000). Giving people latitude, flexibility, and empowerment to make decisions increases the chance that they will perform as desired bringing additional initiative, ideas, and energy to their jobs (Nelson, 1999).

Autonomy is the degree of freedom, independence and discretion an employee is allowed in scheduling work and determining procedures. Increased autonomy strengthens organizational commitment (Mathew & Zajac, 1990), increases job satisfaction, and contributes to job commitment (Hackman & Oldham, 1975).

Implications for HRD and Future Research

HRD's principal purpose is to improve organizational performance through increased productivity, efficient work processes, and individual contributions (Swanson & Arnold, 1996). One trend effecting modern HRD practices is greater expectation of meaningful work and employee involvement (McLagan, 1989). A major focus of HRD interventions is an effort to change employee behavior to enhance performance. Commitment of organizations and individuals to each other, the process and the product, is vital to increased productivity and efficiency.

Each element in this typology can be influenced by HRD practitioners, who can manipulate the elements at both the organizational and individual level to assure that there will be an increase in positive organizational outcomes. When undertaking such manipulation, HRD practitioners can partner with HRD researchers to examine the impact of these manipulations. Such structuring of variables can lead to future research and theory-building efforts.

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Current Best Practice for Management of Medial Collateral Ligament Injury

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Abstract: Medical collateral ligament injuries are among the most common knee injuries for the athletic population. Immobilization once was the accepted course of treatment for MCL injuries but research has demonstrated the ineffectiveness of this approach.

The knee is second only to the ankle in frequency of injuries in competitive sports and often more severe. Ruptures to the anterior cruciate ligament (ACL) are the most devastating injury to the knee while the medial collateral ligament (MCL) is the most frequently injured (Pickett & Altize, 1971). Although ACL injuries present greater structural deficiency resulting in more time lost when compared to MCL injuries, damage to the MCL is more common. A ruptured MCL often results in considerable structural deficit and may be considered a season-ending injury with return to full activity rates ranging from 4 to 9 weeks (Indelicato, Hermansdorfer, & Huegel, 1989; Jones, Henley, & Francis, 1985). Accepted current practice for treatment and rehabilitation of MCL injuries includes no surgical intervention and a protective hinge brace which allows the knee to flex and extend while limiting medial or lateral stresses on the knee. The brace is removed daily for therapeutic modalities and rehabilitative exercise. However, we have experienced physicians who continue to use immobilization techniques such as long leg casts for management of MCL injuries. This practice precludes appropriate application of modalities and therapeutic exercise and results in delayed recovery time. The purpose of this critical inquiry is to provide best evidence currently available on management of MCL injuries.

Background and Significance

Anatomy of the Knee

The knee is a modified hinge joint supported statically by four main ligaments ACL, posterior cruciate ligament, MCL, lateral collateral ligament. The knee allows motion in the anterior to posterior plane with minimal rotation during flexion and extension. Due to popularity among lay people, the most well known ligament is the ACL, which prevents the tibia from sliding anteriorly on the femur. The posterior cruciate ligament prevents just the opposite, a posterior glide of the tibia on the femur. The lateral collateral ligament protects the lateral aspect of the knee by preventing a varus (medial to lateral) force (Moore, 1996). The MCL is the major stabilizing structure for the medial aspect of the knee joint protecting the knee from valgus (lateral to medial) forces. The MCL is divided into deep and superficial portions separated by a bursa, which is a small jelly filled sac that reduces friction that allows movement between the two segments. The superficial portion of the ligament arises proximally from the medial epicondyle on the femur and attaches 4-5 cm distal to the joint line on the medial surface of the tibia. The deep portion lies just beneath the superficial portion and has a firm attachment to the medial meniscus and the fibrous capsule surrounding the knee joint (Moore, 1996). The MCL can be disrupted in three ways; the attachment is avulsed from the femoral epicondyle, a mid substance tear, or the attachment is avulsed from the tibial shaft.

Evaluation of MCL Injuries

The integrity of the MCL is tested clinically with the valgus stress test. This test involves applying a valgus force to the lateral aspect of the knee while the knee is flexed approximately

20° and again with the knee in full extension. A positive test at 20° of knee flexion results in pain or gapping of the joint indicating an injury of the MCL, a positive test at full knee extension involves pain and gapping indicating involvement of the MCL, ACL, and medial capsule (Starkey & Ryan, 1996). Magnetic resonance imaging is used to determine the location of the disruption and the severity of the injury. The results of MCL testing are rated with three grades when an injury is present.

Severity of ligament injuries is graded depending on several specific criteria. Grade I MCL sprains involve a stretch of the ligament in association with pain, swelling, and minimal deficits in stability. Grade II MCL sprains involve a partial tear of the ligament with noticeable deficits in stability and a positive valgus stress test. Grade III MCL sprains involve a complete tear of the ligament resulting in loss of medial stability and a positive valgus stress test with significant gapping. Grade III injuries often involve additional structures such as the ACL, medial capsule, and medial meniscus (Shelbourne & Patel, 1995).

Ligamentous Repair

One of the main rehabilitation goals of any injured joint is to restore range of motion which is decreased as a result of swelling and pain. Early joint motion is encouraged and the knowledge of the extent to which a joint can be mobilized is determined by a better understanding of ligamentous repair. Early joint mobilization exercise limits the loss of range of motion (ROM) and allows the strengthening phase of rehabilitation to occur earlier, ultimately returning the patient to daily activities more rapidly. Current research has determined that soft tissue injury requires motion for proper alignment of collagen during the healing process. Collagen, a fibrous tissue used during connective tissue repair, is produced at the site of injury and adheres to the remaining soft tissue in random unorganized patterns. Movement in the joint is necessary to realign the collagen increasing the strength and function of the repaired ligament. If the joint is immobilized the collagen will remain in an unorganized pattern reducing the tensile strength of the ligament ultimately weakening the structural integrity of the knee joint (Woo et al., 1987).

Immobilization has been used as a treatment tool for a variety of injuries and has proven to be effective in returning athletes to functional and competitive levels. However, early mobilization allows increased joint ROM while soft tissue heals and considered current standard of care. Physicians most often place reconstructed ACLs in constant passive motion for 20 hr per day immediately following surgery due to the advantages of maintaining ROM in the joint (Noyes & Barber-Westin, 1995). Immobilization of joints has an adverse effect on not only the repairing collagen but also the existing ligaments. The mass of collagen repairing the MCL will decrease with immobilization of joints and undoubtedly has a direct effect on the structural stability of the ligament (Amiel, Akeson, Harwood, & Mechanic, 1980). The strength of the bone-ligament-bone complex significantly decreases with immobilization not only within the ligament itself but also at the bony attachment of the ligament. Strength deficits and MCL failure were demonstrated after immobilization of the knee for nine weeks in rabbits when a valgus stress was applied to the knee (Woo et al., 1987). Early mobilization is considered the current best practice for management of ligamentous injuries for the knee

Methods

Information was gathered through PubMed, MedLine, and FirstSearch. Key words included medial collateral ligament, knee, immobilization, injury, treatment, rehabilitation, and management. Content was analyzed, outcomes were synthesized, and findings were critically

applied to current best clinical practice in order to promote changes that will foster effective and efficient methods of providing athletic training services (Portney & Watkins, 2000).

Current Clinical Research on Ligament Injury

Combined ACL and MCL Injuries

Concomitant ligament damage is common at the knee because of the variety of mechanisms capable of damaging the structures. The MCL is often a secondary result of a more serious ACL injury. A retroactive study was performed comparing outcomes for three treatment methods: surgical repair of ACL and MCL, surgical repair of ACL but not MCL, and non-surgical treatment (Hillard-Sembell, Daniel, Stone, Dobson, & Fithian, 1996). Surgical repair of ACL but not MCL resulted in identical structural stability as surgical repair of the ACL and MCL, with both groups scoring the same on the valgus stress test. Loss of ROM in the knee was three times greater in knees with ACL and MCL repaired compared to knees that did not repair the MCL, only the ACL (Hillard-Sembell et al., 1996). Not repairing the MCL results in greater ROM regained after surgery and equal structural stability when compared to surgically repairing the MCL.

Clinical research on functional outcomes associated with operative and non-operative interventions provide evidence upon which to base clinical practice (Shirakura et al., 2000). Different management of combined ACL MCL injuries was used to examine valgus stability and functional return to activities. MCLs injuries that were repaired operatively were placed into continuous passive motion and MCLs that were not repaired were forced into a cast for two weeks while none of the ACLs were repaired. The results favored the operative management of the injury but this can be disputed because the non-operative group was forced into immobilization. Functional and activity scores favored the operative group compared to the non-operative group. Valgus stress testing revealed no significant difference between the operative and non-operative management course of the MCL (Shirakura et al., 2000). These findings are skewed due to the fact that the non-operative management was forced into immobilization, which has been shown to reduce the structural stability of the knee, and more importantly decrease ROM. The decrease in ROM and stability of the knee can be directly attributed to lower functional scores caused by immobilizing the knee.

Comparisons of surgical techniques revealed that MCL surgery is not necessary in cases where both superficial and deep portions of the ligaments are damaged (Noyes & Barber-Westin, 1995). MCL injuries with varying degrees of severity were compared using an operative approach and a non-operative approach. The results of ligamentous testing favored the non-surgical MCL group for anterior displacement and the valgus tests on the MCL compared to the operative group. No significant difference was found in anterior displacement between the two approaches to MCL injuries. The non-operative treatment had significantly greater results when compared to the valgus stability of the operative treatment. The non-operative treatment was 6% stronger when a moderate valgus stress was applied to the knee and 21% stronger when a substantial valgus stress was applied to the knee (Noyes & Barber-Westin, 1995).

Immobilization Management of MCL Injuries

Controversy exists over the best approach to treatment of MCL injuries in regard to immobilization versus protected mobilization. Canine knees were treated with three interventions: surgical disruption with immobilization for six weeks; surgical disruption without immobilization; or a control group with a sham operation in which the surgery is performed without actual repair of the MCL (Inoue et al., 1990). Collagen concentrations for both surgical groups returned to the collagen levels of the control group. Structurally, knees that were not

immobilized resulted in better varus and valgus stress stability compared to immobilization. The immobilized knees were 17% weaker compared to the non immobilized knees which confirms the immobilization technique to treat MCLs is not recommended (Inoue et al., 1990).

Conservative Management of MCL Injuries

Conservative management has proven to be an effective course of action for treating MCL injuries. Results were measured using scales to determine the functional progress and activities performed on the knee. The functional progress of the knee was measured using the Lysholm's test on a scale of 0-100 while patient activities were measured using Tegner's test on a scale from 0-10. Following conservative treatment functional scores on the Lysholm's scale were all above 95% up to ten years after the initial MCL injury. Tegner scale scores were a mean of 7 out of 10 over the span of ten years after the initial injury. Knee laxity demonstrated no significant differences at any of the follow up examinations comparing the injured knee to the uninjured knee with conservative management (Lundberg & Messner, 1996).

Football players opting for the conservative approach to MCL injuries have demonstrated drastic differences in outcome from cast immobilization compared to brace immobilization. An observational study of 21 collegiate football players with complete MCL tears investigated the effects of 2 weeks of immobilization in a long leg cast followed by a traditional rehabilitation program on functional knee outcomes and return to full activity. Functionally all the knees recovered to a level where the athlete seldom experienced limitations during athletic activities. Stability of the knee also returned to near pre-injury activities where all the knees had less than 5mm of gapping during valgus stress testing compared to the opposite knee at 46 months post injury (Indelicato, Hermansdorfer, & Huegel, 1989). The draw back to casting an MCL injury is that the average time to return to full-contact football drills was 9.2 weeks where it has been documented to take 4-8 weeks to recover (Arnheim & Prentice, 200). Greater success was demonstrated returning athletes to competition in isolated MCL tears using a brace to immobilize the knee compared to the cast technique.

The brace immobilization technique was used to manage high school football players with isolated grade III MCL injuries. The athletes were placed in an immobilized brace for one week with a varus stress placed on the knee. Full stability of the knee returned in a mean of 4.1 weeks after the injury with all of the athletes returning to competition a mean of 4.9 weeks after the injury (Jones, Henley, & Francis, 1985). The brace technique returned the players to full competition twice as quickly compared to the cast technique, which could amount to a significant portion of the season. Bracing the knee allows the brace to be removed for daily activities and rehabilitation where a knee in a cast allows no such treatment options. Compared to the long-leg casting technique, the ability to remove the brace in combination with a week less of mobilization resulted in reduced knee recovery time.

Discussion

Management for injuries to the MCL has transitioned over the last 30 years moving form surgical intervention with prolonged immobilization to a conservative approach with protected mobilization. ACL surgery without repairing the MCL increases ROM compared to a concomitant operative approach of repairing both ligaments suggesting that surgically repairing the MCL is unnecessary (Hillard-Sembell et al., 1996). The results reveal that both combined surgery and the isolated ACL surgery display similar gapping. Conversely, functional scores compared favorably for surgically repairing the MCL as opposed to not surgically repairing the MCL, but the study had a flaw of different treatment protocols (Shirakura et al., 2000). The limitation in this investigation was that the non-surgically treated knees were immobilized while

the knees that were operated on were placed in constant passive motion. The fact that the non-operative group was immobilized discredits the findings supporting MCL surgery due to the fact that it has been proven that immobilization treatment adversely affect ROM and ligament tensile strength (Hillard-Sembell et. al, 1996) ultimately reduces the function of the knee. Canines were used to explore the differences in tensile strength between a disrupted MCL that was immobilized compared to a disrupted MCL that was allowed to move freely after surgery. Collagen concentration following regeneration was the same for surgical and non-surgical groups and thus advocated a non-surgical approach. Surgically repaired knees that were not immobilized demonstrated 17% stronger tensile strength with valgus stress testing compared to knees that were immobilized making surgical repair of complete MCL tears unjustifiable (Inoue et al., 1990). Immobilization and surgery have proven to be unnecessary following injuries to the MCL due to their undesirable affects on the stability and function of the knee.

Return to play criteria is always a concern for Athletic Trainers and physicians when athletes are injured. Football players using the conservative approach in combination with varying types of immobilization were investigated in two separate studies. The management program using a brace for immobilization for a week returned the athletes to competition in half the time required for athletes restricted by a cast for two weeks. The longer an athlete is immobilized following a MCL injury the longer it takes the athlete to return to competition. Once an athlete is injured it is the concern of the athletic trainer and the physician to return the athlete to functional activity as soon as safely possible. The most effective course of action for MCL injuries is to manage the injury non-operatively and conservatively with protective mobilization.

Conclusions and Implications for the Field

MCL injuries are among the most common knee injuries treated in the field of sports medicine by athletic trainers and physicians (Pickett & Altize, 1971). It is the duty of the sports medicine professional to stay up to date with current practices based on the current research and literature. To date, research demonstrates the best course of action in managing MCL injuries is conservative treatment with protective mobilization. With this knowledge it is known that some physicians still implement the casting technique when managing MCL injuries. It has been demonstrated that immobilization decreases ligament strength and ROM (Inoue et al., 1990), placing the knee at a greater risk of re-injury. The current literature suggests that disruption to the MCL recovers no differently when it is surgically repaired compared to treatment without surgical implications. Even when the MCL injury is combined with an ACL injury, the evidence supports that surgical repair of the MCL will yield no greater results than that of the conservative approach (Hillard-Sembell et al., 1996; Noyes et al., 1995; Shirakura et al., 2000). Return to play is the ultimate goal of the sports medicine professional when managing an athlete's MCL injury. It was clearly evident that prolonged immobilization with a cast doubled the time lost of football players when compared to bracing MCL injuries (Indelicato et al., 1989; Jones et al., 1985). The evidence strongly supports non-operative approach in conjunction with protective mobilization to best manage MCL injuries and provides a solid foundation upon which all sports medicine professionals should base current best practice.

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A Professional Development Model to Promote Internet Integration in P-12 Teaching Practices

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Abstract: This mixed-methods study examined effects of a staff development model on instructional practices and dispositions of P-12 teachers. The model design was guided by participants' varying developmental levels and their values and beliefs about teaching and learning. The study adds to our understanding of the need for teacher-centered professional development.

Teacher education staff development contributes to the ongoing professional development (PD) of classroom teachers and supports efforts to maintain currency in their knowledge and practice so that they may meet the needs of the students they serve. Although many models of staff development exist, typically, staff development is conducted for inservice teachers by non-practitioners and educational vendors in "one-shot" short term sessions that are perceived by the intended audience as ineffective and lacking continuity and adequate follow up (Fullan & Stiegelbauer, 1991; Lewis, Parsad, Carey, Bartfai, Farris, & Smerdon, 1999).

Recent research indicates that teachers who participate in staff development sessions for periods of eight hours or longer are more likely to report that the staff development experience improved their teaching considerably than those who participate in sessions scheduled for fewer than eight hours (Parsad, Lewis, & Westat, 2001). Additionally, teachers who felt the PD included necessary follow-up activities and was related to their classroom practice reported that the experience also considerably improved their teaching. This research validates the need to explore the effect of models of staff development that are longer in duration and relevant to classroom practice and contain follow-up.

Purpose of the Study

The purpose of this study was to examine the effects, after a three year period, of a staff development model on the instructional practices and dispositions of P-12 classroom teachers. The specific model was comprised of 42 hours of instruction over an eight week period on infusing the Internet into teaching practices. Participants worked in teams of two throughout the course and engaged in a variety of large and small group and individual activities that addressed content, pedagogy, and individuals' beliefs about the teaching and learning process. The staff development participants were offered instruction in the use of the Internet as a teaching tool at a variety of levels to accommodate their existing knowledge base. The instruction also provided them the opportunity to consider the use of the Internet as a teaching resource as it related to their own instructional settings. Participants worked collaboratively, engaged in reflective practice, developed practical applications to promote P-12 students' critical thinking using the Internet, became trainers for other instructional staff at their own schools, and were mentored throughout the program.

Theoretical Framework

The most recent literature on staff development indicates that effective staff development is ongoing and recognizes teachers as professionals and adult learners (Wilson & Berne, 1999), is related to teachers' beliefs (Borko & Putnam, 1995), is authentic and grounded in practice (Ball & Cohen, 1999), and is research-based (Ball & Cohen, 1999). Further, design principles for

effective PD must provide opportunities for educators to develop reflective capabilities, attend to motivational and developmental issues, and build on social relations in the school context (Ball & Cohen, 1999).

The literature on change theory suggests that change in a pattern or practice will occur only after individuals change their normative orientations associated with their old patterns or practices to new ones and develop a commitment to these. Such change involves not only the individuals' knowledge and behaviors but also attitudes, values, beliefs, and relationships that cannot occur in piecemeal fashion (Chin & Benne, 1984). Change in one's value system is a systemic change in which the individual takes an active role. True change in such a system cannot be imposed, but rather must come from within. Fenstermacher (1979) suggests that reflection plays an important role in the changing of teacher beliefs. Dwyer, Ringstaff, and Sandholtz (1991), however, maintain that first teachers must see and understand the connection between their beliefs and actions and be aware of alternative belief systems.

Implicit in staff development is the notion that teachers will modify their teaching practices and/or beliefs about teaching and learning. This sort of change, however, does not occur automatically or quickly. Rogers (1995) suggests five stages in the "innovation-decision process through which an individual passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision" (p. 163). The introduction of new a curriculum, strategy or method, or set of teaching materials may be considered an innovation. While teachers may be provided staff development in the use or application of the innovation, they actually may embrace the innovation at differing levels of acceptance or in stages.

Concerns theory, emerging from Fuller's work in the 1960s, assumes that change is a process that follows a seven-stage developmental sequence regarding teachers' concerns about a proposed innovation to be adopted. The development of the Concerns Based Adoption Model (CBAM) is based on this premise (Hall, George, & Rutherford, 1998). One element of the CBAM is the Stages of Concerns Questionnaire (SoCQ) to which teachers respond to statements that will provide information about teachers' levels of concern about the adoption of the innovation. The CBAM uses the term concerns to describe the perceptions, feelings, motivations, frustrations, satisfactions, and preoccupations about an innovation and the change process (Loucks-Horsley & Stiegelbauer, 1991).

Understandings about current teacher PD models, how and why teachers change their practice, and the manner in which they embrace innovative teaching practices suggest a need to research technology integration PD experiences. The following research questions were posed to examine changes that occurred in teachers' practices and dispositions toward the adoption of the Internet integration as a curriculum innovation and those practices and dispositions that are sustained over time during and following their participation in a staff development model:

1. Does the model of staff development produce change in teachers' practices and/or dispositions regarding the innovation and is the change sustained?
2. What factors contribute to teachers' willingness to adopt a change or institute an innovation?
3. How do teachers believe the training has influenced changes in their professional effectiveness?

Method

A mixed methodological approach was used to confirm and triangulate data from multiple sources; data sources included both the SoCQ and interviews. The SoCQ was

administered to the participants prior to the beginning of the staff development, immediately following it, and as a follow-up survey again three years after participants completed the staff development. Additionally, semi-structured interviews conducted with a sample of the participants three years after the staff development experience provide further insights to better understand and expand the quantitative data collected from the SoCQ. The survey results provide information about participants' concern about using the Internet as a teaching tool (the innovation) and changes in the levels of concern over time. Interviewees were selected from a purposeful sample of those who returned the follow-up survey, representing teachers from a variety of grade levels, professional experiences, geographic locations, and sections of the courses in which they participated during the original staff development training. The results from the demographic portion of the survey and the interviews suggest factors that have contributed to the participants' levels of use of the innovation and perceptions about the staff development model.

The pre-, post-, and follow-up survey data were collected by means of the SoCQ. The pre-intervention survey included an additional section requesting demographic information about the participants and their access to technology and involvement in PD activities. The SoCQ is a 35-item 7-point Likert scale questionnaire (Hall, George, & Rutherford, 1998). Each item represents seven fundamental categories of concern as related to concerns theory: awareness, informational, personal, management, consequence, collaboration, and refocusing. These seven categories are further clustered into three areas: self, task and impact on students. The results of the SoCQ provide information about an individual's stage of concern regarding an innovation based on the seven categories and three clustered areas.

An interview guide was used to conduct the follow-up interviews. The interview guide items were informed by the results of the follow-up survey, addressed questions to reveal information about factors contributing to the individuals' stages as reported in the follow-up survey, and inquired about individuals' perceptions regarding the staff development model and its impact on the individual.

Data from the SoCQ questionnaires were analyzed to examine differences between the results of the pre- and post-surveys, post- and follow-up surveys, and pre- and follow-up surveys. Percentile scores were computed, noting the stage that received the highest score. The results of the three administrations of the survey were plotted and differences noted. Group data were aggregated to develop a profile as recommended by Hall et al. (1998) that presents the mean scores for each stage of the participating individuals. A paired samples *t*-test was conducted to evaluate whether differences in scores on a given scale between administrations of the survey were significant differences.

Interview data were analyzed and categorized to identify patterns and to establish dominant themes. Consistencies and discrepancies between the survey results and the themes that emerged from the interview data were reported.

Results

The demographic data revealed that the participants represented all P-12 grade levels and taught all subjects/disciplines including the arts, computers, foreign language, and religion; teaching experience ranged from 2 to 48 years with approximately half of the participants reporting having been teaching for 11 or fewer years; a little more than one-third held a graduate degree. Nearly all participants reported attending PD sessions at least once a year; differences in their reasons for attending PD sessions were observed between the pre- and follow-up administrations of the survey.

The SoCQ results indicated a refocus from on one's self as indicated on the pre-test to a focus on the impact on students in both the posttest and the follow-up surveys. Both the posttest and follow-up results also indicated an increase in concerns about the task as compared to concerns about the task in the pretest. The posttest results indicated the participants' initial concerns about learning about the innovation and how it may impact their practice diminished; participants became more concerned about how they might collaborate with others in the use of the Internet in their teaching practices and how the integration of this innovation might impact their students.

Interview data suggests that participants believe the design of the PD experience in which they engaged had an impact on their current practice. They reported they continued to explore new ways to use the Internet as an instructional tool and designed collaborative activities for their students that involve the use of the Internet. A desire to work collaboratively with other faculty and a sense of leadership in sharing knowledge and expertise about new ways of approaching the curriculum were dominant themes. Interviewees were consistent in acknowledging the importance of institutional and parental support of the use of such technologies in the classroom. Specific characteristics of the PD experience that contributed to their embracing the use of the innovation include the length of the course, the depth of the content presented, opportunities to collaborate, and the authentic nature of the experiences that allowed them to immediately use what they had learned.

Educational Importance of the Study

The results of the study have implications for the design of PD experiences for P-12 teachers. Teachers, given the opportunity, will revise or develop new attitudes, values, beliefs, and/or relationships about teaching and learning. PD experiences provide a vehicle for such changes to occur; therefore, to address the ongoing changes teachers face, PD experiences must consider teachers' values about their teaching and learning practices.

The well-designed staff development program provides support for the teacher throughout the learning process. The findings from the present study reveal that practitioners require adequate access to the resources that are the focus of the staff development. Those responsible for implementing the staff development must not only ensure availability of the specific curriculum resources and instructional materials but also of any necessary peripheral materials. If the support structure is missing from the PD program, behavioral changes in teacher practice may be stifled or completely extinguished. The decrease in the collaboration using the innovation among teachers in the present study paralleled the end of the formal structure that was in place to support collaborative efforts during the staff development training. With both resource and administrative support in place, teachers are encouraged to go beyond the superficial use of the innovation (Sergiovanni & Starratt, 2002) and are able to develop original applications for its use and routinely evaluate its efficacy for their practice and student learning. This kind of sustained use is the catalyst necessary for changing teacher practices and ultimately their values and beliefs. With proper support in place, teachers are able to make conscious decisions about the implementation of the innovation, (Rogers, 1995) and their regular use of it provides an opportunity for teaches to affirm its value in the classroom (Guskey, 2002).

Grounded in Practice

The findings from the current study underscore the importance of grounding the staff development in teachers' practices. The focus of the training program ought to have relevance for the practitioners and their work with students. Once the connection is made, the effective staff development program will have integrated in its design opportunities for the teachers to

practice using their newly gained knowledge, skill, or pedagogy in the classroom. This element of authenticity establishes not only credibility with the teacher who is the learner in the staff development program, but also a climate and system in which the teacher can experiment to the extent he or she is comfortable with the new approach. While engaging in such practical trials with his or her own students, the teacher has an opportunity to assess the fit of the innovation for his or her own class, observing the impact of the new approach on students' learning. Student success with the new approach may be observed by the teacher (Guskey, 2002), dispelling any doubts the teacher may have regarding the innovation's use and influencing the teacher to pursue the approach in greater depth.

Intellectually Stimulating

The staff development program must be comprehensive enough so as to stimulate the learner to think about and to critically reflect on one's practice. It must extend beyond the traditional information-providing level of staff development in order for teachers to begin to think about how they might incorporate the new curriculum, strategy, or practice into their existing repertoire of teaching behaviors and beliefs about teaching. In addition to a program with depth, the staff development should have breadth, providing sufficient variations to accommodate the diverse teacher needs and interests and those of their students. The breadth and depth of the staff development model in this study was critical to the success of the program.

The effective staff development program will engage the participant as an adult learner, providing a variety of venues for learning. Of particular importance to participants in the present study were the opportunities for collaboration. Creating an environment where teacher teams or communities of learners were able exchange ideas and practices, support one another, and learn from one another helped to sustain active involvement of the participants in the staff development program and promote their own PD.

Ongoing

Engaging participants in an ongoing program of staff development is the optimal design. Since the well-designed staff development program encompasses more than just the acquisition of a technique, it cannot be a one-shot or one day affair. A staff development model that embeds opportunities for teachers to explore the efficacy of their newly gained knowledge with their students in their own classrooms contributes to the overall effectiveness of the program. Recognizing teachers' stages of development and building from the literature on teachers' adoption of innovations or innovative practice when designing the staff development program enhances the retention of teacher-learners at various stages in their careers and promotes their PD. The rich and developmentally diverse content and pedagogy embedded in the staff development model used in this study played a major role in the success of the program. Throughout the eight-week training period of the staff development, participants showed evidence of professional growth. Numerous participants remarked immediately afterwards and several three years after the training that they desired more and continuous PD opportunities of a similar nature. This is a testament to the fact that ongoing PD programs are not only effective, but also desired.

The teacher is the gatekeeper of change in the classroom and staff development designed to change teacher practice must be guided by and integrated with teachers' existing values, valences, knowledge, and behaviors. Changing values and beliefs along with well-established behaviors takes time. Staff development targeted at changing only teacher behavior is superficial and will not have sustained effects.

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Japan's Educational System

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Abstract: This paper analyses the Japanese educational system through Hofstede's (1980) locus of control and social principledness' dimensions, and how those values got promulgated and reinforced through the different historical periods of the Japanese educational system.

Since educational systems were established, the purpose of schooling has always been defined in terms of its intrinsic values. They are knowledge for knowledge, transmission of social values, intended outcome, and holistic individual development. Moreover, educational policies and practices serve as a mirror of a society; they highlight what type of knowledge and values, or psychosocial factors, a country considers worthwhile, and how it ultimately socializes individuals. The Japanese education system is not an exception to this rule. Through its education system, Japanese citizens are introduced to a way of life that defines their everyday interactions in schools, family, as well as businesses practices.

At the same time, globalization is becoming an influential force in today's educational systems around the world. No country can afford to live in isolation anymore. Connectivity and interdependence is increasing (via electronic mail, media, travel accessibility, etc.), and people from cultures all around the world are interacting more than ever before. To enable citizens to function in a global society requires individuals open to diversity, creativity, risk taking (very important at the economic level), individualism, and most importantly, disagreements.

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan is beginning to move towards this direction. In 1998, the MEXT's report, *To Cultivate Children's Sound Minds that Develop a New Era,* states that the there is a need for Japanese children to develop a more individualistic mindset and schools should promote children's goals and dreams. Through the future generations' creativity and entrepreneurship, economic development will be enhanced. As a result, the MEXT is promoting, within the schools and family groups, actions such as praising children's individuality by "avoiding comparison with others or worrying about their relative ranking from their early childhood" (MEXT, p. 5), or reading books to children that encourage the development of children's sound minds.

For the Japanese education system, the MEXT' s reforms symbolize the first steps in educating citizens in behaviors that conflict with the long-protected Japanese cultural values of cooperation, loyalty, obedience, and group conformity. Reforming the educational system, hence, is one of Japan's most significant challenges ahead. As Kazuo (2001) states, "current reform is to do away with the roots of educational ills in Japan--i.e, uniformity, inflexibility, and lack of openness and internationalization" (p. 29).

Purpose

The purpose of this paper is to present a macro-analysis of the Japanese educational structure through two dimensions of Hofstede's (1980) theoretical framework: social principledness and locus of control. As a result, the rationale for this paper is to examine how the Japanese educational system conveys the Japanese cultural values of cooperation, loyalty, obedience, and group conformity to students.

Theoretical Framework

From 1967 to 1973, psychologist Hofstede (1980) conducted one of the most significant research studies associating cultural values with workplace preferences. His study was designed to improve the management of culturally diverse employees, as he believed that people's behaviors were influenced by their own values, beliefs, or set of attitudes. Importantly, Hofstede (180) concluded, "people are programmed by their own cultures" (p. 398).

Due to the inherent nature of education and cultural values, Hofstede's (1980) theoretical framework can be used to better comprehend how social values shape schools' content and practices. Hofstede's analytical framework is composed of four dimensions: power distance, uncertainly avoidance, locus of control, and social principledness.

The first dimension, power distance, refers to the "degree to which citizens tolerate social inequalities" (Kubow & Fossum, 2003, p. 236). The second one, uncertainty avoidance, looks at the level of social uncertainty that a society bears. Although the locus of control examines how positive or negative reinforcement is set according to a society's values, social principledness is "associated with a strong inclination on a part of a culture to acquiesce, without a question, to authority, thereby accepting the conventional values and norms of that society" (Kubow & Fossum, 2003, p. 236).

Though all these dimensions are equally important and applicable when examining school systems through psycho-sociological lenses, only two will be used in this paper: Hofstede's locus of control and social principledness. Selecting these two dimensions allows for a broader analysis of how these values have been embedded throughout the development of the Japanese education system.

Early Days of Japanese Education System

Through the different periods of history, the Japanese educational system went through many changes. As it did, however, one goal was always kept constant: to promote Japanese culture and identity. One of the earliest transformations was the movement of the samurai class into other professions maintaining their ethical code of conduct – obedience, cooperation, loyalty and group conformity. They became the leadership group behind the first movements towards Japan's economic modernization. In addition, the inclusion of the samurai in many other occupations meant the ramification of their code of conduct throughout Japanese society. Moreover, schooling was designed based on the tenets of Confucian attitudes. These attitudes reinforced the "idea of handing down culture to succeeding generations and the ideal of the disciple following faithfully in the footstep of his scholarly seniors" (Shuichi & Toshio, 1995, p. 23). This Confucian perspective, still present today, influenced the education system tremendously in two ways. First, it not only promoted a high respect for quality learning, but it also encouraged "deference to authority per se that became an obstacle when it came to integrating personal creativity with the acquisition of knowledge" (Shuichi & Toshio, 1995, p. 24). Therefore, the value of social principledness is deeply rooted on the Confucian beliefs very significant in Japan.

The MEXT's Role

The Japanese educational system was born with *The Fundamental Code of Education* (Gutek, 1993, p. 161) in 1872, incorporating Western forms but safeguarding Japanese social patterns and cultural codes; it also protected the values of social principledness and locus of control. This code presented a highly centralized national system, and called for a universal education based on a pyramid system. This pyramid system included a compulsory primary education for children from ages 6-14. From the French system, the Japanese borrowed the

highly centralized administrative model. The top-level administrative decision makers were located at the national Ministry of Education. Under the Ministry of Education, Regional School Inspection Bureaus were established in charge of monitoring the local school district supervisors (Gutek, 1993, p. 161).

Today the Japanese educational system remains highly centralized, governed by the MEXT's Monbusho. The Monbusho is responsible for developing national policies, providing resources for education, and enforcing a national curriculum and standards throughout the system. The Japanese educational system, thus, presents a vertical organizational structure, where the MEXT (on the top of the pyramid) develops policies to be implemented at the local level (Gutek, 1993, p. 165).

In terms of the national curriculum, the MEXT is in charge of preparing the course of study. The highly arranged curriculum defines the scope and sequence for each level of schooling setting the stage for a uniform national educational outcome. Kazuo (2001) elaborates, stating that though schools have the power to develop their unique curriculum, most of the compulsory-level schools choose to design similar plans of study. As a result, Japanese schools are often criticized for being too homogeneous (Kazuo, 2001, p. 23). This uniformity also translates to textbooks selected and approved by the MEXT for each area of study, creating a list from which the schools will pick their books. According to Gutek (1993), textbooks are very standardized and present the specific content to be covered in a particular subject. In addition, because instruction is done following the textbooks' format, teachers find themselves following a strict sequence that leaves little to no room for deviation (Gutek, 1993, p. 168). This uniformity in national curriculum is another example of how social principledness values shape the Japanese educational system.

At the elementary level, the national curriculum established by the Monbusho accentuates the learning of the Japanese language arts and literature, social studies, and math and sciences, among others. In addition, because of the large class size and emphasis on group behavior, assignments are developed towards the group and it is instilled in the students that the completion of the task is the responsibility of the group. The group, therefore known as the *han* (group of four or more students), fosters a family-type oriented relationship among the han members as they work together in the fulfillment of their school's task for the day.

At the same time, elementary teachers, aside from promoting intellectual development, are also concerned with the emotional well-being and development of each child. This holistic experience contributes to the socialization of students through the "development of interpersonal competencies and promoting a sense of social cohesion and collective responsibility among students" (Kubow & Fossum, 2003, p. 198). Decision-making within the group as Roland (1989) denotes is a process under which the group little by little arrives to concurrence guided by its leader (p. 74). This process thus introduces to the students the decision-making process accepted and encouraged in the Japanese culture.

At the secondary level, the Japanese educational system presents a rigorous examination structure. Though the Japanese system does promote group conformity, much of the economic success a Japanese person can attain is closely related to the type of school that person attends, or the locus of control. Hence, most of the secondary level education is targeted to the preparation and passing of the school's examinations. To be promoted to the upper secondary level (non-compulsory), students must pass first the examination that will allow them to attend a prestigious upper secondary school (Gutek, 1993, p. 173).

Once again, the need to conform to the group and not to disappoint the members of the family creates a motivation--and sometimes stress for the Japanese students--to pass the exams and become an active professional member of Japanese society. As Roland (1989) explains, "high achievement motivation factors are …motives around family and group obligation and family continuity, as well as the internationalization of strong maternal expectations for achievement" (p. 97). This emphasis on group obligation and family continuity is another example of the locus of control dimension.

The Role of School

For modern Japan, consequently, education is a national priority. Schooling in Japan grows out of and has remained "synchronized with the national values of social cohesiveness and harmony. This has produced clearly established authoritative beliefs and values that define the patterns of behavior and expectations" (Gutek, 1993, p. 166). Hence, Japanese society has a clear understanding of the role of school--social principledness. For them, schools are academic institutions responsible for transmitting subjects needed for economic development through group work, thus reinforcing the value of group behavior, or behaviors oriented towards sensitivity to group feelings. In addition, it creates a societal agreement, particularly between parents and schools, of what conforms to or violates the acceptable behavior building upon the home and family, which in turn mirror those of the larger society.

This implicit societal agreement, hence, leads to the education of children embracing since early age the Japanese core values of cooperation and group conformity. According to Kazuo (2001), society is understood as practical systems and interactions taking place within society. Because these systems and interactions are accepted by the Japanese society as given and self-evident, there is no need to question them. Moreover, the maintenance of the status quo within organizations and systems is associated with safeguarding the stability of society (Kazuo, 2001, p. 1).

Japanese identity, furthermore, has been crafted to maintain the core cultural values intact (social principledness and locus of control). As Roland (1989) states:

> The Japanese society is oriented around specific group or units---household, corporation, bureaucracy, business, educational or social institution, or village. As a result, the Japanese have very clear-cut boundaries, well-defined pyramidal vertical hierarchy, and usually become deeply emotionally involved and loyal to one group only. (p**.** 72)

These deep emotional connections, hence, lead to a strong commitment to the purposes of the group. For example, mothers--called education mothers, *Kypiku mama*--are supposed to be the head of the household, and to be very active and influential in their children's education; for a student, it could be a class or school, and for men, the professional work group (Roland, 1989, p. 72).

Conclusion

The Japanese education system has been designed to promote and protect Japan's core cultural values of obedience, cooperation, loyalty and group conformity. At the same time, Japan, as a key player in the international field, must ensure that Japanese citizens are equipped with skills--such as open-mindedness, free enterprise, and inventiveness--all very important for Japan's continuous economic level. But above all, individualism is needed to think locally and act globally. How Japan moves toward embracing these two realities into the Japanese education system remains to be seen.

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From Bilingualism to Interlinguistics: The Case Against the Deficit Model of Language Acquisition

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Abstract: The article argues against an ahistorical deficit model of Spanish/English bilingualism in educational practice based on interlinguistic research. The bidirectional facilitative effects of Hispanic bilingualism allow Spanish-speaking minorities to exploit their language background while learning academic English and integrating their language and culture into the American mainstream.

Recent unprecedented demographic events in the United States have caught both native and immigrant residents woefully unprepared to meet the challenge of educating and mainstreaming newcomers in the most efficient and painless manner. The American classroom is now a stage in which teacher and student find themselves facing each other having to overcome cultural and linguistic barriers. By 1998, over a third of the nation's public school students were of color (Valdes, 2001). Unlike past decades, linguistic minority groups have decided to break with traditional assimilationist patterns and retain as much of their cultural heritage as possible. How this was to be accomplished, especially through the educational system, is a question that has spurred much debate.

One main route to maintenance of the culture and language employed by linguistic minorities has been through bilingual/bicultural programs. The *Lau v. Nichols* decision of 1967, initiated by Filipino immigrants in California, allowed for immigrant groups with substantial numbers to receive instruction in their native language (Valdes, 2001). A wide array of programs arose under different names, such as transitional, dual, immersion, native/home language instruction—each employing the first language in varying degrees while gradually introducing English. Depending on the ultimate goal, programs were either subtractive or additive: either the native language was maintained along with English or jettisoned and forgotten.

From Spanish to Latin

While the debate raged on, few, if any, educators ever questioned the practice of including a foreign language as a staple of the public school curriculum. In some schools, despite its status as a "dead" language, Latin was accepted and viewed as one of the more challenging courses high school students could take. The rewards were not only grounding in Western cultural tradition and mental discipline but the opportunity to learn about the foundational aspects of English (Cunningham & Graham, 2000). Latinists even spoke of their students' experience with "sprachgefühl," the ability to view one's own language from a distance and thereby learning English thoroughly (Masciantonio, 1977).

Oddly, with the dramatic rise of bilingual education and the simultaneous, and largely unheralded, demise of Latin in the American curriculum, no one—neither educator nor politician—ever clamored for Spanish as Latin's successor and fill the linguistic, educational gap left in the curriculum. The "genetic" closeness of the two languages (Ard & Homburg, 1983) makes this omission all the more glaring. Hispanofiles—Spanish teachers, bilingual educators, native language proponents, even ESL and reading instructors—should have (but did not) promote the learning of the second most popular language in the world, slightly ahead of even

English (Castro, n.d.). Within the United States, Spanish is the most common language after English, its speakers numbering about 27.8 million and making it larger than all Spanish-speaking nations except four--Mexico, Columbia, Spain and Argentina (Wikipedia, n.d.).

The unexplained silence in promoting the passing of the mantel from Latinists to Hispanists has perhaps justifiably led to criticism of bilingual education proponents for their programmatic rationales and subsequent achievements (Cummins, 1979). Longitudinal studies such as the St. Lambert Project of Canada, which tracked students in a French immersion program for twelve years, were never attempted with American bilingual programs. Data on the effectiveness of bilingual programs involving students with low SES and immigrant backgrounds was never collected and analyzed to determine whether the success of the Canadian experiment could be replicated under markedly different circumstances.

Cultural/ Linguistic Disassociation

The failure to promote the relationship between the teaching of Spanish and its facilitative effect on the learning of English may have been due to the nature of how academic disciplines relate to each other. In high schools, depending on the size of its language department, foreign languages may be in a separate department or even subsumed by the English department. In either case, Spanish teachers may have perceived themselves as competing with other languages, including English. Thus, the relationship may not have been one of interdisciplinary cooperation, of seeing that students benefit from globally extracting the most from all the languages offerings at school.

The Rise of Cross-Linguistic Research

The unexpected influx of immigrants, particularly Spanish-speakers from Mexico and Latin America, contributed to the rise of the bilingual education movement in the United States. Other nations have faced similar situations in which neighboring countries absorbed immigrant groups that maintained a first (L1) and second (L2) language while residing in a new country offering either political or economic refuge. As these languages came into contact, the linguistic mixture created what some researchers call an “interlanguage” (Nickel, 1998). The relatively incipient, evolving field of interlinguistics has produced studies on the cross-lingual effect from one language to the other, either in a unidirection or bi-directional process—from the L1 to the L2 or vice versa. Researchers have examined various transfer effects on reading (Ringbom, 1992), vocabulary development (Ard & Homburg, 1993; Cunningham & Graham, 2000), and phonological processes (Hancin-Bhatt & Nagy, 1994; Lindsey, Manis, & Bailey, 2003).

Hispanofiles failed to appreciate the uniqueness of the Spanish/English genetic relationship that interlinguists have hinted at: the use of Latin root words from Spanish which facilitate the learning of their English equivalents. For years Latinists extolled this element of their teaching which substantiated and supported Latin’s inclusion as part of a rigorous college preparatory curriculum.

Cognates and Functionality: Spanish versus English

Spanish and English have many cognates or words that share semantic and orthographic similarities in varying degrees. For instance, in Spanish the word *mansión* is written identically and means the same as the English word *mansion*. However, some cognates rely on parts of a word referred to as roots. One such example, *boca*, or mouth, is one root word which, if Spanish or bilingual teachers ever used with their students, would facilitate the teaching of the psychokinetic roots of language. Furthermore, English lacks this parallel pedagogical equivalent and monolingual English-speaking children are helplessly limited to rote memorization for

acquiring the basic, functional terms when learning to use the letters and their corresponding sounds.

To illustrate, first graders are taught that letters belong to two groups: vowels and consonants. To interlinguists, these two terms are low-frequency, or uncommon, words (Cunningham & Graham, 2000). For children, these words will perhaps always be limited to their role in remembering that the letters a-e-i-o-u are vowels and the rest are known as consonants. Few native English speakers, for that matter, may never realize that the word *vow* is related to *vowel* or that the word *consonant* can be used as an adjective.

For a child or adult learning Spanish, the word for vowels is *vocales* and for consonants, it is *consonantes*. Thus, the word *vocal*, unlike its English equivalent, relates easily to the word *boca*, or mouth. Thus, vowels are letters that essentially open the person's mouth to pronounce them. Consonants, on the other hand, are letters that close the mouth and "have sound" or are "with sound" (i.e., *con*/with + *sonar*/sound). In essence, the closing of the mouth (consonants) either with the lips, tongue, teeth, etc. combines with the opening of the mouth (vowels) to create speech. Children specifically can benefit from a physical, kinetic explication and translation of linguistic terms into palpable, demonstrable actions via common every day words. The native, monolingual speaker of English lacks this advantage which the Spanish-speaker brings to the bilingual classroom when exploring and discovering language.

Linguistic Symbiosis

This unique example demonstrates not only the Spanish-speaker's linguistic advantage but reveals an important aspect of language: that no language is unrelated to another. Linguists refer to "genetic" relationships among different languages and the relatively "close distance" between Spanish and English (Ard & Homburg, 1993). Both opponents and proponents of bilingual education have allowed the emotional pitch of their arguments to drown out interlinguists' discussion about the facilitative nature of both languages. It is tragic and disappointing to see how this affects those who speak non-standard dialects. Spanglish, or code-switching from language to another, is ridiculed or disparaged by both language professionals and the public at large. Often teachers view students who speak a nonstandard dialect as a "tabula rasa" or blank sheet. Rather than focus and tap what the Spanglish-speaker brings to the classroom in both languages, they are oftentimes considered "alingual," not knowing either language at all. Ironically, these are the children who might be the most adept at grasping the concept of linguistic symbiosis as exemplified by the aforementioned *boca/vocales* lesson.

Cognate Recognition: Low to High Frequency Words

Research focusing on cognate recognition offers the most promise to older secondary and adult bilingual students who may not have participated in bilingual programs. The learning of low frequency (i.e., common) English words from high frequency (common, everyday) words in Spanish allows Hispanic bilinguals the chance to increase their vocabulary inventory at an age when lexical acquisition ebbs.

For instance, the English word *limpid*, which means clear or clean, appeared on a standardized graduate school admissions test. Less than 14% of test takers answered this test item correctly. Although derived from French, the Spanish word that approximates this word is *limpio,* or clean. By using direct instruction, Hispanic bilingual high school students prepping for the SAT would see the applicability of their home language in learning academic English words. The maternal and paternal speech heard at home and on the playground since childhood thus has value in the classroom and, in the case of college bound students, in higher education. This is a rare instance in which parents can feel that everyday bilingual discourse with their children is a

resource waiting to be exploited. It reinforces learning that occurs in homes which are not necessarily of the dominant class, much less middle class or white. Educators and politicians on both sides of the language issue would have to alter their prejudices towards the term "Spanish dominant." English language loyalists would understand, for once, that relying on a minority language does not constitute a deficit or hindrance but rather a complement to the learning of English. Linguists themselves also need to modify their L1/L2 paradigms and employ an "L^0" which in math means any number (in this case, a language) taken to the zero power is the number "1." In other words, a bilingual who acquires two languages in reality has one interlanguage which symbiotically builds upon itself. Words from one language are based, derived and generated from one language to another and cannot be said to exist independently from one another.

In addition to the symbiotic relationship, the student discovers that acquisition requires less rote memorization. There is an adage that says, "Use a word three times, and it's yours." Usage, in other words, leads to acquisition. For the bilingual person, the roots of academic English vocabulary were there since childhood and formed the building blocks for later demands for higher academic literacy skills. The difficulty of learning new vocabulary is demonstrated by the Educational Testing Services' deletion of the antonym section from the SAT examination (Gose & Selingo, 2001). This portion of the test provided little chance for students to decipher meaning through contextual clues. One either knew the word or they did not. Hispanic bilinguals, because of their cultural linguistic capital, would not need clues. Further, by tapping into their native language, the acquisition of new vocabulary becomes a natural process, not artificial and temporary as when relying on mnemonic techniques. Words would flow into the bilingual's speech and compositions, the ability to think and speak while freeing more time spent on learning difficult, non-Latin based vocabulary words (Ard & Homburg, 1993).

Conclusion

Thus for the Hispanic student who has been told that his native language was a detriment, something, according to behavioral psychologists, to be extinguished because it took away from his practice time with English (Yeung, Marsh, & Suliman, 2000), the research of interlinguists dispels the notion of linguistic confusion. Now, the only confusion is amongst blanket opponents of bilingualism who fail to understand the value of Spanish. Perhaps now they can ask themselves what they expected bilingual students to do once they took high school Spanish only to find themselves, years later, struggling to speak not only in the classroom but at home with their first teachers, their parents.

For once, Chicanos, Puerto Ricans, Cuban Americans and other Spanish-speaking minorities have a legitimate reason to value and develop their linguistic capital and reject the ahistorical and politicized model of language acquisition. Against this background, thus, looms perhaps the real, sobering reason nativists ardently opposed bilingualism in general and Spanish bilingualism in particular: the fact that they, as monolinguals, would be a step behind those who once struggled to keep from falling behind. They would now see what the research would certainly support: that at least with academic vocabulary development, to learn English well, it helps to learn Spanish first and *¡ pronto!*

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Student Knowledge and Perceptions of Islam and the Arab and Muslim World

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Abstract: Students' knowledge and perceptions of Islam and the Arab and Muslim world were assessed at three schools to evaluate the effectiveness of the current pedagogy and curriculum. Results show that students have little knowledge of the subject, say that they get most of their information from their teachers, have fairly positive perceptions of Islam and the Arab and Muslim world, and have suggestions to improve the curriculum.

To evaluate the understanding of Islam and the Arab and Muslim world in Miami-Dade public high schools, we assessed students' knowledge and perceptions in this area. The main question explored in this research is, "What knowledge and perceptions do students in selected Miami Dade County high schools currently have about Islam and the Arab and Muslim world?" In order to answer this question, we considered the following sub-questions: (a) What are students' knowledge of Islam and the Arab and Muslim world? (b) What are students' perceptions of Islam and the Arab and Muslim world? (c) Is there a correlation between students' knowledge and perceptions? (d) What sources within the school and outside of school do students articulate as principal contributors to their knowledge of Islam and the Arab and Muslim world? (e) What recommendations, if any, do students have on how to change the pedagogical content in order to increase their knowledge of Islam and the Arab and Muslim world?

Theoretical Framework

The theoretical framework for this study derives from Said's (1979) critical analysis of the "Other" as a predominant cultural and historical construct, as defined in his critically acclaimed book *Orientalism.* Viewing the prevalent use of "Other" within the context of power and authority, Said (1979) defines "Orientalism as a Western style for dominating, restructuring, and having authority over the Orient" (p. 5). Most importantly, Said rejects modern discourse that attempts to define the world post-9/11 using a similar paradigm. In a recent article, Said criticizes Huntington's (1993) "*Clash of Civilization's* thesis as better for reinforcing defensive self-pride than for critical understanding of the bewildering interdependence of our time" (2001, p. 13).

Nevertheless, categorical representations of the world have been intertwined with human interactions throughout history. From the analytical accounts of "Others" in the New World to the politically charged "evil Others" of the Cold War and today, a division between those who fight against terrorism and those who stand by and watch, a bifurcated mechanism of defining human and cultural relationships has prevailed, "a world divided among people who live inside and outside history" (Willinsky, 1998, p. 251). This study evaluates these mechanisms in Miami-Dade County public high schools, in order to determine whether the current content and pedagogy employed confers a "critical understanding of the bewildering interdependence of our time" (Said, 2001, p.13).

Methods

This is a multiple-case study in which a mixed methods approach was used to examine students' knowledge and perceptions of Islam and the Arab and Muslim world at three public

high schools in Miami-Dade County. This study was conducted in eight ninth-grade World History classes, and one Advanced Placement (AP) World History class, which consisted of 10th through?12th graders. The classes were divided as follows: at two schools (High School #1 and High School #2), the study was conducted in two "general" World History classes, and one "honors" class; at the third school (High School #3), the study was conducted in one "general" class, one "honors" class, and one AP class.

These schools were chosen for the composition of their student populations. The majority of students at High School #1 are from a middle class background and most representative of the ethnic makeup of Miami, where over 55% of the population is of Hispanic background. The majority of students at High School #2 are from a lower-middle-class background. At this school, there are many children of migrant workers. At High School #3, the majority of students are from middle to upper-middle class backgrounds.

Data collection took place during a four-week period in May-June 2004. Each student was given the opportunity to fill out a survey consisting of twenty-seven perception-based questions and fifteen knowledge-based questions concerning Islam and the Arab and Muslim world. Knowledge scores were derived from the ten multiple-choice questions in this survey. Additionally, students were given the opportunity to participate in a focus-group interview where each group of 5-6 students was asked the same set of questions to further assess their knowledge and perceptions of Islam and the Arab and Muslim world. Furthermore, each individual teacher was interviewed with a specific set of questions in order to gauge his/ her thoughts about his/ her students' knowledge and perceptions of Islam and the Arab and Muslim World. Finally, the World History textbooks used in each classroom were collected for analysis. All the "regular" classes used *World History: The Human Experience* (1997) by National Geographic; all the "honors" classes used *World History: The Human Odyssey* (1999), by Spielvogel and Jackson; the AP class used *The Heritage of World Civilizations* (2000), by Craig.

Key Questions

In order to measure students' perceptions of Islam and the Muslim world, we used the following six Likert-scale questions from the "Islam and Muslim World Survey": (a) Islam is intolerant and opposes religious freedom (Intolerance); (b) Islam promotes tolerance and is accepting of peoples from different faiths (Tolerance); (c) Islam advocates violence (Violence); (d) Islam is a religion of peace (Peace); (e) Islam allows Muslim women to be oppressed by Muslim men (Oppression); and (f) Islam promotes gender equality and preaches that women are every bit as human as men (Equality).

These specific questions were taken from a survey sponsored by the Ethics & Public Policy Center, a non-partisan think tank, and Beliefnet. The survey was based on a national sample of leaders of Evangelical organizations, ranging from churches and missionary associations to relief agencies and political group, conducted in the fall of 2002, and supported by a grant from the Pew Charitable Trusts.

To analyze the students' perceptions of Islam, we converted the aforementioned six Likert questions into individual and aggregate scores. In order to calculate an aggregate score, we inverted the scores of the "negative" perception questions (Violence, Intolerance, Oppression). Therefore, the higher the aggregate score, the more positive the perception.

To determine where students say they are getting their knowledge of Islam and the Muslim world, we asked students to rank the following sources of knowledge, from 1 (highest) to 6 (lowest): Media (TV, internet, radio, etc.); Teachers; School Materials (i.e., textbooks); My Friends; Family/At home; Muslims.

The knowledge score was based on the number of multiple-choice questions answered correctly. The ten multiple-choice questions from the Islam and Muslim World Survey were utilized in order to measure students' knowledge of Islam and the Arab and Muslim World. Specifically, seven of these questions were derived from the World History textbooks used in the classroom; the other three multiple-choice questions were obtained from readily available popular media sources. The questions from the student focus-group interviews and the individual teacher interviews were constructed in order to parallel the questions from the survey. This was done in order to elicit responses with greater depth and clarity, and to ensure reliability and internal validity. To look for significant correlations between perception and knowledge, and significance in students' source of knowledge, we used a variety of SPSS tests, including nonparametric tests, compare means tests, descriptive tests, and correlation tests.

Results

Upon analyzing the data, four prominent themes emerge. First, overall, there is no correlation between students' knowledge and perceptions of Islam and the Arab and Muslim world. Even though we found a substantial difference in the students' knowledge scores among the three schools (Table 1), a Pearson correlation test of total student responses (N=211) revealed no correlation between overall knowledge and overall perceptions of Islam and the Arab and Muslim world ($r(211) = .080$, $p > .05$).

Table 1
Number of Knowledge-Based Questions Answered Correctly Separated by School

		High School #1	High School #2	High School #3
# of m/c items answered correctly	0	2	6	
	1	4	4	
	2	11	19	5
	3	19	16	8
	4	13	13	15
	5	7	8	21
	6	3	2	9
	7	1	1	9
	9	1		

When assessing correlations between students' knowledge and the individual questions used to examine students' perceptions, a Pearson correlation test (ρ) demonstrated significance for positive correlations between knowledge and non-intolerance ($\rho = .155$, $p = .025$), knowledge and non-violence ($\rho = .265$, $p = .000$), and knowledge and peacefulness ($\rho = .180$, $p = .010$); concurrently, a negative correlation between knowledge and equality ($\rho = -.235$, $p = .001$) was found to be significant.

Our second result concerns the perceptions of the students about Islam and the Arab and Muslim world by their school class. In general, the students across all the classes – AP, Honors, and Regular – had fairly positive perceptions of Islam. Using Anova tests, we found the AP mean score for Intolerance to be significantly greater than both the Honors and the Regular class

mean scores for this variable (F=6.34, *df*=2, p=.002). This means that the students in the AP class disagreed, to a significant degree, with the statement that Islam is an intolerant religion. We also found a similar result for the AP class for the variable Violence; i.e. the AP class disagreed, to a significant degree, with the statement that Islam is a violent religion. (F=5.073, *df*=2, p=.007).

Using Chi-Square tests, we found that both the regular and honors classes were undecided on the variables of Intolerance and Violence, but both classes agreed with the statement that "Islam allows Muslim women to be oppressed by Muslim men." The students in regular classes went so far as to disagree, to a significant extent, that "Islam promotes gender equality and preaches that women are every bit as human as men."

Our third prominent result is that, in all three schools, students stated that they were getting most of their knowledge about Islam and the Muslim world from three sources: teachers, textbooks, and media. In High Schools #1 and #3, students ranked teachers as their most important source of knowledge; in High School #2, students ranked media as their most important source of knowledge. Using a Kruskal-Wallis test, we found that textbooks are a significant source of knowledge for students.

Mann-Whitney tests ranking sources of knowledge across schools show that there is a significant difference between AP classes (in High School #3) and Regular or Honors classes with respect to textbooks. For honors, $U = 326.000$ and $p < .05$, and for regular classes, $U = 689.500$ and $p < .05$. In other words, AP students' reliance on textbooks explains the significance conferred to textbooks as detailed in the Kruskal-Wallis test. Furthermore, students in Honors and Regular classes designated teachers as their primary source of knowledge about Islam and the Arab and Muslim world. This is particularly interesting, given the fact that, overall, students in High School #3 ranked textbooks third, after teachers and media.

Contrary to where students said that they were getting their knowledge about Islam and the Muslim world, the majority of the teachers interviewed assumed that students were getting their information mostly from sources outside of school. Specifically, of eight teachers interviewed (the ninth teacher could not be contacted for an interview), half believed that their students were getting most of their information from media sources such as television and the news. One teacher in particular stated that her students were integrating their knowledge based on "prejudicial ideas that they already have"; only two of the educators interviewed specifically stated that teachers were a primary source of knowledge for students.

Our fourth prominent result is that students have specific recommendations on how to change the school curriculum and/or classroom practices with respect to expanding their knowledge and gaining a more comprehensive view of Islam and the Arab and Muslim world. Generally, students from each school suggested hands-on activities, cooperative group work, a focus on current events, lesson plans that employ different perspectives, in-class visits from Muslim individuals and community leaders, and more time devoted to the topic. The following represent some of the most revealing student responses upon being prompted to suggest changes in the curriculum: "Stuff that makes you think out of the box. Not just reading and books and answering questions." "We should have more opportunities to learn more about history and current events." "I would like to learn some positives and not always the negatives." "You can't judge a person without knowing them." "We want to get their point of view."

Conclusions and Recommendations for Further Research

From the several prominent themes indicated by the data, we can conclude that knowledge follows the arc of the class; specifically, the average of knowledge scores increases from the regular World History classes to the Honors World History classes, and increases from

the Honors World History classes to the AP World History class. Nevertheless, regardless of the class type, students lack significant knowledge concerning Islam and the Muslim world.

More interesting, with the exception of the AP class, students say that they are getting their information from their teachers over their textbooks when they are asked to rank the sources of their knowledge with respect to Islam and the Arab and Muslim world. This places the focus on teachers, whereas previous studies on Islam and the Arab and Muslim world in American schools have emphasized the textbooks (Sewall, 2003; Ravitch, 2003; Douglass and Dunn, 2003). Coupled with students' specific recommendations on how to improve the curriculum and/or classroom practices, the impetus falls on improving the pedagogical content at the teachers' disposal.

Further research must address students' perception of Islam and the Arab and Muslim world in a more comprehensive manner; for example, an extensive survey must be created in which several questions (as opposed to 2) are constructed for each variable, to increase reliability. We will also look further into the sources of media, to get a more nuanced perspective on where students say that they are getting their information about Islam and the Arab and Muslim world outside of school. Finally, we want to compare students' knowledge, using pre-9.11 and post 9.11 textbooks.

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Scaffolding in Second Language Learning and Instruction

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Abstract: In a study of the triadic interaction among pairs of advanced second language learners engaged in a complex language task, it was found that the scaffolding provided by the researcher was determinant in keeping the participants on task and encouraging language production, thus facilitating both language development and comprehension.

This paper reports on the ways in which the researcher-teacher intervened in the interaction of pairs of advanced English language learners as they worked together in an effort to decipher the meaning of a series of puns contained in comic strips. The task was designed to engage the learners with language that was humorous and ambiguous since, to become truly proficient, learners must be able to interpret these aspects of language that are often present in actual use by native speakers (Cook 2000; Lakoff 1987; Wittgenstein, 2002).

Theoretical Framework

The design of the study was based on the tenets of sociocultural theory (SCT), which has gained many advocates (Lantolf 2000; Swain 1997) within the field of second language acquisition. The premise that learning occurs in the discursive practices of individuals has been observed in the interactions among language learners, and between learners and teachers in instructional settings (Brooks, Donato & McGlone 1997; DeGuerrero & Villamil, 2000; Kaplan & Lucas 2001; Ohta 2001; Platt & Brooks 1994; Swain 1997). Learners co-construct language and knowledge about language through the process of collaborative dialogue (Swain, 1997). Because they are active builders of knowledge, the learning achieved through the dialogic process tends to be more lasting than that gained through teacher-directed activity (Basturkmen, Loewen, & Ellis 2002). This is not to say, however, that the teacher has no role to play. The current study indicates that the instructor offers crucial assistance, first, in the selection of the task and, second, through the assistance given during the conversations.

Van Lier (2002) highlighted the importance of task selection in second language learning with his concept of triadic interaction (see Figure 1). According to this model, language emerges when learners work "side by side with a joint focus of activity" (p. 147). The object of attention provides a context for meaning making and becomes the "third interlocutor" (p. 148) in triadic interaction. Therefore, the nature of the task is of consequence since it determines the quality of the interaction between the learners. In accordance with SCT, the task should be challenging and motivating, just a little more difficult than the learner is able to do on his/her own.

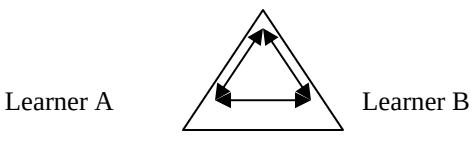

Figure 1: *Model of Triadic Interaction*

When the task is a little beyond the current capabilities of the learners in instructional settings, the teacher guides them to understanding through scaffolding, a term adopted in SCT to indicate the support offered only until the learners are able to complete the task on their own. Once they are capable of accomplishing the task without help, the support is removed, as scaffolds are removed when construction of a building is completed.

The Study

The participants were advanced English language learners at an intensive English institute on a southeastern university campus. Most were learning English to pursue undergraduate or graduate studies in the United States, but some were interested in enhancing their employment opportunities or job performance. The researcher asked the pairs of learners to read the comic strips one-by-one and to work together to come to an understanding of the double meaning inherent in the puns. Further instructions were for the participants to indicate if they understood the comic after reading it. If they both understood, they were directed to explain the double meaning to the researcher. If one understood and the other did not, the one who understood was to explain the ambiguity to the other. If neither understood, they were to try to work out the meaning together.

The conversations were digital video recorded and subsequently transcribed. For analysis, the researcher organized the data into separate structural maps, with each map containing the conversation related to each pun. There were five pairs of participants discussing eight puns, so there was a total of 40 maps, which were denominated pun-related dialogues (PRDs). The PRD was a complete sequence of interaction regarding each pun.

Results

Through coding for understanding in the opening and closing of each of the PRDs, the researcher determined that comprehension increased from 28.75% at the beginning of the dialogues to 77.5% at the closing, and further to 91.25% in individual follow-up interviews the day after the original conversations.

The task difficulty highlighted the scaffolding role of the teacher-researcher. When both participants understood the pun at the opening of the PRD, the intervention was minimal. As participant comprehension decreased, more guidance was required, as shown in Table 1.

Table 1

Number of Total and Researcher Turns per PRD

Comprehension at opening of PRD	Number of PRDs	Average number of turns	Range of total turns	Average number of researcher turns	Range of researcher turns
Both understood	7	15.3	10 – 24	2.0	1 – 4
One understood	9	25.5	12 – 39	5.4	1 – 13
Neither understood	24	30.3	9 – 63	5.8	0 – 1

The interventions of the researcher were few and limited in the 7 PRDs in which both participants understood the double meaning of the pun at the opening of the dialogue. There were two types of comment: a) asking that the participants explicitly state the double meaning and b) expressing approval. Excerpt 1 demonstrates these interventions (see Table 2). The participants,

Trina and Kyeung, laughed when they read a single frame Dennis the Menace cartoon in which Dennis is sitting on his grandfather's lap in a rocking chair and remarks to his mother: "Look Mom! We're a rock group."

Table 2

Excerpt 1

Turn	Participant	Transcript
8	Trina	It's funny because it's trying…uh, like they're sitting in a rock chair…and it says 'Look, Mom. We're a rock group', so it like double meaning, like, they're sitting in a rock chair and he's trying to tell his mom that they're in a…rock group, just…uh…
9	Kyeung	So rock group means the music rock group, so it's kinda, you know…it's not real rock group, but they're sitting on the rock chairs, so they say they're a rock group, yeah…
10	Trina	That's the main…I guess.
11	Researcher	OK. So where is the, the…two meanings are…in the, in the…
12	Trina	One they are sitting in the rock chair…
13	Kyeung	…rock chair…
14	Trina	…and the other is that…Dennis, like thinking…we're in a, like, a rock band…like a…
15	Researcher	Uh, uh…
16	Trina	…the rocking chair makes sound…band…
17	Researcher	OK. So it's in the rock. Good.

In Turns 8 and 9, Trina and Kyeung constructed the explanation together. When Trina got stuck in Turn 8, Kyeung took over. They obviously understood that the ambiguity lay in the double meaning of the word "rock". The researcher comment in Turn 11 asked for an explicit rendering of the ambiguity, while in Turns 15 and 17, the intervention was in the form of encouragement and approval.

Table 3

Excerpt 2

Turn	Participant	Transcript
2	Marguerite	Ah. OK. The father…
3	Lenora	Grandfather.
4	Marguerite	The grandfather and the grandchild…
5	Lenora	…son, yeah…
6	Marguerite	…are on rocking chairs.
7	Lenora	Ah, yes.
8	Marguerite	You see?
9	Lenora	Mm,mm.
10	Marguerite	And they are a rock group.
11	Lenora	Yeah. Because of that they are on rocking chairs.
12	Marguerite	Mm,mm. Is that it?
13	Researcher	Yeah. And what is…?
14	Lenora	The second meaning is…rock is, uh…something hard.
15	Marguerite	Rock is like, uh…music group.
16	Lenora	Something strong.
17	Marguerite	The singing group of rock.
18	Researcher	What do you think it is here?

In the PRDs in which only one of the participants understood the pun at the opening of the dialogue, the researcher sometimes became more directive in her comments. While there were instances when she simply asked for the double meaning, as above, there were also times when she directed the discussion because she thought it was getting off track, as seen in Excerpt 2 (see Table 3). Lenora and Marguerite were discussing the same Dennis the Menace cartoon.

Here the researcher (Turn 13) answered Marguerite's question in Turn 12. The intervention was an affirmation and a request for the double meaning. When Lenora referred in Turns 14 and 16 to a third meaning of rock, the researcher intervened further (Turn 18) in an attempt to get them back to Marguerite's meaning expressed in Turns 15 and 17.

The researcher was most active when neither of the participants understood the pun. At times, the researcher actually regulated or led the interaction, as exemplified in Excerpt 3 (see Table 4). Carolina and Hyun Ja were trying to find the ambiguity in another Dennis the Menace single frame cartoon in which Dennis and his friend Joey are watching a man walk away from a truck that says "Acme Plumbing: 24 Hour Service". Dennis tells Joey: "He says he's a drain surgeon".

Table 4

Excerpt 3

Turn	Participant	Transcript
1	Carolina	Do you understand?
2	Hyun Ja	I just know one meaning, yeah.
3	Carolina	He's, he's…plumb…
4	Hyun Ja	Yeah, plumber, yeah.
5	Carolina	…so he fix the plumbing…
6	Hyun Ja	…pipes, right…
7	Carolina	So he's the drain surgeon…like the doctor that…
8	Hyun Ja	Medical doctor.
9	Carolina	It's like the doctor of the plumbing…something like that.
10	Researcher	Uh, uh. That's the doctor. Where's the double meaning there?
11	Carolina	That he fix the plumb…and…I don't know…Ah, drain.
12	Hyun Ja	His car is advertising…they can…uh…fix plumbing for 24 hours…like emergency in hospital.
13	Researcher	Like a hospital is open 24 hours. Does drain remind you of something?
14	Carolina	Brain? Kind of brain surgeon
15	Hyun Ja	Ah-h-h…Yeah…brain…drain.

In Turn 10, the researcher asked for the double meaning, as she had in Excerpts 1 and 2. Carolina appeared to begin to see the source of the ambiguity in Turn 11. However, when Hyun Ja seemed to be leading the conversation in another direction in Turn 12, the researcher intervened to direct the conversation in Turn 13, which prompted immediate recognition on the part of both participants that the ambiguity lay in the phonological connection between "brain" and "drain".

Discussion

The low rate of comprehension on the first reading of the comic strips indicates that the task was challenging for the learners, a little beyond their current understanding. At the same time, the participants were motivated to accomplish the task since they were eager to take part in the study and found the comic strips of interest, as noted by one participant: "It's better with

cartoons, because you laugh, you learn, you get the point quicker. Have they tried to teach with cartoons?" (Lucas, 2004, p. 107).

While the task was an effective third interlocutor in the triadic interaction, the scaffolding of the researcher-teacher provided a fourth element that contributed to the increase in understanding. The interventions during the PRDs regulated the conversation and gave encouragement. The regulation most frequently took the form of asking for the double meaning. This was a way both of ascertaining that the participants actually understood the ambiguity and obliging them to produce the language to express their comprehension. It was therefore a way of promoting language use. Sometimes the regulation directed the conversation when the researcher felt that the participants were getting off track, as seen in Excerpt 3. The participants thus arrived at understandings they may otherwise have been unable to achieve.

The affirmations of understanding may have played a role in the increase in comprehension the day after the conversations. As noted above, while the comprehension rate was 77.5% at the closing of the PRDs, during follow-up interviews it was 91.25%. One reason may have been that the participants continued to discuss the comic strips in the interim. The process of internalization, as posited by Vygotsky (1978), through which external activity is "reconstructed and begins to occur internally" (p. 178), was certainly a factor. Both the posterior discussions and the internalization may have been influenced by the comments of the researcher that affirmed the appropriateness of the interpretations offered by the participants during the collaborative dialogue. Through this confirmation of their understanding, the participants were able to have confidence in the correctness of their understanding.

The importance of the scaffolding role of the teacher-researcher suggests a modification of the model of triadic interaction. In instructional settings, the triadic interaction among students is most efficient when mediated by the interventions of the instructor, as illustrated in Figure 2.

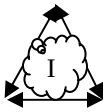

Figure 2: *Mediated Triadic Interaction*

Among the implications of the dynamics of mediated triadic interaction for the second language classroom is that the instructor must be vigilant when students are engaged in group work. Intervention is important to keep the learners on task. Another inference drawn from the data is that encouragement by the teacher both motivates the learners to continue and affirms their contributions, thus building confidence. Teachers do not cause learning to occur (Larsen-Freeman, 1997), but they have a crucial role, first, in developing a curriculum and selecting tasks that motivate learners to co-construct knowledge, and second, in guiding and motivating their students during the realization of the task.

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Children as Change Agents: The Influence of Integrating Environmental Education into Home Learning Projects on Families and Community Members

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Abstract: Environmental education focusing on sustainability should be integrated into the elementary curriculum. Learning experiences should include home learning projects that are relevant to the students, involve active participation, and stimulate discussions with their families. Students can use their knowledge and skills to influence the attitudes and behavior of their parents and other community members.

Environmental history shows us that environmental education is a relatively new field that is becoming increasingly more critical as our natural resources are deteriorating at a rapid rate. Environmental education should raise children's awareness of the environment and provide learning experiences through which they obtain knowledge, values, and skills to solve environmental problems now and in the future. Ideally, environmental education should be a continuous learning process that is integrated into the curriculum and begins when children are very young. Why begin environmental education so young if it takes years before the children grow up and become policy makers?

When they are young, children can be more easily taught to have respect for the environment as a way of life. As they become involved in environmental issues that relate to their immediate environment and the world beyond through school projects, they will not only learn and retain the information, they will also internalize the values associated with caring for the environment and conserving our resources. Another benefit is that children have tremendous influence over their parents and can use the knowledge and skills learned through their participation in learning experiences to influence the attitudes and behaviors of their parents and other community members.

Children today need to learn different information than their parents or grandparents did, as each generation differs in the kind of education children need to acquire at school. Many factors determine curriculum including history, social policy, research, and current situations. Environmental history has become increasingly relevant today because as the curriculum reflects society's trends, the need to practice activities that promote sustainability are evident. Information is growing so rapidly now that sometimes children's knowledge is more up to date than their parents'. Children learn information about environmental issues in school and in the media; however, environmental education was not such an issue when their parents were in school. It is unlikely that all adults will receive the education that is needed to make serious changes in environmental behavior and policy. However, by involving children in school projects which require parent participation and home learning, children have the potential to be change agents by effectively influencing their parents' attitudes and behavior concerning environmental issues.

Need for Integrating Environmental Education

Environmental education is a long term solution to environmental problems. The goal of sustainable development is to increase human well-being while reducing negative human impact

on the environment (Santone, 2003/2004). All citizens should be involved in caring for the environment. Home learning projects based on environmental issues can serve as a means to reach more than one generation. This inquiry combines the need for environmental education for all ages, the theory that children learn best when involved in active learning strategies and the idea that children have tremendous influence over parental attitudes and behaviors. This study investigates the use of home learning projects in environmental education to determine what effect the projects have in changing student attitudes and behaviors and to what extent does student learning affect parent attitudes and behaviors concerning environmental issues?

Many trends in education today reflect the need to focus on the environment, impressing upon children the need for clean air and water, the conservation of natural resources and energy sources. Often, children and adults alike take our resources for granted. Compared with other countries, Americans are less self-conscious of how unsustainable a high energy society is (Nye, 1999). Children may not even be aware of energy unless there is a storm or power outage. Environmental education needs to be integrated into the curriculum so that it is evident in daily activities and children internalize values and engage in pro-environmental behavior as a way of life.

Active Participation in Relevant Activities Key to Success

The Roundtable is a cooperative endeavor of educational agencies from 12 states working to improve student learning by integrating environment into the K-12 curriculum and school reform efforts. The Roundtable completed a study on a specific area of environmental education, using the environment as an integrated context for learning (EIC), to identify the most innovative and successful programs in over 40 schools. Evidence gathered showed that students learn more effectively in an environment-based context than in a traditionally based framework (Lieberman & Hoody, 1998) and that the primary effect of EIC was increased knowledge and understanding of scientific concepts, process, and principles and the ability to apply concepts to real life situations.

According to constructivist philosophy (Varelas, Pappas, Barry, & O'Neil 2001), children do not pick up scientific distinctions and understandings just by being explicitly told or by reading information books. Children need the opportunities to discuss science when emergent understandings are being developed. As they are trying to express scientific concepts, their explanations are helpful in assessing their developing thoughts, misconceptions, and conceptual understandings. Parents and teachers need to assist children in learning new words and associated concepts when reading (Owens, 2003). This is especially important when there are students and families of many different cultures. We have a responsibility to translate new concepts into everyday language.

A study by El-Hindi, Evans, Gill, and Marchant (1996) on gaps in student science knowledge revealed that many teachers failed to engage students' activity in "doing" science which helps students connect observations with developing theories. His research supports the view that students need to discuss ideas as they learn. When educators assign home learning activities that focus on environmental awareness, the learning involves more than just the child as parents and other family members are involved in discussions concerning the relevant topics.

Patricia Hewitt (1997) conducted a study using instructional games focused on the topics of energy, pollution, endangered species, wetlands, and individual effects on the environment to change student attitudes and behavior. She concluded that knowledge alone does not cause significant influence. By interacting with their environment, children are able to reinforce a variety of internal developmental processes. She states that valuing may be one of the processes

that influence the selection of modes of action. Actively involving children in solving local environmental problems and teaching specific values encourages them to develop ecological morality and become more active at a global level.

A review of literature (Leeming, Porter, Dwyer, Cobern, & Oliver, 1997.) analyzed 34 studies evaluating some form of environmental education on changes in students' knowledge, attitudes, or behaviors. Twenty were students grades K-8, the rest were older children or adults. Younger children were less likely to have well-established environmentally harmful behaviors to unlearn, longer time period to influence environmental quality, and the potential to be effective agents to promote environmentally responsible behaviors in others. Teachers reported that activities that required active participation were most effective, and younger students in grades 1-3 showed a more positive attitude toward the environment than students in grades 4-6.

A research study designed to evaluate the effectiveness of residential environmental education programs in fostering positive attitudes toward wildlife (Dettmann-Easler & Pease, 1999) found that content, knowledge, and skills, are not as effective in influencing attitude changes as when you add action to the program. Findings from a study designed to examine changes in moralistic and ecologistic attitude categories suggested that film and written media are important influences on environmental attitudes and that the key influences; talking at home, watching films and reading are long term and continuous (Eagles & Demare, 1999).

Intergenerational Influence

Actively involving children in solving local environmental problems encourages them to become active at a more global level. A study by Evans, Gill, & Marchant (1996) investigated the indirect influence of environmental education in schools on parents' attitudes toward the environment. The pre-education questionnaire, which covered transport, household wastes and recycling, energy, and environment, showed that students appeared to be better informed on environmental issues than their parents. After participating in various activities the post questionnaires revealed that children indirectly influenced their parents to recycle as a result of participation in the environmental program. The researchers also concluded that take home projects in which schoolchildren involve their parents and others are beneficial.

A similar study conducted by Leeming et al. (1997) was designed to determine whether environmental attitudes and knowledge of children who participated in pro environmental activities changed relative to non participants and whether children who participated influenced their parents' environmental attitudes and knowledge. The researchers focused on the effects of extending the program for a longer period of time and expanding the age groups of participants. They used pre and post tests to measure attitudes and knowledge in six sub domains; animals, energy, pollution, recycling, water, and general issues. Parents of the participants reported that they had shown greater changes in concern for the environment, in changing behavior, and in talking with their children about environmental issues.

A study designed to see how children learn and retain conservation principles and transfer them to their parents used pre and post tests before and after a one month environmental education course in Costa Rica. Researchers found that parents learned from children and both groups transmitted course information to neighbors resulting in an increase in community learning (Vaughn, Gack, Solorazano, & Ray 2003).

Students and parents were surveyed and interviewed regarding their perceptions about six environmental programs to determine the influence on environmental learning and the extent and nature of discussions that the programs stimulated between students and parents. Findings showed that students can and do share their learning and environmental attitudes with their

parents and bring about positive change in household practices. The findings also reinforced the importance of including an action component and challenged educators to encourage the process of intergenerational communication and influence in their programs.

Practical Applications

Engaging in activities that are relevant to the learner is a key factor in the success of the program. Educators need to look at community concerns. In South Florida, energy issues are critical and relevant to the students. Hurricanes and major storms have provided many students with the personal experience of being without electricity. Using personal observations to initiate discussion, students could learn about energy, how it is created, stored, used, and measured. Home learning projects could include surveys about energy use and recycling, and involve activities using hand generated radios and flashlights, and solar powered accessories. Families can conduct and write about the projects together, which contributes to more conversation and greater understanding.

Students can also raise community awareness with service projects designed to help solve community problems. Projects that focus on clean water can range from cleaning the beaches and Everglades concerns to storm drains. The variety of activities included in the environmental education curriculum varies widely according to the age of the students, school curriculum, teacher preparation, and current local environmental concerns. Although this variety makes it difficult to effectively determine the success of projects, the extent of internalizing environmental values is demonstrated over time.

Implications and Conclusions

The United Nations has declared 2005-2015 as the Decade of Education for Sustainability (Santone, 2003/2004). Yet, except for Vermont, the terms sustainability does not yet appear in state standards. The National Council for Science and the Environment (cite) identified it in 2003 as one of the five crucial areas where more research is needed to find ways to involve our students to participate in sustainable lifestyles.

Educators need to find more ways to include active learning projects that involve families in the curriculum. It is essential that we are able to educate the children, engage them in environmentally responsible behavior, and use them to influence the attitudes and behaviors of their parents and other community members.

Activities that require active participation and are focused on something relevant to the learner result in learning which can be internalized and transferred to other situations. When students and families engage in home learning science projects that involve practicing skills, data collecting, analyzing, and decision making, they learn together. When they enjoy learning, they are more apt to act on the knowledge they have gained. Activities which involve different groups are beneficial to expand awareness and responsible behavior. More emphasis should be placed on home and community projects to involve all the different sectors of society, the decision makers and the ones that will be affected. If we can educate our students to care for and conserve our resources, they will share their concern and enthusiasm to influence those around them.

Environmental education focusing on sustainability needs is a process which needs to be integrated into the curriculum so children will internalize the values at a young age. Students are in a position where they can effectively be used as change agents to use their knowledge, skills, and attitudes concerning the environment to influence parents and other community members. By actively involving students in home learning projects, children and families will benefit from the discussion and increased interaction as they learn to be environmentally responsible together.

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Effects of Dehydration on Balance as Measured by the Balance Error Scoring System

Jennifer L. McKinney, Lindsey E. Eberman, Michelle A. Cleary, Richard Lopez, and David Sandler

Abstract: The purpose of this study was to identify the effects of active dehydration on balance in euthermic individuals employing the Balance Error Scoring System (BESS). The results indicate that dehydration significantly negatively affects balance.

The effect of dehydration on balance, performance, and proprioception is an important topic in athletic training and sports. Understanding the physiology of the body and the compensatory mechanisms offset by dehydration is essential to certified athletic trainers, team physicians, and emergency medical technicians. Dehydration may have serious effects on balance, greatly diminishing athletic performance and predisposing an athlete to injury.

Barr (1999) demonstrated that dehydration can cause increased heart rate, elevated core body temperature (hyperthermia) and increased oxygen consumption. All of these factors can inevitably lead to decreased performance during sport activity, even when the level of dehydration is as modest as 1-2% (Casa et al., 2000; Convertino et al., 1996; Neave et al., 2001). Fatigue caused by exercise and dehydration may lead to decreased postural stability due to a lowered muscle efficiency and decreased proprioceptive sensitivity. Decreased postural stability can affect an athlete's abilities during activity, leading to injury. Rehydration to replace water lost through sweat during exercise helps to maintain good postural stability. Good postural stability was described as a low sway path when assessing body sway (Gauchard, Gangloff, Vouriot, Mallie, & Perrin, 2002). Dehydration also negatively affects performance (Burge, Carey, & Payne, 1993; Devlin, Fraser, Barras, & Hawley, 2001).

This study examined the effects of exercise-induced dehydration on balance using the Balance Error Scoring System (BESS). The BESS is an instrument commonly used to evaluate postural stability on the field after mild head injury (Reimann, Guskiewicz, & Shields, 1999). The BESS tests three stances (double-leg, tandem, single-leg) which are each performed on both stable (firm) and unstable (foam) surfaces. Each stance is performed for 20 seconds. The instrument scores participant errors counted during stances.

Methods

Research Design and Procedures

The research design consisted of a test-retest design with three within-subjects factors. The three independent variables were: hydration status (euhydrated, dehydrated), stance (double-leg, tandem, single-leg) and surface (stable, unstable). The dependent variables were total balance error scores (TBES) and stance errors scores (SES) as measured by the BESS.

Familiarization session. Potential participants reported to the Sports Science Research Laboratory at Florida International University (FIU) for a familiarization session, during which the health and injury questionnaire was completed and the informed consent form was read and signed. The investigator distributed the CorTemp™ Ingestible Core Body Temperature Sensor (HT150002, HQInc., Palmetto, FL) along with a participant letter explaining expectations, a description of the sensor, and instructions for its ingestion. Demographic information, baseline nude body mass (model BWB-800S digital medical platform scale, Tanita Inc., Brooklyn, NY),

and waist circumference were recorded. The BESS was demonstrated to the participants and standard instructions were provided verbally. Previous research has differed on whether repeated administration of the BESS elicits a "practice effect" (Riemann et al., 1999; Riemann & Guskiewicz, 2000; Valovich, Perrin, & Gansneder, 2003), however, research on other balance assessment systems has determined that two or more test trials ensures negated practice effects (Lephart, Pincivero, & Henry, 1995). Therefore, participants practiced the BESS protocol two times in order to avoid a "practice effect" during testing. To perform the test, the participants must stand with their hands on the iliac crests, eyes closed, feet fully on the surface, with the exception of single-leg stance, where the participant stands in 20^{o} of hip flexion and 40^{o} of knee flexion. Errors in stance are: (a) lifting hands off hips; (b) opening eyes; (c) stumbling or falling; (d) moving the hip into more than 30^{o} of flexion or to the side; (e) lifting front of foot or heel; (f) and remaining out of testing position for more than 5s. Each error is scored as one error point and performance is based on the total number of error points. The maximum number of errors per trial is 10, therefore the maximum number of errors per BESS test is 60 (Riemann et al., 1999; Riemann & Guskiewicz, 2000). Participants were instructed to return to the laboratory the following day wearing mesh shorts, a cotton t-shirt, sweat socks, running shoes and a sports bra or athletic supporter and to refrain from eating or drinking after 12 am the night before testing. Participants were also instructed not to ingest alcohol, caffeine, or non-prescription medication, or to engage in dehydrating behaviors (sauna, diuretics, sweat suits, etc.) for the duration of the study.

Heat stress exercise protocol. A heat stress exercise protocol was performed in order to cause active dehydration in participants. Prior to the protocol, participants completely voided urine (urine specimen was collected) and measurements of urine volume, urine color (urine color chart, Human Kinetics, Champaign, IL), and urine specific gravity (urine refractometer, model 300CL, Atago, Inc., Japan) were recorded. Participants were weighed and were required to have a nude body mass within $\pm$1% (or 0.4 kg) of baseline nude body mass to continue, which ensured that the participant began the protocol fully hydrated (euhydrated). Participants performed the BESS protocol and euhydrated scores were recorded. The heat stress exercise protocol consisted of the participants exercising outdoors on a motor driven treadmill (Proform, ICON Health & Fitness, Logan, UT) in a warm, humid environment. The participant warmed up at 40% maximum heart rate for 5 min and then increased speed to maintain 60 – 75% maximum heart rate until a criterion 3% loss of euhydrated body mass was reached. Maximum heart rate was determined by subtracting the participant's age from 220 and percentage of maximum heart rate was determined by the Karvonen method. The heat stress exercise protocol varied in time from approximately 75-120 min depending on participant sweat rate and fitness and acclimatization levels. Participants were allowed water if absolutely necessary but were discouraged from drinking. During the heat stress exercise protocol, core body temperature and heart rate were measured every 5 minutes; blood pressure and rating of perceived exertion (RPE) were recorded every 15 min as precautionary measures. Core body temperature was measured by a CorTemp™ Ingestible Core Body Temperature Sensor (HT150002, HQInc., Palmetto, FL) that was ingested and tracked with a CorTemp™ Miniaturized Ambulatory Data Recorder (HT150016, HQInc., Palmetto, FL). Heart rate was measured using a Polar® heart rate monitor (Polar Electro Inc., Woodbury, NY). Blood pressure was assessed using a stethoscope and sphygmomanometer (American Diagnostics, West Babylon, NY). Rating of perceived exertion (RPE) was measured every 15 min during exercise using the Borg Scale (Borg, 1998).

Recovery period. The recovery period consisted of participants resting indoors in a

thermoneutral environment where core body temperature was recorded until it returned to baseline (euthermic). Research has determined that balance (measured by BESS) decreases after fatigue (Wilkins, Valovich McLeod, Perrin, & Gansneder, 2004) but effectively recovers within 20 min after exertion (Susco et al., 2004). Thus, the prolonged recovery period ensured euthermia and diminished fatigue, ruling out hyperthermia and leg fatigue as confounding factors. No fluids were given during this period. Following recovery, participants removed all clothing, toweled dry, voided all urine (urine specimen was taken), and criterion body mass loss was confirmed. Measurements of urine volume, urine color, and urine specific gravity were recorded. Postural stability of the participants in a dehydrated state was then assessed by the BESS protocol and data were recorded. At the end of the data collection session, participants were required to orally re-hydrate with cool water until they returned to within 2% of their euhydrated body mass.

Participants. A random sample of 19 healthy volunteers were recruited from the university student body and surrounding community, however only 10 (7 men, 3 women; mean $\pm$SD: age = 25.2 $\pm$ 4.7 years; height = 177.9 $\pm$ 18.2 cm; body mass = 83.4 $\pm$ 14.8 kg) achieved the criterion body mass loss (mean body mass loss = 3.03 $\pm$ 0.34 %). Potential participants were screened by completing the health and injury history questionnaire to ensure they met the following conditions: no history of heat-induced illness, no chronic health problems, no orthopedic limitations, and no history of cardiovascular, metabolic, or respiratory disease within the past year. Participants read and signed the informed consent form for the study which was approved by the FIU Institutional Review Board.

Statistical analysis. TBES were compared with a 2 (condition) x 2 (surface) repeated-measures analysis of variance (ANOVA) and SES were compared using a 2 (condition) x 3 (stance) x 2 (surface) repeated-measures ANOVA. Descriptive statistics were calculated for measures of hydration, environmental monitoring, and thermoregulatory and cardiovascular monitoring. Data were analyzed using the SPSS 11.0 for Windows Statistical Package (SPSS, Chicago, IL). Significance was set at $P \leq .05$ for all statistical analyses.

Results

Significant dehydration ($t_9 = 13.388$, $p \leq .001$) was revealed between conditions based upon two of three hydration status measures (mean body mass loss = -2.6 $\pm$ 0.6 kg; urine color $t_9 = -6.082$, $p \leq .001$, -2.05 $\pm$ 1.06 shades; and urine specific gravity ($t_9 = -1.940$, $p = .084$). No significant differences were identified between euhydrated (37.3 $\pm$ 0.37 ^{o}C) and dehydrated (37.6 $\pm$ 0.13 ^{o}C) core body temperature measurements after a prolonged period of recovery (44.00 $\pm$ 13.70 min) which ensured euthermia and diminished fatigue.

Main effects for TBES (Table 1 and Figure 1) revealed a significant 21.5% increase in errors in the dehydrated condition ($F_{1,18} = 16.639$, $p = .001$) and a significant 57.5% increase in errors on the unstable surface ($F_{1,18} = 90.064$, $p \leq .001$). Main effects for SES (Table 2 and Figure 2) revealed significant interactions between condition and stance ($F_{2,18} = 14.082$, $p \leq .001$) and between stance and surface ($F_{2,18} = 3.644$, $p = .047$). A significant 56.0% increase was found in the dehydrated condition ($F_{1,9} = 33.502$, $p \leq .001$), a significant increase in errors was found for each stance ($F_{2,18} = 110.042$, $p \leq .001$), and a significant 23.3% increase in errors was found for the unstable surface ($F_{1,9} = 9.767$, $p = .012$).

Discussion

While there is a large amount of research on the effects of dehydration on cognition, endurance, and exercise performance, there is scant research about the effects of dehydration on balance. The research protocol utilized in this study was most similar to Derave, De Clercq,

Bouckaert, and Pannier (1998) in that participants were tested on balance apparatus both before and after performing a prolonged exercise session without fluid. While participants in the Derave et al. study performed a 2 hr cycle ergometer exercise session, the participants in this study performed a 1.25-2 hr treadmill exercise session in order to more effectively mimic sports-specific posture and activity. While this investigation dealt only with active dehydration, Derave et al. also tested postural stability and found no effect after exercise with fluid replacement and after thermal dehydration produced by repeated sauna exposure.

Our study had no significant difference between baseline and post-recovery core body temperatures which ensured that participants were euthermic while performing the dehydrated BESS, and eliminated hyperthermia as a confounding factor. Research has determined that balance (measured by BESS) decreases after fatigue (Wilkins, Valovich McLeod, Perrin, & Gansneder, 2004) but effectively recovers within 20 min after exertion (Susco, Valovich McLeod, Gansneder, & Shultz, 2004). This allows us to conclude that the prolonged recovery period (44.00 $\pm$13.70 min) in this study diminished leg fatigue and ruled it out as a confounding factor.

Our primary finding was that dehydration adversely affected balance, as measured by the BESS. Although others have found that dehydration adversely affects balance (Derave et al., 1998; Gauchard et al., 2002), the BESS was not used as the balance measuring tool. The most likely explanation for our results follows a theory introduced in previous research (Gauchard et al., 2002). This research determined that dehydration can lead to body fatigue which reduces muscle efficiency and can influence an athlete to alter their normal posture. Proprioceptive muscle receptors are therefore affected and function with reduced sensitivity. Reduced proprioceptive sensitivity leads to a decrease in balance.

Limitations to the study include the relatively small sample size; thus future replications of this study should use a larger sample size to increase external validity of the results. Participant fitness and acclimatization were not tested. Therefore, one volunteer may have been more fit or acclimatized than another, causing differences in the length of time until dehydration or fatigue. Future studies may select participants based on a certain fitness or acclimatization level to more effectively mimic sport specificity.

Clinical Implications

This investigation determined that dehydration negatively affects balance. Balance deficits may result in diminished athletic performance and predispose an athlete to injury. The findings identify significant deficits in balance that likely result from decreased proprioceptive sensitivity and altered posture secondary to dehydration (Gauchard et al., 2002). Clinicians working with athletic populations must expect and recognize the effects of dehydration and act accordingly. Further research identifying the effects of dehydration on balance should incorporate a larger sample size and criteria for participant fitness and acclimatization should be more strictly monitored.

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(n= 10)	Condition*	Marginal Means	
Surface*	Euhydrated (TBES $\pm$sd)	Dehydrated (TBES $\pm$sd)	
Stable	3.9 $\pm$ 3.4	6.3 $\pm$ 3.9	2.4 $\pm$ 0.3
Unstable	10.6 $\pm$ 2.6	12.6 $\pm$ 1.3	3.2 $\pm$ 0.2
Marginal Means	1.7 + 0.4	3.9 $\pm$ 0.2	

Table 1. Total balance errors scores (mean $\pm$ SD) for euhydrated and dehydrated conditions. *****Significant differences were revealed between conditions ($F_{1,18} = 16.639$, $p = .001$) and between surfaces ($F_{1,18} = 90.064$, $p \leq .001$).

(n= 10)		Stance x Surface	Condition	
Stance	Surface	(SES ±sd)	Euhydrated (SES ±sd)	Dehydrated (SES ±sd)
Double	stable	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
	unstable	0.2 ± 0.1	0.0 ± 0.0	0.4 ± 0.3
Tandem	stable	2.5 ± 0.5	0.9 ± 0.6	4.1 ± 0.6
	unstable	3.4 ± 0.5	2.0 ± 0.6	4.8 ± 0.3
Single	stable	4.8 ± 0.4	3.0 ± 0.6	6.5 ± 0.4
	unstable	5.9 ± 0.4	4.3 ± 0.7	7.4 ± 0.3
	Total Means		1.7 + 0.4	3.9 ± 0.2

Table 2. Stance error scores (mean ± SD) for euhydrated and dehydrated conditions. *Significant interactions between condition and stance ($F_{2,18} = 14.082$, $p \leq .001$) and stance and surface ($F_{2,18} = 3.644$, $p = .047$) and main effects for condition ($F_{1,9} = 33.502$, $p \leq .001$), stance ($F_{2,18} = 110.042$, $p \leq .001$), and surface ($F_{1,9} = 9.767$, $p = .012$).

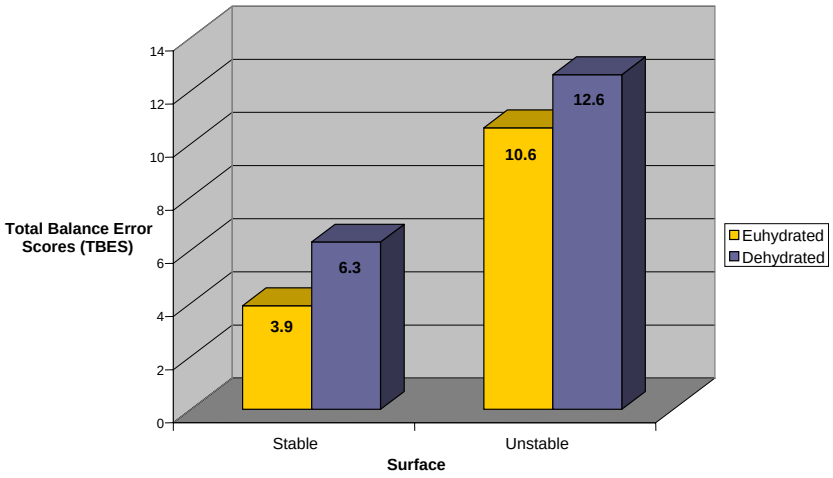

Figure 1. Total Balance Error Scores. *****Significant differences were revealed between conditions (euhydrated and dehydrated and between surfaces (stable and unstable).

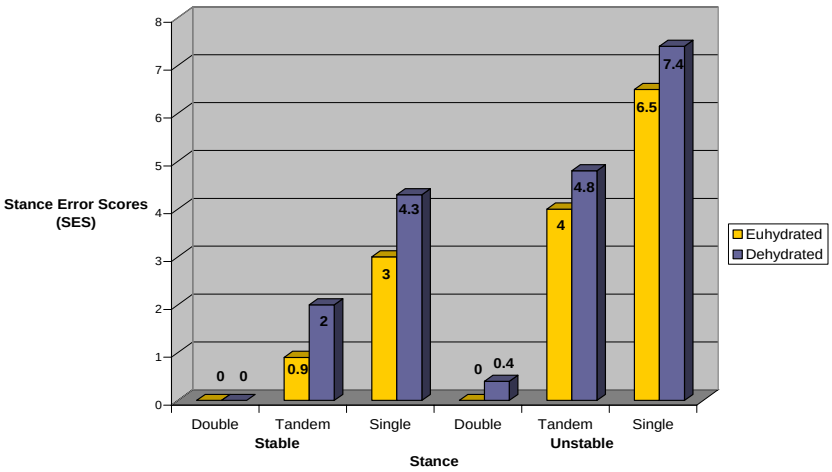

Figure 2. Stance Error Scores. *Significant differences were revealed for condition, stance, and surface with additional interactions between condition and stance and stance and surface.

The History of Kindergarten: From Germany to the United States

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Abstract: This paper examines the history of kindergarten from Froebel (1967a) to the current issues that pertain to kindergarten. The purpose of this paper is to call attention to the reason why kindergarten was first established and to demonstrate why it is important to revert to kindergarten as an aid for socialization.

Almost every person can think back to the first day of school, and the first thought that comes to mind is walking into a kindergarten classroom, holding on to mom crying or being excited of finally were able to go to school like older siblings. Each experience is unique, just as is the concept of kindergarten.

This paper reviews scholarly research and history books to examine the history of kindergarten, from its origins in Germany and to its establishment in the United States. This paper also tracks the changes that have taken place in the kindergarten curriculum since its arrival in the United States to call for teachers and policy makers to bring back the original concept of kindergarten as a tool for socialization to help children achieve school success.

Where did Kindergarten Come From?

Friedrich Froebel was born in Germany in 1782 to a minister father and his mother died before he was a year old (Froebel, 1967b). His father tried to teach him but Froebel constantly moved from school to school and served as an apprentice for various occupations. It was not until adolescence that he found satisfaction in his academic life (Headley, 1965; Moore, 2002). He went to university in Germany, studying under Pestalozzi and later served in the German army in 1813. After the war was over, Froebel returned to Berlin to care for his brothers' children after his death. This began Froebel's career in educating young children (Braun & Edwards, 1972; Froebel, 1967b; Weber, 1969)

In 1817, Froebel established a school in Keilhau, Germany, where he incorporated some of Pestalozzi's ideas (Braun & Edwards, 1972; Moore, 2002). He found that Pestalozzi's school lacked unity and felt that unity stems from God (Weber, 1969). Being raised in a religious environment with many family members as pastors, he believed that God's reason should be the center of the educational system (Shapiro, 1983). "Education consists in leading man, as a thinking intelligent being, growing into self consciousness, to a pure and unsullied, conscious and free representation of the inner law of Divine Unity and in teaching him ways and means thereto" (Froebel, 1974, p. 2).

Froebel moved to Blankenburg, Germany, in 1837 where he set up his school, that later became known as kindergarten (Headley, 1965). Froebel called for German women to come together and support the kindergarten. Because he described children as plants and teachers as gardeners, the term kindergarten emerged, kinder meaning child and garten meaning garden (Headley, 1965). The teachers, called kindergarteners, were called to educate the children from the earliest years through their own experiences to become integrated and whole people (Froebel, 1967a).

In his school, Froebel (1974) emphasized play, which started with simple activities and later progressed to more complex games. He felt that children should learn through play. He described ten gifts (playthings) that were given to the children by God to help them grow and

develop. He spent ten years refining his concept of kindergarten and in the end created 20 gifts or educational toys, songs and finger plays (Moore, 2002). The gifts given to the children allowed them to see diversity of appearance and structure through handling the gifts freely and without structure. Froebel (1967b) also wrote about the three principles of social imitation, learning through expression and systematized play that were incorporated into his kindergarten.

The Move from Germany to the United States

The kindergarten move to the United States began in 1848, when Germans were fleeing the country due to the revolution (Headley, 1965). Carl Schurz and his wife Margaretha Meyer Schurz immigrated to Watertown, Wisconsin. Mrs. Schurz had studied in Germany under Froebel and opened the first German kindergarten in 1855 in her home (Braun & Edwards, 1972; Headley, 1965; Shapiro, 1983). She put into practice the methods learned in Germany teaching her children and their cousins in German (Weber, 1969).

In a chance meeting with Margaretha Schruz, in 1859, Elizabeth Peabody became interested in this kindergarten education. In 1960, she opened the first English speaking kindergarten in Boston, Massachusetts. Mrs. Schruz gave her a pamphlet that contained a part of Froebel's *Education of Man* (Peabody, 1882). Peabody based the curriculum on the principles she read. After years of trying to accomplish this special type of education, she realized that the program and curriculum that she implemented was not based on Froebel's original idea. She went to Germany to study the Frobelian kindergarten in order to truly incorporate his ideas in the American kindergarten (Peabody, 1882).

In Germany, Elizabeth Peabody studied at the Kindergarten Seminary, which was run by Baroness von Marenholtz-Bulow who had worked with Froebel in his kindergarten and was one of Germany's top kindergarten trainers. She was President of the German Froebel Society and one of the leaders in the Hamburg Froebel Union (Peabody, 1882; Shapiro, 1983). When she met Peabody, she felt it was her duty to establish the Froebelian kindergarten in the United States. In 1868, Peabody brought Matilda Kriege, a protégé of Baroness Marenholtz to Boston (Peabody, 1882). This began the growth and movement of the kindergarten in the United States.

The Kindergarten Movement in the United States

Late 1800s

During the late 1800s and early 1900s, industrialization caused many mothers to join the workforce. There has been a shift away from maternal care at home to mothers choosing organizations to care for their children. Day nursery was focused on child rearing practices and took the place of mothers who could not care for their children and were deemed deficient in their motherly duties by the society. Professionals who advocated for the establishment of public school kindergartens felt that supervision should consist of not only childrearing but also citizenship and work habits (O'Connor, 1995).

As Elizabeth Peabody was trying to promote the kindergarten movement by corresponding with William T. Harris, Superintendent of the St. Louis public schools, Susan Blow approached Harris about teaching kindergarten (Ross, 1976; Weber, 1969). Blow studied in Europe under Maria Boelte who had learned kindergartening from Froebel's widow (Ross, 1976; Shapiro, 1983). Boelte came to the United States when Peabody asked her to come and help train new kindergarteners. Susan Blow became her first student in the United States (Peabody, 1882; Ross, 1976).

In 1873, the expansion of kindergarten began as the first kindergarten opened in St. Louis under the direction of Susan Blow and William T. Harris and based on Froebel's observations of mother child interactions (O'Connor, 1995). Blow insisted on following the rigid program

Froebel had created (O'Connor, 1995; Weber, 1969). The kindergarten was child-centered and kindergarteners were in charge of the spiritual, physical and moral development of the child (O'Connor, 1995; Ross, 1976; Shapiro, 1983).

Early 1900s

By the 1900s, the kindergarten movement had become very progressive. Free kindergartens were popular and kindergarten was looked at as a community center for the neighborhood (Ross, 1976; Shapiro, 1983). In 1903, the Committee of Fifteen was established to solve the debate existing over keeping the Froebelian principles of kindergarten or changing to scientific principles. The Committee was soon changed to the Committee of Nineteen because the Fifteen could not come up with a solution. Susan Blow continued to fight for Froebel's principles while a newcomer, Patty Smith Hill, felt that Froebelian rules were too rigid and new ideas and principles had to be implemented (Ross, 1976; Shapiro, 1983; Weber, 1969). Hill drew on Dewey's concepts and felt that a child's interests should correspond with significant educational experiences (Ross, 1976; Weber, 1969). She began to develop new songs, gifts and occupations for the new American kindergarten. Teachers lost their opportunity to show their concern for social development that was characteristic of the first kindergartens (Ross, 1976).

Teachers had to teach double sessions and could no longer interact with parents and families in the same way as before. By 1914 every major city in the United States had established public kindergartens (Ross, 1976). As the curriculum began to change, subject areas were introduced. Nature study, home and community life, literature, music and art were at the core, yet "each subject was determined by its ability to assist children in confirming and extending their daily life" (Weber, 1969, p. 96).

The 1920s gave way to new psychological theories as two groups of American educators began taking an interest in early childhood education. Patty Smith Hill tried to find a common ground between the two groups. The behaviorists, led by Thorndike and Watson, warned teachers against motherly love in the classroom (Shapiro, 1983; Weber, 1969). The emphasis should be based on learning objectives or habit formation. The opposing theory was that of Dewey and social education (Shapiro, 1983). While the debate between the two theories continued, education as social reform diminished and the behavioral emphasis on education began to dominate.

The child study movement gave rise to research in childhood education at universities, which led to the emergence of new child study centers (Shapiro, 1983). Measurement brought promise of efficiency for kindergarten. Since there were no immediate effects on the kindergarten, studies began to focus on teachers' efforts. Even though the first assessments were used for measuring the children's individual growth, the teachers began to have a greater concern for standardization and efficiency (Weber, 1969). The move to standardize the kindergarten curriculum focused on holiday and seasonal activities (Weber, 1969). At this time, the main objective of kindergarten was to help the child adjust to the new social environment of the school.

As kindergarten became integrated into the public schools, changes became evident (Ross, 1976). The unification between the kindergarten and first grade programs was seen in many schools as the first grade curriculum moved down and the kindergarten curriculum moved up. The age range of the kindergarten was also limited from 3-7 year olds to 4-5 year olds (Weber, 1969).

Mid 1900s

The launching of the Sputnik by the Russians in 1957 brought about complaints in the United States education system, including the preschool and kindergarten level. This began the acceleration of academic skills included in the kindergarten curriculum to prepare children for later academic success (Shapiro, 1983). People began to see devastating failure of the children of the uneducated and poor in school (Rudolph & Cohen, 1984). To close the gap between the students of high and low socioeconomic backgrounds, kindergartens were built in low socioeconomic areas (Weber, 1969). Educators also felt that a new rationale and methodology were needed in the kindergarten curriculum to close this gap. They felt that early education was the remedy for American poverty (Shapiro, 1983).

The 1960s also brought about the theories of Jean Piaget and Montessori. Maria Montessori had established method long before, but parents were turning back to her method of education which was very structured and much like the kindergarten Froebel first established (Shapiro, 1983). Piaget's theory of how children learn was considered in the kindergarten curriculum. Piaget saw activity on the part of the learner as essential. The learner needs to transform his or her own experiences in order to acquire meaningful concepts. Piaget also stressed the importance of intrinsic motivation and a competence drive that leads children to learn as well as the child's ability learn through trial and error (Mindess & Mindess, 1972).

At this time organizations which supported actions that would provide better educational opportunities for children under the age of six began to emerge (Headley, 1968). Parents, as well as organizations, began putting pressure for more academically rigorous kindergartens to emerge (Headley, 1968; Weber, 1969). Reading, arithmetic and writing became the focus that parents were pushing for. On the other hand some parents felt that curriculum should be concentrated on the nature of the children and less on the process of learning (Weber, 1969). These two views were called the "Hurry-Hurry-Hurry and Don't Push Me" theories of education (Headley, 1968).

Research conducted in the sixties led to results that confirmed kindergarten experiences correlate to academic success in later years (Mindess & Keliher, 1967; Mindess & Mindess, 1972). The kindergarten school day included reading, writing, speaking, listening, arithmetic, science, social studies, art, music and physical education (Headley, 1968; Mindess & Mindess, 1972). The subjects were not formal but integrated throughout the day in various activities. Continued push by the parents caused reading instruction to become more formal (Headley, 1968). The age requirement of kindergarten became an issue as reports pointed out that older students had more success in kindergarten than the younger students (Mindess & Keliher, 1967; Mindess & Mindess, 1972). Many districts required that students begin kindergarten at the age of five while others reported students starting as early as four years and three months (Mindess & Mindess, 1972). Class size became limited too as it was found to affect the quality of education (Headley, 1968). The average kindergarten class contained anywhere from 18 to 30 students and each kindergarten session lasted two and a half hours. (Mindess & Mindess, 1972).

Late 1900s

Education came back into the political sphere with the publication of *A Nation at Risk* (U.S. Department of Education, 1983). The report stated the nation was at risk of losing its intellectual capacity to the Japanese and urged to take education more seriously. The goal was to develop the talents of all students starting from early childhood through adulthood. The publication of *A Nation at Risk* caused society to put education first on the agenda of the federal government. Public support began to increase for compulsory and tax supported kindergarten in the public schools (Morrison, 1998). By the 1980s, enrollment of all five year olds had risen to

96%, and every state had public kindergartens, although only mandatory in twelve states and the District of Colombia (Morrison, 1998; Rudolph & Cohen, 1984). A movement to transform kindergarten into a traditional first grade class or push down the first grade curriculum into kindergarten began (Rudolph & Cohen, 1984). The kindergarten curriculum was being pulled in two directions: (a) total learning and growing and (b) a watered down version of first grade (Rudolph & Cohen, 1984). The latter became prevalent after *A Nation at Risk*.

School readiness became an issue with the publication of *Goals 2000: Educate America Act* (1994). The first goal stated all children would start school ready to learn, causing many states to raise the age of entrance into kindergarten (Morrison, 1998). Retention was seen in kindergarten as well as high-stakes testing. Parents began holding back their children, especially boys, for a year ensuring that their children would be the oldest in the class and therefore perform better academically (Morrison, 1998).

Conclusion

The future of the kindergarten curriculum is a full-day cognitive based program that includes more reading and writing (Marzollo, 1987). Technology will be present in the classroom and in the curriculum. Kindergarten will no longer be seen as a place to get ready for school but rather a place to learn and develop (Morrison, 1998). "The purpose of the new kindergarten is to teach children a rich, meaningful, and balanced curriculum of skills and information through age-appropriate activities that encourage children to want to learn more" (Marzollo, 1987, p. 1). It is important to note that children who may be academically ready to start school may not have the social skills needed to be successful. Froebel began the first kindergarten to allow children to socialize while at the same time learn concepts needed for school. Parents and politicians must revert back to this initial concept of the school primarily as a social institution.

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Shifting Our Gaze to the Strengths of Alternative Education Students

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Abstract: This study addresses the need for educators to understand what matters for alternative education students. Three male alternative education students were interviewed about their educational memories, realities and aspirations. Results revealed family influences prevailed over inhospitable socioeconomic factors in students' educational choices. Findings supported recommendations for alternative education teacher development.

The problem of this study is the need for contextually-grounded understanding among educators about what matters for alternative education (AE) students. This study is viewed through the lenses of (a) sociocultural diversity research, which views culture as dynamically and socially constructed (Orellana & Bowman, 2003); (b) strengths-based research, which empowers the participants to create social change (Kana'iaupuni, 2004); and (c) critical action research, which posits that improved understanding can be gained while changing the quality of life together in an existing situation. Critical action researchers (a) reject the positivist view that knowledge is based on a universal truth; (b) include the participants' (e.g., students, families) perspectives in educational decision making and interpretation of educational practices; and (c) link theory and practice (Kincheloe, 1991). To warrant the significance of this study, I will begin with a definition of terms followed by a brief overview of the history and literature of AE and juvenile justice education (JJE).

Definition of Terms

At-risk Student

The adolescent may be at risk of failing or dropping out of school if he or she exhibits high absenteeism, has been retained, performs poorly in class, has pre-violent disposition, is pregnant, lives in a low-income single-mother household, or arrives from another country (Fine, 1990).

Dropout

The term *dropout* is used to describe both the event of leaving school before graduating and the status of an individual who is not in school and who is not a graduate (National Center for Education Statistics [NCES], 2001).

Urban Schools

Urban schools are characterized by a diverse student body, unsuccessful student achievement, and low school effectiveness. The opportunity to learn is drastically reduced due to poor resource distribution and other systemic forces (Artiles, 1996). The urban schools are part of the mainstream system that uses the standard curriculum and graduation diploma.

Alternative Education

AE refers to the portion of the public school system that is "responsible for the design and implementation of educational alternatives for students who are unsuccessful in the traditional public school system" (Miami-Dade County Public Schools [M-DCPS], 2004).

Alternative Schools

AS are specialized AE programs outside of the mainstream public school system with (a) their own administration and personnel, (b) a voluntary option, and (c) community feedback

(Friedrich, 1997). AS are based on the philosophy that each student brings unique circumstances to the educational setting.

Brief Overview

Before the 1960s, our country had educational alternatives (e.g., private, parochial, and home). However, the social criticism and educational reform movement of the 1960s supplied the ideological momentum for public AS of choice, which were initially continuation, dropout, pregnancy, and evening schools. These remain the most common and ultimately serve students from low-income communities, who are disruptive and disinterested in school (Friedrich, 1997).

The failure of the public education system in the early 1970s led to widespread recommendations for AE to meet students' needs by providing (a) for the community needs, (b) more focused instructional programs, (c) a shared purpose and greater autonomy for its schools, and (d) smaller, more personalized schools. Additionally, the late 1980s offered support for AE within the framework of restructuring schools and school choice as a result of several national reports (Friedrich, 1997).

The U.S. Department of Justice, Office of Juvenile Justice and Delinquency (OJJDP), first promoted AE programs in the 1980s based on the argument that schools could play a significant role in curbing youth crime. AS could remove disruptive students from traditional public schools and provide them with a chance for success in a smaller, more supportive, and less structured environment. Theoretically, students who attend AS are believed to have better self-esteem, attendance, and performance, and feel less alienated toward school (Cox, 1999).

Since the 1980s, youth educational placement has become greatly varied among states in special legislation governing juvenile justice education, curriculum consistency, expenditures per pupil, teacher-student ratio, and percentage of students in special education (Wolford, 2000). In 1998, the Florida Department of Education (FDOE) addressed these inconsistencies by generating a research-driven system to develop the most promising practices in juvenile justice education in the state. The Juvenile Justice Educational Enhancement Program (JJEEP) is currently responsible for conducting research that identifies, validates, and implements best practices in Florida's juvenile facilities for the successful transition of juveniles into communities, schools, and work (Blomberg & Waldo, 2001).

Review of the Literature

General and special education literature agree that AS must live up to their name by eliminating the mindset that obscures social issues and doing something new and exciting for those who are unsuccessful in traditional settings. Confirming the importance of social factors will strengthen community-school relations and our society in the long run (e.g., Groves, 1998; Tobin & Sprague, 2001). Offering AE teacher development will improve the quality of teacher-student relationships in AS. Moreover, the involvement of caregivers is critical to the stability of AE programs' effects, but is often overlooked (e.g., King, Silvery, Holliday, & Johnston, 1998). Robust studies on the effectiveness of AE programs are minimal and report mixed results on the conditions necessary for successful AS (e.g., Guerin & Denti, 1999). Future research should address the promising, yet not fully-established effectiveness of AE programs in diverse cultural settings and in educating the less resilient AE students (Gold, 1995).

Since most delinquents 16 and over drop out and do not successfully return to school after release from a correctional facility, the literature strongly suggests developing nontraditional ways for motivating students to return to school through strategies for rehabilitation rather than discipline (e.g., Office of Juvenile Justice and Delinquency Prevention [OJJDP], 1994). The thrust is to replace the negative with prosocial peer contexts, actively

include the parent, and promote collaboration among those who work with at-risk youth in juvenile justice, education, mental health, and social work. Quality education and educators are considered a determining factor in reducing recidivism (i.e., repeated incarceration), since juveniles in correctional facilities exhibit poor academic achievement, especially in reading. The old paradigm that basic skills must be learned before more demanding tasks are given is debunked and replaced by a new paradigm based on the assumption that all (e.g., educationally disadvantaged) students can succeed and will profit from more challenging tasks. Promising practices include ongoing professional development for teachers involved with students in the juvenile justice system. Instructional approaches for effective rehabilitation are described as nontraditional, motivational, and immediately responsive to the students. Correctional rehabilitation and education research has shown inconclusive results for 25 years but concludes that more scientifically-designed, robust evaluations of effective educational programs and practices are required for legislative funding and policy changes to be made. With more than 200 JJE programs in Florida alone, the ability to recognize, build consensus on, and disseminate unambiguous research-validated curricula, teaching strategies, and methodologies for the juvenile corrections field is critical (Blomberg & Waldo, 2001; Wolford, 2000).

Significance

A significance of this study lies in the future of our country and whether we are willing to continue to imprison 2,085,620 prisoners a year of which (a) 3,405 per 100,000 were Black males in 2003; (b) 41% had not completed high school; and (c) between 1991 and 1997, there was a 44% increase in individuals who entered State prisons without a high school diploma (Office of Justice Programs, 2003).

Educators must understand how to make school an exciting, meaningful place for AE students who are disproportionately dropouts and recidivists. NCES (2001) reports the most common reasons given for the lack of educational success are failing, dislike for school, conflicts with teachers, or suspension and expulsion. Having to become self-sufficient at an early age, homelessness, learning disabilities, drug and alcohol abuse, illiteracy, teenage pregnancy, and mental illness are closely related to dropping out. This research shows preparing teachers to understand the ramifications of AE students' place-bound educational realities is critical (Kincheloe & Pinar, 1991).

Even though progress was made during the 1970s and 1980s in reducing the number of high school dropouts, the rates were stagnant for 10 years. From 1990 to 2001, 347,000 and 544,000 students dropped out of high school each year, and they were six times more likely to be the students living in low-income families (i.e., lowest 20% of all family incomes). In 2001, 3.8 million (10.7%) of the 35.2 million 16- to 24-year-olds were not enrolled in a high school program (NCES, 2001). The research literature (e.g., Gold, 1995; OJJDP, 1994) recommends changes for more successful AS, but the statistics reveal that everyday reality remains the same for the AE students. Therefore, alternative solutions may question fixed social categories (e.g., at-risk, learning disabled) and gaze on the insights and strengths of the AE students rather than focusing on their differences as static deficits (Kana'iaupuni, 2004; Orellana & Bowman, 2003).

Research Questions

The study's design evolved from two questions: (a) How can the educational memories of AE students enlighten educators to the social factors that affect the students' educational choices? and (b) How can the present realities and future aspirations of AE students inform educators toward the development of more quality teacher-student and community-school relationships?

Method

This research study is informed by a process-focused (i.e., critically interrogates standard social categories) qualitative research viewpoint (Orellana & Bowman, 2003). Qualitative researchers ground (i.e., develop) theory by analyzing data to discover themes (Gall, Gall, & Borg, 2003). The autobiographical nature of the interview used in this study justifies the narrative style of delivery in the method and results sections (hooks, 1994). The autobiographical method is one in which the constructions of ourselves are linked with the constructions of others as a prerequisite for knowing (Kincheloe & Pinar, 1991). The ongoing construction of the personal congruence (i.e., beliefs necessitate actions) of the teacher-as-researcher is linked with the constructions of the student for greater understanding of the educational strengths of AE students (Chubbuck, 2004).

The sample for this study was three 10th grade male students from an AS in a large multicultural public school district, purposively chosen for homogeneity (i.e., typical AE male students). Chan was a 17-year-old, African-American/Latino. He was in the AS as a last resort, having been expelled from several schools. The other two participants were African Americans from a poor community. Shayn had been ordered to the AS by the judge as an aftercare student. Aftercare students attempt a return to society after a period of incarceration and school is part of their adjudication requirements. Kurf was also at the AS as a last resort, having been in trouble before his aunt heard about it and suggested that he try it.

I was the teacher-as-researcher for this study, a White, upper-middle class, female from the South. I had taught at TROY for nine years and had developed an understanding that (a) one's beliefs and knowledge necessitate one's actions in the classroom; (b) theory and practice coexist; and (c) community-oriented classroom milieus increase living excitement for learning and quality teacher-student relationships (e.g., Freire, 1998).

Consent forms were signed prior to the data collection, which included open-ended, semistructured interviews. I conducted the interviews as a native participant observer and videotaped them for greater reliability in transcription. I used a constant comparative method (i.e., a process of categorizing a designated unit of analysis, such as the sentence or paragraph) of qualitative data analysis to investigate commonalities in the interviewees' responses (Bogdan & Biklen, 2003; Gall, Gall, & Borg, 2003). Results could be transferred to similar contexts since the participants are typical of male AEOP students (Johnson, 1999).

Results and Discussion

A consistent theme emerged from the data: influences from a family member to continue school prevailed over the abundance of inhospitable socioeconomic factors and unsuccessful educational opportunities in the students' lives. Chan said, "I can do what my brother did….He got a diploma (Pane, 2004, Appendix E, p. 2)." Shayn observed, "My dad taught me life is precious and education is key to everything and … my mom knew I was very smart and that I had common sense to find a school that could help with my educational benefits" (Pane, 2004, Appendix E, p. 7). He also said, "I just want to go to the University of Miami and then I want to go to a college up in Chicago where my cousin is because me and my cousin used to talk about education everyday.…And he got a diploma and I was there" (Pane, 2004, Appendix E, p. 9). Kurf singled out the success of a cousin as a positive influence: "…My cousin go out to this school and it helped him a lot so I was like, yeah, that's him….he going do what I do….So it's like that. So that's how I got out here" (Pane, 2004, Appendix E, p. 12). Kurf, who had skipped school for a year remarked, "My auntie … real serious about education ….I tell my auntie I wasn't coming to summer school….She told me to come. I ain't feel like arguing or nuthin' so I

told her to come get me and bring me out here. She's a pharmacist" (Pane, 2004, Appendix E, p. 14). These stories support research that in the "expert-driven, top-down approach assumed by deficit models" (Orellana & Bowman, 2003, p. 26), AE family members have been excluded from the decision making and collaboration in their child's education. They are generally included in the conversation only when dealing with punitive measures.

From the students' perspectives, if we as educators validated the influence of family members in AE students' educational choices, improved teacher-student and community-school relations would inevitably result and work toward the betterment of our society in the long run. The results support recommendations in the literature: for the future stability of AE programs, pre-and in-service teacher education with the alternative educator in mind is needed and should actively involve students' caregivers. The overrepresentation of a recidivist population of Black students in the AS allows high achievers to justify a stereotypical image of the unsuccessful student. However, the results suggest that educators should become aware of the inhospitable socioeconomic factors that affect AE students' lives outside of school settings: lack of social and economic choices does not justify exclusion of family members' influence in educational choices.

Conclusions

Alternative perspectives from what AE students say, do, and desire in their educational realities and aspirations can diminish the dissonance between (a) student-teacher relationships, (b) teacher beliefs and quality classroom practices for AE student success, and (c) community and school educational goals. The findings in this study could be validated through collaboration and dissemination of future research to determine more effective responses to the educational strengths of the AE student. This could be done through extensive interviews with young people from a wide variety of backgrounds to explore specific experiences that helped them remain and succeed in school, despite the obstacles. One of the participants in this study said, "I just want to be the best I can be…live a successful life because I've been through good…and bad past experiences…I'm not a perfect person…I just gotta learn from my mistakes and not make them again" (Pane, 2004, Appendix E, p. 11). The answer is not quite that simple. We must dialogue with others for our words and thoughts to come together and transform us (Vygotsky, 1986). We cannot change if we are alone, but can in a community. Future research must continue to involve the memory of others for the sake of ourselves, our students,' and their families' place in the world (Kincheloe & Pinar, 1991).

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A Study of Teacher Efficacy of Special Education Teachers of English Language Learners with Disabilities

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Abstract: This research examined the perceived teacher efficacy of special education teachers of English Language Learners with disabilities. The results demonstrate the positive correlation between proficiency in the language of the target students and teacher efficacy. An analysis of responses yielded two major themes, organizational and teacher issues, affecting teacher performance.

Teacher efficacy is the teacher's belief in his or her capability to organize and execute courses of action to successfully accomplish specific instructional tasks or, more simply, his or her capacity to affect student performance (Bandura, 1995). Teachers with a high sense of efficacy have a strong conviction that they can influence student learning, even the learning of those students who may be more challenging (Guskey & Passaro, 1994). These teachers are open to new ideas and are more willing to experiment with and try new teaching strategies to better meet their students' needs (Ghaith & Yaghi, 1997; Guskey, 1988). Overall, efficacious teachers tend to engage in more productive, quality teacher behaviors (Ashton & Webb, 1986; Gibson & Dembo, 1984). In contrast, teachers with low efficacy feel they only have minimal influence on student achievement. These teachers give up more easily when confronted with a difficult situation, are less resourceful, and oftentimes feel that students cannot learn because of the extenuating circumstances (Ashton & Webb, 1986; Bandura, 1997). Due to the selection of more effective and positive teaching behaviors, efficacious teachers tend to have high student achievement, whereas teachers with low efficacy tend to have low student achievement.

The purpose of this study was to examine the efficacy beliefs of special education teachers working with English Language Learners (ELLs) with disabilities who are at risk of academic failure. Contributing to their at risk status are their cognitive, emotional and/or physical disabilities and their limited proficiency in English. In addition, many of these students come from low socioeconomic families (Smith, 2001) adding another dimension of risk of academic failure. Baca and Cervantes (2004) refer to students who have a disability, a non-English language background, and low socioeconomic status, as having "three strikes against them" (p. 2). The presence of all three risk factors exponentially increases the probability of failure. Therefore, the theory of teacher efficacy is particularly relevant because of the special needs of ELLs with disabilities and the demands placed on their teachers to help these students achieve academic success.

Theoretical Framework

The construct of teacher efficacy has evolved from Bandura's (1977, 1997) work in the general area of self-efficacy. The theory posits that the perceptions of one's ability affect one's thoughts, feelings, motivation, and actions. Bandura (1995) identified four primary sources of efficacy development: mastery experiences, vicarious experiences, physiological and emotional states, and social persuasion. Of these four sources of efficacy development, mastery experiences

are the most influential (Bandura, 1997). Bandura (1997) suggested that once efficacy beliefs are formed, they are very difficult to change. Therefore, it is easier to affect change when teachers are in formative process in teacher preparation programs rather than when they are in the classroom. This is particularly important because of the implications for both preprofessional teacher education programs and teacher development programs.

Studies examining teacher efficacy in the field of special education have found that teachers with higher efficacy make fewer referrals to special education (Meijer & Foster, 1988; Podell & Soodak, 1993; Soodak & Podell, 1993), feel more responsible for student learning (Soodak & Podell, 1994), report more success with students with learning and behavioral problems (Brownell & Pajares, 1996, 1999), and are more receptive to inclusion of students with disabilities in the mainstream classrooms (Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Freytag, 2001; Soodak, Podell, & Lehman, 1998).

Two studies (Kwiat, 1989; Tasan, 2001) address teacher efficacy of teachers of ELLs. In both studies, differences were noted after the participants engaged in professional development activities. These studies suggest that teacher preparation and professional development affect teacher efficacy.

Despite the increasing numbers of ELLs with disabilities receiving special education services (Heubert, 2002), only one study included an examination of efficacy beliefs of special educators with respect to these students (Carlson, Brauen, Klein, Schrool, & Willig, 2002). In that study, special educators had high perceptions of their efficacy overall. One area where they did report feeling less efficacious was in accommodating the needs of culturally and linguistically diverse students with disabilities. This finding points to the need for research in the area of teacher efficacy of special education teachers of ELLs with disabilities.

This present study examined the special education teachers' perceptions of efficacy when teaching students who are ELLs with disabilities. In addition, the study sought to obtain information about the views of the teachers regarding effective practices when working with the target students. The research questions posed were:

1. Is there a correlation between teacher variables and teacher efficacy for special education teachers of ELLs with disabilities?
2. Which of the independent teacher variables are the best predictors of perception of teacher efficacy for special education teacher working with ELLs with disabilities?
3. What are special education teachers' views on what is most helpful for themselves, as well as preservice and inservice teachers, when working with ELLs with disabilities?

Teacher variables examined included: highest degree earned, degree in an area of special education, certification in special education, teaching experience, status of English for Speakers of Other Languages (ESOL) endorsement, proficiency in the language of the students, and Title I status of the school as an indicator of the socioeconomic level of the school population. Data on participants' views added to the understanding of teacher efficacy for this population.

Method

A survey approach was implemented utilizing an instrument specifically designed for the study in accordance with Bandura's (2001) *Guide for Constructing Self-efficacy Scales*. The *Exceptional Children who are English Learners* (EXCEL) Teacher Inventory was comprised of three sections. The 20 items in Section I measured teacher efficacy in working with ELLs with disabilities. Participants were asked to rate themselves using a 9-point Likert scale on their perceptions of their abilities in areas of specific teacher competencies that affect student performance. Teacher competencies were identified following the guidelines established by the

national organizations in the areas of TESOL/bilingual education (National Association for Bilingual Education, 1992; TESOL, 2001) and special education (Council for Exceptional Children, 2003). Section II had three open-ended questions related to what participants thought had helped preservice and inservice teachers as well as themselves the most in working with the target students. Section III had items on teacher demographic variables including types of preparation, experience, and proficiency in the language of the ELLs.

Since the EXCEL Teacher Inventory was developed specifically for the study, reliability and validity were established. The coefficient alpha was calculated at .9419 indicating highly satisfactory internal reliability. Content validity was established by creating a table of specification using the teacher competency areas identified through the review of the literature. Furthermore, face validity was established by a review panel of three experts, Dr. Leonard Baca, BUENO Center for Multicultural Education, University of Colorado; Ms. Rosalia Gallo, Miami-Dade County Public Schools, Bilingual/ESOL ESE Programs; and Dr. Diane Rodriguez, ESE/TESOL Programs, Barry University, and a group of 20 special education teachers. Their recommendations assisted in making revisions and corrections which contributed to the clarity and appropriateness of the instrument. Two hundred two teachers at 31 elementary school sites located in a large urban school district participated in the study. The return rate was 58.5%.

Correlations and *t*-tests were calculated between total teacher efficacy scores and each of the teacher demographic variables. Descriptive statistics, including frequency distributions and measures of central tendency, provided a description of the participants and the pattern of their responses to the total teacher efficacy score. In addition, a multiple regression was used to analyze which of the teacher variables were the best predictors of teacher efficacy. The predictor variables were Title I status of school, highest degree earned, teaching certification, teaching experience, status of ESOL endorsement, and proficiency in languages other than English.

Responses to the open-ended questions regarding special education teachers' preparation and professional development, experiences, and recommendations for teacher preparation were coded and analyzed for response patterns following qualitative data analysis procedures (Bogdan & Biklen, 1998; Glesne, 1999). Initially, a list of the responses for each question was compiled; these were coded and categorized according to common words, phrases, and ideas for each question as well as across the set of responses for the three questions.

Results

The analysis of the demographic data on the participants revealed that the majority of the participants (72.8%) worked at Title I schools, held degrees in special education (84.7%), held graduate degrees ((60.2%), were certified in an area of special education ((92.1%), and were ESOL endorsed (70.3%). In addition, most of the participants (66.3%) reported to be proficient in the language of the target students. The language most frequently reported by the participants was Spanish; the majority of the participants had less than 7.5 years of teaching experience.

Overall, participant teacher efficacy scores were high. For the 20 individual teacher efficacy items, most of the individual scores ranged from 3 to 9 on the 9-point Likert scale. The mean scores for these items ranged from 6.44 to 8.16. Correlations between teacher variables and teacher efficacy scores revealed that proficiency in the language of the target students was the statistically significant variable ($p = .002$). No statistically significant differences in teacher efficacy scores were found for (a) variables related to teacher preparation, (b) number of years of teaching experience, or (c) Title I status of the schools where the teachers worked. The multiple regression equation found that proficiency in the language of the target students was statistically significant in predicting teacher efficacy ($p = .001$).

Qualitative analysis of the responses to the opened questions yielded two major thematic categories: organizational issues and teacher issues affecting teacher performance. The majority of the responses to the open-ended questions were regarding teacher issues. Organizational issues included responses in the areas of support from others, availability of resources, class size, time constraints, and funding. Support from others and availability of resources were most frequently reported by participants for themselves, inservice teachers, and preservice teachers. Teacher issues included teacher disposition, teacher preparation, teaching experience, teaching skills, and language skills. Responses about teacher preparation were most frequently reported for the participants themselves, as well as for preservice and inservice teachers. For preservice teachers, field based learning experiences were frequently recommended and for inservice teachers professional development activities were recommended. Differences in responses were noted among participants who reported to be proficient in the language of the target students and those who reported that they were not proficient. Language proficient participants reported that fluency in the language of the target students was most helpful when working these students, although it was not recommended for preservice and inservice teachers.

Conclusion

The teacher variable that was the predictor of teacher efficacy and the one that was statistically significantly correlated to teacher efficacy was proficiency in the language of the target students. The responses to the open-ended questions revealed participants' perceptions of organizational and teacher issues that affect teaching ELLs with disabilities.

The results of the present study have implications for the practice of special education teachers working with ELLs with disabilities. The most noteworthy result regarding the language proficiency of the special education teachers suggests that teachers of the target students should have skills in the languages of their students or support from others who are language proficient. Special education teacher education programs should consider expanding their programs to include bilingual special education since there are fewer than 15 such programs in the United States (National Clearinghouse for Professions in Special Education, 2000).

Implications for preservice teacher education programs include the development of skills in languages other than English, as well as a firm understanding of the target students' language and culture to evaluate and teach successfully. Preservice teachers should also develop skills necessary to establish communication between parents and others in the learning community. In particular, instruction on strategies for working effectively with parents who speak a language other English should be incorporated into teacher education programs. Opportunities for field-based experiences are suggested with university professors and supervising teachers in the field who can assist in maximizing the field-based learning experiences for the preservice teachers.

For inservice teachers, implications of the results suggest that special education teachers would benefit from an infrastructure that promotes support from others and collaboration with other professionals. Suggestions from the participants for inservice training include professional development activities in the areas of cultural diversity, testing and evaluation, language development and second language acquisition, and family involvement.

In the field of teacher efficacy, limited studies have focused on special populations, i.e., students with disabilities as well as those who speak English as a second language. Further research in this area is recommended since research in the area of teacher efficacy has consistently yielded a strong relationship to student outcomes (Armor et al., 1976; Ashton & Webb, 1986; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Gibson & Dembo, 1984; Tschannen-Moran & Hoy, 2001). Teacher efficacy affects teachers' thoughts, their actions in the

teaching process, the effort they put forth, and their perseverance in improving student achievement (Bandura, 1997). For this reason, it is important to study the efficacy of teacher, particularly those who work with challenging students who are most in need of the best teachers. This study has contributed to the body of literature on teacher efficacy which was scarce with regard to teachers of students with disabilities as well as students from non English language backgrounds.

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Central Vestibulopathy in a Female Collegiate Basketball Player: A Case Study

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Abstract: We present a unique case of a collegiate athlete who suffered from a mild head injury following a multi-car motor vehicle accident and was later diagnosed with central vestibulopathy.

A concussion is a mild head injury that involves a physiological disruption of brain function with at least one of four characteristics: (a) any period of loss of consciousness; (b) any retrograde or anterograde amnesia; (c) any immediate alteration of mental status; and (d) any neurological deficits (Kay et al., 1993). A history of brief unconsciousness is considered an indication for hospitalization because of the risk of delayed complications, such as a hematoma which is a collection of blood around the brain (Jennett, 1976). Approximately 90% of new head injury cases each year are diagnosed as a concussion (Gottshall, Drake, Gray, McDonald, & Hoffer, 2003).

While many concussions are diagnosed each year, certified athletic trainers and team physicians often have difficulty detecting and classifying concussions because of the varying signs and symptoms (Kelly & Torg, 1995). The most common signs and symptoms of concussion are headaches, dizziness, fatigue, irritability, anxiety, insomnia, loss of concentration and memory, and noise sensitivity (Dikmen, McLean, & Temkin, 1986; Edna, 1987; Edna & Cappelen, 1987; Minderhoud, Boelens, Huizenga, & Saan, 1980). Evaluation of concussion is difficult with a multitude of signs and symptoms that are often misleading or not reported.

The National Collegiate Athletic Association Injury Surveillance System describes a concussion based on a grading scale with three grades. A Grade I concussion is depicted by no loss of consciousness and a short amount of posttraumatic amnesia. An athlete with a Grade II concussion would likely suffer from loss of consciousness for less than 5 min and amnesia can last up to 30 min. A Grade III is a severe concussion and constitutes loss of consciousness for more than 5 min and extended amnesia beyond 30 min (Cantu, 1986). Neurons or brain cells can become damaged during a concussion. A neuron consists of a nerve cell body, Nissl bodies, nucleus, neuroglial cells, axon, dendrites, myelin sheath, and axon terminal. Following a concussion trauma causes twisting and tearing of the neuronal axon and ultimately leads to death of the cell. Figure 1 illustrates the trauma that occurs to neurons as a result of a concussion. Although the symptoms of a concussion may persist for a prolonged period of time especially when dealing with a severe concussion; evidence supports that some post-concussive symptoms may demonstrate an alternate diagnoses such as vestibular deficits (Gottshall et al., 2003). We intend to present a unique case of a female collegiate basketball player suffering from post-concussive syndrome which resulted in central vestibulopathy.

Background and Injury History

Concussion incident. A 19-year old (height = 177.8 cm, body mass = 75.0 kg) National Collegiate Athletics Association Division I female basketball player sustained a mild traumatic brain injury following a multi-car motor vehicle accident during winter break of her freshman year. The athlete reported being a passenger in the multi-car accident, hitting her head on the visor, and immediately losing consciousness up to 1 min. The Emergency Medical Technicians

(EMTs) arrived on the scene and the athlete refused emergency transportation to the hospital, but was briefly evaluated. During the examination the athlete described feeling "off balance" and "wobbly," confused, and fatigued. The EMTs assessed the primary complaint as a Grade II concussion. The following day, the athlete boarded an airplane to return to the University and experienced an increase in headaches, light-headedness, and dizziness as a result of air travel. One day following the accident, the athlete reported to the University sports medicine facility where the Certified Athletic Trainer evaluated the condition as a Grade II concussion secondary to mild head trauma and immediately referred her to a local hospital for further evaluation.

The team physician at the local hospital diagnosed the athlete with a Grade II concussion, in agreement with the assessment of the EMTs and the Certified Athletic Trainer. A computer tomography (CT) scan revealed no significant brain trauma. Because headaches and reports of imbalance had not subsided by the time of the evaluation, the physician restricted the athlete from basketball practice and prescribed a series of medications to control her pain and dizziness: Tylenol #3 (acetaminophen and codeine), Medrol (methylprednisolone), Bextra (valdecoxib), and a combination of Cipro (ciprofloxacin) and Mucinex (guaifenesin).

Follow-up evaluations. The athlete reported daily to the sports medicine facility where she was evaluated by the sports medicine team. As her headaches became less severe, she began stationary cycling to maintain her cardiovascular fitness. The athlete progressed to participation in light shooting drill practices. On days when the headaches subsided, the athlete was allowed to participate in passing drills, but the headaches returned and she was again restricted from activity. One month following the initial injury, the headaches and imbalance had not subsided and the athlete was referred to the team physician for additional diagnostic tests (another CT scan and one magnetic resonance imaging scan). The results of the diagnostic testing were unremarkable and did not explain the continued symptoms. Another month passed and the team physician was concerned about the post-concussion syndrome symptoms and the athlete was referred to a Registered Physical Therapist with a national certification in vestibular pathologies.

Methods

The subject of this case report was selected to document an unusual condition encountered by the primary investigator during the clinical education component of her athletic training education program. The subject presented to the primary investigator within a day of the initial motor vehicle accident and the subject was followed throughout her course of injury management to successful return to full activity. A signed release of medical information was obtained in compliance with Florida International University's Internal Review Board policies. The research design was descriptive research that retrospectively explored medical records including injury reports, head injury questionnaires, medical referral forms, diagnostic reports, evaluation summaries, and progress reports from the university athletic training room. Diagnostic reports including two CT scans and one magnetic resonance image were also collected. Compilations of data from the vestibular specialist included Sensory Organization Test (SOT), a Head Shake SOT in the yaw (vertical axis) and pitch (interaural axis) plane, a Motor Control Test, a Stationary March Test, a bilateral Head-Thrust Test, and a Headshake Test in the yaw and pitch plane. Data were synthesized, interpreted, and presented to contribute to the clinical knowledge base of this unique condition.

Results

Central Vestibulopathy Diagnosis

During the evaluation conducted by the vestibular specialist the athlete reported tinnitus, aural fullness, and pressure in the ears and head (Specialists Notes, 2004). The vestibular

specialist performed a series of tests on the athlete during her first visit. The tests included (a) a SOT revealing a multisensory dysfunction pattern likely originating from the central nervous system (see Figures 2 and 3); (b) a Head Shake SOT in the yaw and pitch plane (Demer, Goldberg, & Porter, 1991) resulting in several falls; (c) a Motor Control Test was within normal limits; and (d) a Stationary March Test with abnormal findings; (e) a bilateral Head-thrust Test, which was positive; and (f) a Headshake Test in the yaw and pitch plane resulting in down-beating nystagmus supports. The final diagnosis vestibular specialist's final diagnosis was a poorly compensating central vestibulopathy with persistent headaches associated with a retinal slip secondary to a weakness in the vestibule-ocular reflex (Specialists Notes, 2004).

Rehabilitation Program

The vestibular specialist provided exercises to challenge the vestibule-ocular reflex such as standing on a foam pad with feet together, while holding a business card, with one hand, straight out in front of her. The athlete was instructed to focus on one word on the business card and shake her head left to right for a count of ten, while maintaining her focus on the word and staying balanced. The athlete was then instructed to shake her head up and down for a count of ten, while again maintaining her focus on the word and staying balanced. The athlete was prescribed this regimen of exercises two to three times a day with the certified athletic trainer and returned in three weeks for re-evaluation and follow-up. (Specialists Notes, 2004)

Two months later the athlete returned to the vestibular specialist and reported compliance with her home exercise program. The athlete also reported a significant reduction in the intensity and frequency of her headaches and her balance during her course of treatment with the home exercise program. The SOT, Head Shake SOT in the yaw and pitch plane, Motor Control Test, Stationary March Test, Headshake Test in the yaw plane, and bilateral Head-thrust Test were repeated and were all within normal limits. The athlete did continue to demonstrate some deficits with the Headshake Test in the pitch plane, but was improving (Specialists Notes, 2004).

Discussion

The athlete sustained a concussion, ultimately leading to poorly compensated central vestibulopathy (Specialists Notes, 2004). Vestibular disorders are a potentially significant disability often associated with post-concussion syndrome (Gottshall et al., 2003). Vestibulopathy is any abnormality of the vestibular apparatus, which is the receptor organ of the vestibular portion of the eighth cranial nerve that is concerned with balance and equilibrium (Venes, 2004). A slowly developing vestibulopathy can be relatively silent because the function of the vestibular system overlaps other sensory systems (Baloh, Jacobson, & Honrubia, 1989). The athlete's persistent headaches were associated with a retinal slip secondary to a weakness in the vestibule-ocular reflex. The vestibular-ocular reflex is the only stabilizer for the retina during externally imposed, sudden, head accelerations (Demer, Crane, Tian, & Wiest, 1996). Sudden acceleration and deceleration of the head, especially following a motor vehicle accident, can cause significant retinal slip and may overcome the protective vestibulo-ocular reflex (Herdman, Schubert, & Tusa, 2001). Loss of the vestibular-ocular reflex leads to complaints of imbalance and visual distortion (Baloh et al., 1989). Therefore, mild head trauma resulting in impairment of the vestibular-ocular reflex may present the aforementioned deficits over a prolonged period of time.

In our case, four months of vestibular exercises resulted in complete elimination of the post-concussive symptoms of imbalance. However, the athlete continues to suffer from post concussion syndrome with headaches on occasion although she has been cleared for full participation and rarely abstains from practices or games. Her current course of treatment

includes overall body strengthening and conditioning as well as prescriptions for Tylenol #3 for minor headaches and Bextra for her more severe headaches. In the general American population, 5% sustain some type of head injury annually. Following head trauma, vestibular dysfunctions may represent one of the largest groups of delayed complications. Patients, who have experienced a head injury, exhibit vertigo and dizziness between 20-58% of cases (Rubin, Woolley, Dailey, & Goebel, 1995). Vestibular injuries, disturbances, or disorders are a significant disability after head injury or trauma (Gagnon, Friedman, Swaine, & Forget, 2001; Gottshall et al., 2003; Hoffer, Gottshall, Moore, Balough, & Wester, 2004; Kisilevski et al., 2001; Mallinson, & Longridge, 1998; Rubin et al., 1995; Tuohimaa, 1978). However; this significance is rarely reported in the literature among athletes. Vestibulopathies are not part of entry-level athletic training competencies and proficiencies; therefore, it is important to recognize the limitations within the athletic trainers' scope of practice and refer these athletes to the appropriate medical professionals/specialists for additional testing and treatment. Treatment can improve the rate of recovery significantly (Hoffer et al., 2004). In this case it was the use of a vestibular specialist that helped the athlete's recovery and successful return to competition. It is also vital to implement the appropriate course of pharmacological medication and treatments for successful return to athletic competition.

Clinical Implications

We presented this case to demonstrate an association between concussions and central vestibulopathy. Certified athletic trainers often evaluate concussions based on reports of mild head injury, headaches, tinnitus, dizziness, and nausea. A concussion is a complex pathology integrating several aspects of the central nervous system requiring knowledge of neuroanatomy and pathophysiology. To provide the best care for athletic individuals, certified athletic trainers must be aware of non-athletic injuries and pharmacology as well as their impact on performance.

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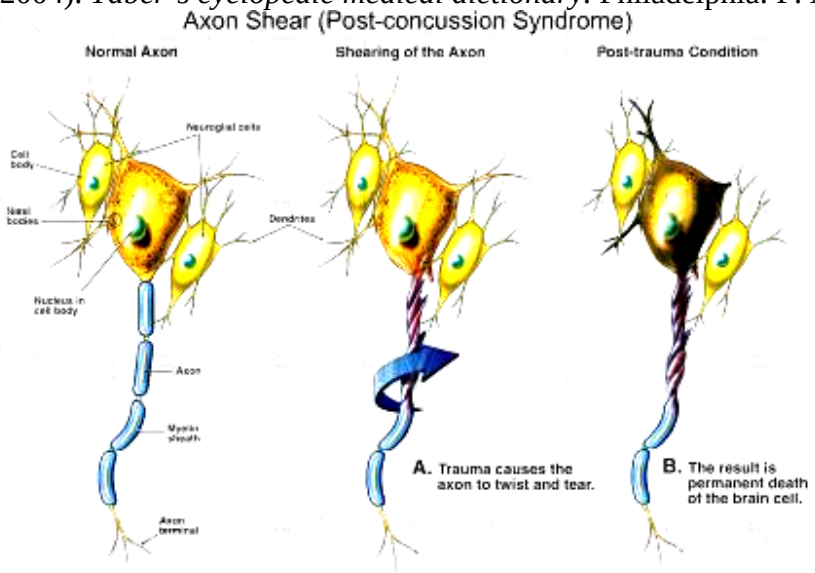
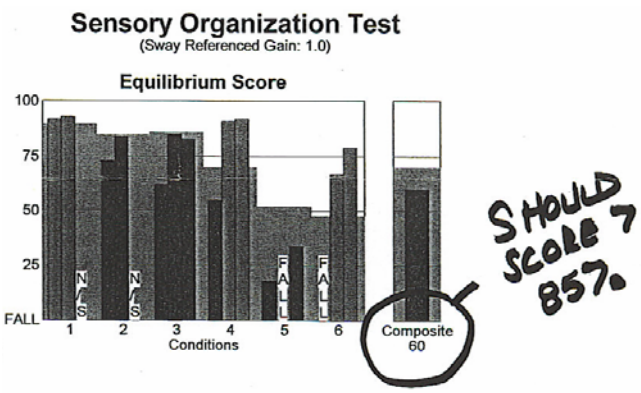


Figure 1. Axon Shear (Post-concussion Syndrome) with neurons (brain cells) subject to axonal shearing or post-concussion syndrome. Normal neuron with the nerve cell body, Nissl bodies, nucleus, neuroglial cells, axon, dendrites, myelin sheath, and axon terminal. *Figure 1A.* Trauma causes twisting and tearing of the neuronal axon. *Figure 1B.* Post-trauma condition with death of the brain cell. From Nucleus Medical Art, Inc. (2004). Retrieved December 8, 2004, from http://hon.nucleusinc.com/generateexhibit.php?ID=1870.

Two Months Following Injury



Four Months Following Injury

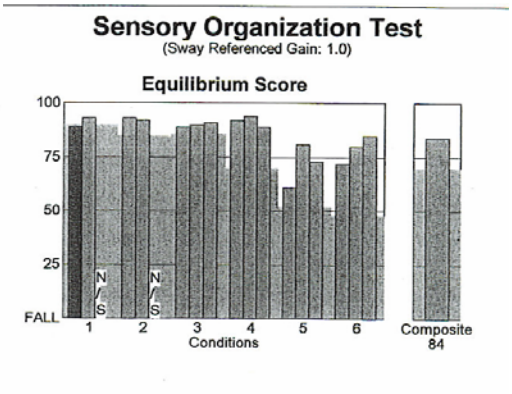
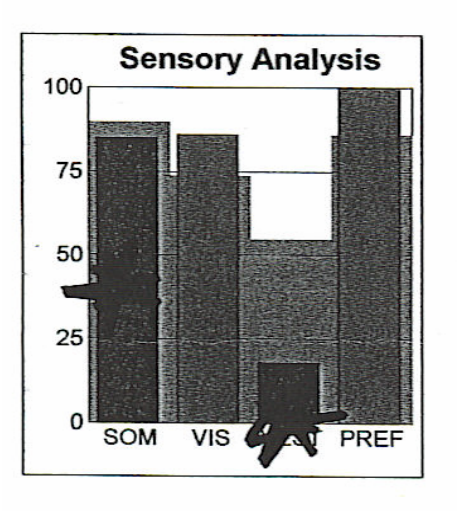


Figure 2. Sensory Organization Test. Results of sensory organization testing at two months and at four months following motor-vehicle accident. Composite score was 60 at two months and 84 at four months (normal value = 85).

Two Months Following Injury



Four Months Following Injury

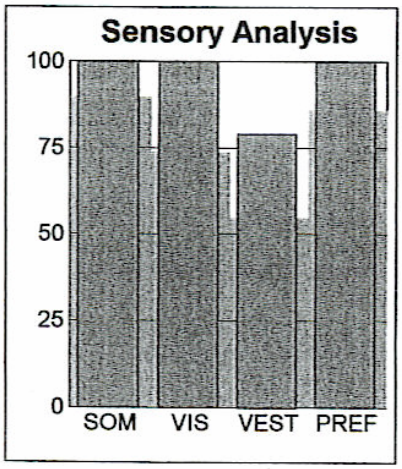


Figure 3. Sensory Analysis. The sensory analysis indicated a vestibular (VEST) deficit at two months following injury, which dissipated at four months following injury.

An Examination of Qualitative Empirical Studies at the AHRD from 1999-2003: Method, Rationale for Method, Data Collection, Sampling Strategies, and Integrity Measures

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Abstract: The paper examines the nature of qualitative empirical studies published in the AHRD proceedings from 1999-2003 and discusses findings on method, rationale for method, data collection, sampling strategies, and integrity measures.

Donovan and Marsick (2000) documented three trends in human resource development (HRD) research: (a) HRD has made strong inroads as an area of professional practice, (b) the field continues to use qualitative and quantitative tools relatively equally, and (c) the number of articles published in the field increased by 50% from 1997 to 1998. The second point that qualitative and quantitative tools are used relatively equally is contradictory to personal experience (Rocco, 2003). Perceptions within the field of HRD appear to be that (a) qualitative research is not published because qualitative methods are not honored by the editors, reviewers, or the field and (b) qualitative research lacks rigor and is therefore not of publishable quality. To address this contradiction, we conducted this study to examine the nature of qualitative empirical studies in the field of HRD over the past five years by searching Academy of Human Resource Development proceedings from 1999-2003.

Summary of Research on Research

As a field that has grown over the past 20 years, research on research becomes more important as a gauge of our future (Williams, Bartlett, Kotrlik, & Higgins, 2002). Four approaches have been taken to estimate HRD's progress as a field through research on research: Comparison to established fields (Williams, 2001), faculty productivity through article publication (Williams et al., 2002), field productivity through publication outlets (Dooley, 2002; Sleezer, Sleezer, & Pace, 1996), and analysis of types and tools of empirical research (Arnold, 1996; van Hoof & Mulder, 1997; Hardy, 1999; Hixon & McClernon, 1999).

Williams (2001) conducted a review of research methods to determine if the field of HRD was following a developmental pattern similar to management science by comparing articles published in *Human Resource Development Quarterly* from 1995 to 1999 and in the *Academy of Management Journal* from 1975 to 1979. Articles were searched for "every mentioned statistical and research methodology" (Williams, 2001, p. 2). Even though she clearly states an interest in statistical methods only, her analysis notes the use of qualitative methods but does not explore or honor qualitative methods as important to building the field.

Arnold (1996) explored the state of research by analyzing AHRD conference papers for 1994 and 1995 using four types of research: "library research/speculative, descriptive case study or field study, field or laboratory experiment, [and] theoretical model or instrument construction" (p. 818). Field studies were further broken down "into the type of tools" used, quantitative, and qualitative. Forty-one papers used quantitative methods and 16 papers used qualitative methods, four of which did not specify method and the remaining papers used 10 different methods.

van Hoof and Mulder (1997) analyzed the 1996 AHRD proceedings by dividing them into four content categories and seven research characteristics. Research methods are data collection tools such as questionnaire or interview while data format included quantitative, qualitative and quantitative, and qualitative. van Hoof and Mulder state that 57.7% of the studies used only qualitative data. This is inconsistent with their statements about 31.9% of papers gathering only narrative data "without any quantitative analysis" (p. 16) while 28.5% "quantify their qualitative data by rating them" (p. 16). The definitions of qualitative, quantitative, and mixed methods studies used by van Hoof and Mulder are not consistent with definitions accepted by methodologists in qualitative (Denzin & Lincoln, 2000) or mixed methods fields (Tashakkori & Teddlie, 1998).

Hixon and McClernon (1999) followed but did not replicate the Sleezer et al. (1996) search strategy, finding 66 articles in 23 journals published in 1997. The articles were classified by subject, research method, research participants and publication venue. Research method was divided into four types of research and "two tools (i.e., qualitative and quantitative)" (p. 899) and duplicated Arnold's (1996) classification scheme. All of the articles and papers were placed in two categories, qualitative or quantitative, and ignored the category of mixed methods. Twenty-one of the sixty-six articles relied on qualitative tools. The 45 quantitative articles were broken down by method of analysis but not the qualitative articles.

What has been lacking in these studies of research in HRD is a systematic analysis of mixed methods and qualitative empirical studies. The perception of qualitative research not being honored is evident by the uneven treatment given to qualitative studies, if they are included in the data at all in these studies on research.

Research Design

First, titles, abstracts, and methods sections were scanned to determine the number of qualitative empirical studies. Of 695 total papers, 173 (less than 25%) were considered qualitative studies. During the data collection and analysis, this number was further reduced to 151. During the two-step data collection phase, papers were read more thoroughly to find the data to input into the ACCESS database, read again by the second researcher checking the data, and again by a third researcher to analyze specific categories. The research group (5 students and a faculty member) met regularly to determine categories, to ensure consistency in search strategies and use of the database, and to discuss other issues as they occurred. Data was collected in these categories: 1) method, 2) rationale for method, 3) research question, 4) participants, 5) sample, 6) data collection, 7) data analysis, 8) data management, 9) integrity measures, and 10) inquiry literature used. Patton (2002) served as our baseline for category definitions and for decisions of what to include in a category.

The data was analyzed using content analysis procedures where we attempted "to identify core consistencies and meanings" (Patton, 2002, p. 453). Two questions were used as a guide: To what extent does Patton's taxonomy of qualitative research methods correspond to methods reported by HR practitioners and researchers? How is qualitative research performed and reported by HR practitioners and researchers today? When the data collected did not fit into Patton's taxonomies, themes that emerged from the data were used. Due to space limitations for conference submissions findings from only five categories will be discussed.

Results

This section summarizes themes that emerged during the analysis of 151 papers in the categories of (a) method, (b) rationale for method, (c) data collection, (d) sample, and (e) integrity measures.

Method

First, 37 papers (27.2%) explicitly discuss the chosen research method in terms of its theoretical perspective, following Patton's (2002) taxonomy of 16 theoretical perspectives and linking each method to its respective disciplinary roots. All but four papers use the language of Patton's theoretical perspective taxonomy. The authors of these four papers identify their perspective as "interpretivism" which Patton (p. 115) links to the hermeneutics theoretical perspective. Phenomenology and ethnography were the most common perspectives employed. Second, just over half (51%) of the papers address method in terms of the design of the research project (as a tool or technique) rather that one of philosophical concept or theoretical perspective. Case study is the most common method category for the "technicians" (29.1 %). While a case can be made for discussing method in terms of overall research design, 23 of these "technician" papers misuse the word method to address solely the data collection technique employed. Third, a smaller number of the papers (15.9%) address method in purely generic terms as "qualitative". While this may serve to clarify the research performed was not quantitative, such simplistic efforts damage the credibility of that author's findings. Even less credible were the nine papers that present qualitative research without addressing method at all.

Rationale for Selection of Method

Half of the papers specifically address the rationale behind the choice of method. Of these papers, two large categories emerged to describe the data. First, one third of the authors (36.4%) selected method for pragmatic reasons. These authors decided upon the research questions and then chose the method that seemed most appropriate to the problem at hand. Patton (2002) suggests that pragmatic choice of method, based on the questions to be answered, is a valid approach. Approximately three quarters of the 55 "pragmatist" papers directly state that the method was chosen in this fashion, with the remainder of the pragmatist papers making less explicit arguments for the appropriateness of the method to the problem. Second, in almost a quarter (22.5%) of the papers, method reflects the researchers' paradigm. The method was predetermined and influenced the choice of research problems and questions. Patton supports this approach and discusses the fundamental paradigm-questions that guide such researchers. This group appears to be smaller than the pragmatists but more pronounced in their views. Eighty-two percent of the "paradigm" papers address the authors' point of view explicitly and discuss the effect this has on their reported research.

Data Collection

Qualitative research involves "three kinds of data collection" (Patton, 2002, p. 4): interviews, observations, and documents. Only 150 papers specified the kinds of data collected. Interviews were used most often (92.5%). Patton (2002) identifies three "approaches" to (p. 342), "variations" (p. 341), or "strategies" (p. 348) of open-ended interviews: informal conversational interviews, a general guide approach, and structured interviews. Almost a third of the papers (29.5%) used Patton's classification. Fifty-five studies (39.5%) identified the approach as semi-structured interviews, but exact number of studies utilizing this approach is unclear due to the variety of terms used. For example, 40 studies used the term semi-structured interviews, four of them were also in-depth, and eight used a guide, a protocol, or a schedule. Some authors (13%) used other terminology (e.g., oral interview, non-participant interview) while a large portion (18%) did not identify the approach to interviews. Fifty-eight papers (41.4%) used documents and six utilized documents as the only source of data. Forty-five studies (29.7%) used observations to collect data, and one used observations as the only source of data. Patton (2002) points to a number of terms used for observations in the literature. Eight studies

used the term participant observation, while thirty others used the generic term observations or other descriptions.

Sampling Strategies

Forty-five papers (30%) explicitly stated a sampling strategy using Patton's classification of 16 sampling strategies. The three most popular sampling strategies used were: criterion sampling, convenience sampling and snowball sampling. Twenty-one papers (13%) were classified as having implicit sampling strategies since they did not identify any of Patton's 16 sampling strategies. Some authors merely stated that the participants were from a known pool of contacts (i.e. convenience sampling) or chosen on the basis of leadership or membership (i.e. criterion sampling). These papers mentioned some type of sampling strategy but provided no rationale for its selection. Third, thirty-four papers (22.5%) addressed sampling in purely generic terms as "purposeful". Since all sampling in qualitative research is conducted with purposeful intentions (Creswell, 2003), it leaves the reader with questions whether "purposeful" refers to the selection criteria or to the general intent of the study. Finally, fifty-one papers (33%) did not state a sampling strategy, though sampling was evident due to detailed descriptions of the units of analysis (e.g., participants' race and gender). The detailed descriptions of participants served as a substitution for the sampling strategy.

Integrity Measures

Integrity was not addressed in 51 papers (33%), possibly due to the space limitations of conference papers. A real dilemma for authors preparing eight page conference papers is what to include and to leave out. Another possibility exists that no integrity measures were used during the research process. Second, seven papers addressed integrity without explicitly stating it or discerning Patton's (2002) strategies (e.g., "the findings were shared with all participants" [Bierema, 1999, p. 778]). Third, ninety-three papers (62%) used and described integrity measure. Authors most frequently use review by inquiry participants (38.7%), triangulation with multiple analysts (32.2%), and triangulation of data sources (30.1%). Generating and assessing rival conclusions was used in twelve papers (12.9%) and expert audit review in seven papers (7.5%). Design check, negative and discrepant cases, reflexive triangulation/audience review, and theory triangulation are the least used strategies for insuring integrity.

Discussion and Implications

Many researchers in the field seem to be poorly educated regarding qualitative method; which contributes to the common perception of qualitative research as undisciplined, lacking rigor, or "soft." More interesting is the apparent division between the "theoreticians" who look to the conceptual roots of qualitative inquiry, and the "technicians" who discuss method in the terms a mechanic or scientist might use for his equipment. The dominance of "technicians" may be attributed to the desire of researchers for legitimacy.

The difference between the pragmatists and the paradigm-driven researchers has a certain "chicken and egg" quality. Can we truly be objective as researchers? The answer to the question determines where we stand as researchers in relation to our work. The voice of the researcher is an essential part of qualitative work. When it is addressed in the form of the researcher's rationale for the selection of method, the findings can be put into an applicable context for practitioners or other researchers.

The rare use of documents and observations raises concerns; their role as secondary or supplementary to interviews devalues them as rich information sources. Experts in qualitative methods should re-examine the role and value of documents and observations in HRD research. Even Patton (2002) while clearly identifying three sources of data, devotes an entire chapter for a

lengthy discussion of interviews, but discusses documents in a short sub-section, combining it with observation techniques and providing little practical guidance for researchers. The lack of clarity in defining terms related to data collection represents another serious problem. Is this a consequence of poor understanding and description of the data collection process and kinds of data? Does the variety of terminology reflect the details of different approaches to data collection? Should efforts be made to reach consistency in terminology?

In regards to sampling, researchers either choose not to explain the purpose of their sample strategy, may be unfamiliar with the varying degrees and depth of sampling strategies, or seem to regard "purposeful sampling" as a sampling technique for inquiry but disregard its many strategies for capturing rich information. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research (Patton, 2002). Qualitative research allows looking at a phenomenon holistically with many different lenses and strategies. This means doing more than generically labeling data, techniques or strategies. HRD researchers are expected to be selective in their use of the many different kinds of sampling strategies and explicitly state their rationales and logic for their selection.

Qualitative researchers generally use a combination of strategies to insure the accuracy and rigor of their interpretations. Authors address integrity "to validate their findings" (Cseh & Short, 2000, p.742), "to contribute to the reliability and credibility of the data" (Lewis & Geroy, 2002, p. 443), or "to maximize the credibility and trustworthiness of both the research process and its outcomes" (Callahan, 2000, p. 672). Researchers who took integrity into account helped our team determine the coherence of their research and enhanced the adequacy of their analysis. It is discouraging integrity was not addressed in one third of the papers. HRD researchers who chose to use qualitative methods need to acknowledge the importance of employing strategies that enhance integrity and rigor if their work is to be judged credible, reasonable, and trustworthy.

Hopefully, this study will encourage qualitative researchers to provide more detail on the research design. This will enhance the specific study and continue to raise the bar on quality of qualitative research designs. Further research should be conducted on qualitative research in HRD journals and on preparation of qualitative researchers.

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Coracoid Process Fracture in a High School Football Player

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Abstract : We presented a unique case of a high school athlete who suffered from a coracoid process fracture following a collision with an opposing player. This fracture is commonly misdiagnosed as a clavicular fracture or AC joint sprain. Initial radiographic examination may fail to identify the fracture site. Understanding the clinical features of this injury is an important prerequisite to its overall management. Any misdiagnosis or alteration from the appropriate course of treatment can inhibit return to play and may be avoided by using indicated diagnostic evaluation tools.

Scapular fractures occur infrequently, as they only account for 1% of all fractures and fewer than 5% of shoulder girdle injuries (Cottalorda, Allard, Dutour, & Chavrier, 1996). In addition, coracoid process fractures occur significantly less, accounting for only 3 to 13% of all scapular fractures with the most common mechanism of injury for coracoid process fractures being a direct blow or a forceful muscular contraction causing an avulsion fracture (Cottalorda et al., 1996; Protass, Stampfli, & Osmer, 1974). Coracoid process fractures are frequently missed due to inadequate radiographic screening and the occult nature of this injury. It is therefore important that clinicians be knowledgeable concerning the clinical manifestations of a coracoid process fracture. Recognition, advanced medical referral and appropriate follow-up of this enigmatic injury may augment the efficacy of treatment and result in an expeditious return to sport and functionality. The unique case presented in this report emphasizes the importance of appropriate overall health care for coracoid process fractures, and provides advanced clinical insight and education for certified athletic trainers, athletic therapists, physical therapists and other sports medicine professionals.

The scapula is a flat, triangular-shaped bone on the posterior aspect of the thorax. Bony landmarks include the spine, the acromion process and the coracoid process (Arnheim & Prentice, 2000). The coracoid process projects anteriorly from the supero-lateral apex of the scapula (Arnheim & Prentice, 2000). Muscular attachment of the biceps brachii, coracobrachialis, and pectoralis minor occur at the coracoid process. In addition, ligamentous support is created through the attachment of the coracoacromial, coracohumeral and coracoclavicular ligaments (Arnheim & Prentice, 2000; Mahaffey & Smith 1999). The scapula is attached to the clavicle by the acromioclavicular and coracoclavicular ligaments and articulates with the humerus at the glenoid fossa (Arnheim & Prentice, 2000). The primary function of the scapula is to attach the upper extremity to the thorax and provide a stabilized platform for upper extremity movement (Arnheim & Prentice, 2000; Mahaffey & Smith, 1999). Forced shoulder adduction or elbow flexion exacerbates the pain of a scapular fracture (Cottalorda et al., 1996). Plain radiographs that show anterior posterior views of the scapular may fail to reveal the complete structure and may need to be supplemented with oblique angle views (Goldberg & Vicks, 1985).

The scapula is ossified at several locations (Cottalorda et al., 1996). From the fifteenth to the eighteenth month after birth, ossification takes place in the middle of the coracoid process, joining with the rest of the bone during adolescence around the fifteenth year (Cottalorda et al., 1996). Between age fourteen and twenty, ossification continues at the root of the coracoid

process, base of the acromion, inferior angle, vertebral border, extremity of the acromion, and finally at the vertebral border (Cottalorda et al., 1996). Even though coracoid process fractures are uncommon, the late ossification of this structure may predispose adolescents involved in contact sports to fractures (Cottalorda et al., 1996; Protass, Stampfli, & Osmer, 1974).

Background

Case Presentation. A fifteen year-old male American football player suffered a fracture of his left coracoid process. The injury occurred during a football practice session and was observed by the supervising Certified Athletic Trainer. Direct trauma to the shoulder occurred with helmet contact under the front of the athlete's left shoulder pad. The athlete presented with a depressed shoulder posture toward the left shoulder. The athlete complained of a stabbing pain at the anterior-lateral aspect of his left shoulder. No obvious deformity was observed; however, slight swelling was present inferior to the acromioclavicular (AC) joint. Active range of motion (AROM) and passive range of motion (PROM) were decreased. Upon palpation the athlete reported point tenderness over the lateral one-third of the left clavicle and AC joint. The athlete reported numbness and tingling surrounding the left-elbow; however, dermatomes, myotomes, and deep tendon reflexes were intact. Further evaluation by the Certified Athletic Trainer was unwarranted, therefore the left shoulder was immobilized, ice was applied, and the athlete was referred to a physician for further evaluation. The Certified Athletic Trainer suspected a clavicle fracture and an AC joint sprain as possible differential diagnoses.

Evaluation. The athlete was transported to a walk-in clinic. Upon initial observation and further evaluations, the athlete was diagnosed with a shoulder dislocation or AC joint sprain. The physician administered a local anesthetic and performed passive shoulder range of motion tests in all planes, which demonstrated a significantly reduced range of motion. Radiographic examination (Figure 1) was ordered to allow for a skeletal view of the injured site. The physician finally diagnosed the athlete as having an AC joint sprain with a possible minor separation and concomitant contusion of the clavicle and acromion. The release orders prescribed ibuprofen for pain relief, immobilization via a sling at approximately 40 degrees abduction, and the application of ice 4 times per day.

The athlete's parent desired a second opinion and took the athlete to a local hospital, where the athlete was able to consult with an orthopedic physician. The athlete presented with slight erhythmia, edema, and point tenderness. The orthopedic physician diagnosed the athlete with a coracoid process fracture after evaluating the radiographic images (Figure 2). To further delineate the extent of the fracture, a computerized axial tomography (CAT) scan of the involved shoulder was ordered to confirm the findings. The physician reported a minimally displaced fracture of the left shoulder, with normal respiratory efforts, and good chest wall excursion. The neurological examination revealed intact motor and sensory distributions.

The CAT scan imaging was performed in the axial plane at 1-mm intervals with coronal and sagittal reformatted images. The CAT scan demonstrated a transverse fracture at the base of the coracoid process at the junction with the bony glenoid and scapula. The fracture was not comminuted but was displaced 7mm anteriorly and approximately 3mm medially. No other fractures were identified on the CAT scan, and there was no evidence of either AC joint or glenohumeral joint dislocations. A non-operative approach was suggested and passive range of motion exercises were prescribed once symptoms improved. The athlete was placed in a sling with the arm abducted at 40 degrees and was prescribed hydrocodone for pain control.

Clinical Course. The athlete returned to the physician five days following the coracoid process fracture diagnosis. Range of motion was limited to 90 degrees of abduction and flexion

and 60 degrees of external rotation. The physician also prescribed pendulum exercises and stretching. Additional exercises consisting of passive and active-assisted range of motion were also prescribed. Isometric and isotonic stretching and strengthening techniques were demonstrated to the athlete and his parents as part of a home based preliminary rehabilitation program. In addition to a home exercise program, the athlete was also referred to a physical therapist.

Upon the sixteenth day following initial injury, the athlete was evaluated by the orthopedic physician and began physical therapy. The physician evaluation revealed no signs of erythema or edema, but continued point tenderness over the coracoid process. Manual muscle testing scored 4+/5 for shoulder flexion, abduction, external rotation, elbow flexion, and 5/5 for shoulder extension, adduction, internal rotation and elbow extension. Pain was experienced in external rotation. Radiographs at this time demonstrated maintained alignment of the minimally displaced coracoid fracture.

A conservative rehabilitation approach was implemented by the physical therapist. Exercises consisted of gentle stretching and range of motion exercises. In the early stages of physical therapy, the athlete exhibited hypomobility in inferior and posterior glenohumeral glides as well as decreased range of motion in shoulder flexion, abduction, and external rotation. Isotonic strengthening was employed in the side lying position with and without weights to improve strength and utilize the effects of gravity. These exercises consisted of mainly scapular stabilization exercises such as lower trapezius lift and external rotation exercises. T-Bar abduction and flexion was done to improve ROM along with wall walk exercises. Bicycle ergometer cycling was done to maintain a minimal level of aerobic fitness. Each visit concluded with a period of cryotherapy to assist with healing and swelling, and electrical stimulation also for healing and pain control.

One-month post-injury the patient had a marked decrease in pain and improved range of motion; however, he was still mildly point tender at the fracture site. X-rays displayed maintained alignment and a minimally displaced coracoid fracture. The athlete continued with physical therapy and progressed from gravity eliminated positions to gravity resistant shoulder exercises. Range of motion for shoulder flexion and abduction were still measured sub-normal, yet they were significantly improved. Inferior and posterior humeral glides were still hypomobile.

Approximately seven weeks after the fracture, the athlete demonstrated normal flexion and abduction in active and passive ranges of motion. Radiographic examination at this time showed a maintained alignment of minimally displaced coracoid fracture, but the fracture line was still visible. A fibrous union would eventually heal at the fracture site within one to two months.

At the conclusion to this evaluation, the athlete was two months into the course of rehabilitation and showed marked improvements. Both inferior and posterior humeral glides were within normal limits. Manual muscle testing revealed strength as 4/5 with slight pain for shoulder flexion, abduction and external rotation. Isotonic exercises included diagonal external rotation patterns and increased resistance for all exercises. Range of motion had increased and was now comparable to the opposite side with slight pain in both passive and active movements.

Methods

The investigators searched MEDLINE, SPORT Discus and Cambridge Scientific Abstracts (CSA) for scientific papers related to coracoid fractures. Key words used were fracture of the coracoid process, coracoid process fractures, and coracoid fractures in adolescents. The

investigators used nine articles from the various databases. Information concerning the rehabilitation and evaluation was obtained from the attending physical therapist, physicians, and Certified Athletic Trainer.

Clinical Implications

In the best interest of the athlete, physicians, physical therapists, and Certified Athletic Trainers should be aware of coracoid process fractures. Indicating a coracoid process fracture as a possible differential diagnosis can initiate the appropriate course of care including the use of a CAT scan to make a definitive diagnosis. Any misdiagnosis or alteration from the appropriate course of treatment can inhibit return to play and may be avoided by using indicated diagnostic evaluation tools. When clinicians are cognizant of the most appropriate method of evaluation he/she can also raise important, respectful questions to the attending physician concerning appropriate evaluation procedures when a coracoid process fracture is a possible differential diagnosis.

Discussion

Coracoid process fractures are the most uncommon types of fractures that occur to the scapula and its occult nature may result in a missed diagnosis, which would delay the healing process and possibly result in further complications. (Blue, 1997; Cottalorda et al., 1996; Golberg, 1983; Haapamaki, 2004; Protass, 1975; Wilber, 1997). This type of fracture usually occurs from direct trauma such as in a vehicle accident or from violent contraction of the muscles attached to the bone, and may occur in isolation or in conjunction with other injuries (Cottalorda et al., 1996; Mahaffey & Smith, 1999; Protass, 1975). The researchers found only one other incident in which a coracoid process fracture was due to direct trauma during involvement in sporting activities. This occurred in a 15-year-old judo athlete who sustained the injury after a direct fall on the right shoulder (Cottalorda et al., 1996). Before closure of the epiphyseal plate of the coracoid process, the coracoclavicular ligaments are stronger than the epiphyseal plate. As a result, an injury that may result in ligament disruption in an adult may only injure the epiphyseal plate in a younger person (Cottalorda et al., 1996).

The uniqueness and infrequency of a coracoid fracture may indicate a lack of knowledge regarding the differential diagnosis of this injury. Standard anterior-posterior X-rays of the shoulder complex can sometimes give good views of the coracoid process and allow for proper diagnosis, as in our case. However, this is not always true due to the conspicuous anterior projection of the coracoid process over the acromion (Cottalorda et al., 1996). Some authors contend that the axillay view is essential for the fracture of a coracoid process to be visible (Blue, 1997; Cottalorda et al., 1996; Golberg, 1983; Haapamaki, 2004; Wilber, 1997). However, the patient's pain usually prohibits abduction at the time of the initial evaluation (Cottalorda et al., 1996; Golberg, 1983; Harris, 1998). Researchers have argued (Goldberg & Vicks, 1983) that the coracoid process may be difficult to visualize even with axillary views due to its shortened projection and have suggested a 20-degree posterior oblique film 20 degrees toward the coracoid's anterior section when other views are inconclusive.

The researchers found that scapular fractures in general are usually occult with 98% of all scapular fractures (Harris & Harris, 1988) resulting in associated injuries with hemopneumothorax and ipsilateral rib fracture being the most common (Harris & Harris, 1988). In a review of 100 consecutive scapular fractures, only fifty-seven were identified on the initial radiographs (Harris & Harris, 1988). Clinicians are encouraged to be both familiar with the symptoms of all scapular fractures in order to make the appropriate differential diagnosis and

appropriate referral. This knowledge will also be of benefit in selecting the most effective rehabilitation plan to increase the likelihood of the individual's return to full function.

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Figure 1. Anterior-posterior radiograph showing the coracoid fracture site taken at initial evaluation.

Figure 2. Anterior-posterior radiograph showing the coracoid fracture site taken during the follow-up evaluation.

Islam in the American Classroom

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Abstract: A growing American-born Muslim population warrants the attention of educators in schools across the U.S. Educating teachers about Islam will prepare them to address the needs of Muslim students. This paper discusses the rationale for improving awareness of Islam and provides basic concepts necessary for education of the Islamic culture.

After September 11, 2001, the magnifying lens zoomed in on Islam and the tone has not always been positive, nor has the information transmitted to the public through the various media sources always been accurate. As educators, we should not rely on the media to teach our students. However, most teachers lack the essential or basic knowledge to sufficiently conduct inquiry about Islam on behalf of their students. Mastrilli and Sardo-Brown (2002), who conducted a study to determine pre-service teachers' knowledge about Islam, concluded that many of the pre-service students lack rudimentary knowledge of the Islamic religion as well as the global nature and influence of Islam. In addition to their lack of knowledge, based on schema theory, their attitude and representation regarding Islam would impact how these future teachers dealt with student questions about the events of September 11, as well as their interaction with Muslim students.

Because Islam is the fastest growing religion in the West, over the next decade, the number of Muslim students in American classrooms will increase tremendously. It is imperative that teachers acquire knowledge of Islamic culture. Although some may argue that to educate teachers about Islam is a violation of the separation of church and state, I disagree: the concept of "religion" as defined in this society does not apply to Islam. Islam is a way of life, a culture. It governs every aspect of the Muslim's life. Moreover, Islamic influence on Western education is present in various disciplines from language to math and science, yet neither the American student nor the American teacher is aware of this. For these reasons, I would argue that educating teachers to Islam is not a conflict of separation between church and state. Rather, it is an obligation. Providing educational opportunities for teachers to learn about Islamic culture would allow them to facilitate a positive learning experience for Muslim students as well as for non-Muslim students. These educational opportunities are the responsibility of the institutions including universities and colleges. However, establishing teacher institutes where secondary and postsecondary teachers acquire knowledge of Islamic culture benefits both the veteran educator and beginning teacher. In addition, providing lecture series about Islam serves to educate professors and their students in the institutions of higher learning. In the case of Muslim students, they will not feel isolated or alienated in the classroom, which should improve their desire to learn. At the same time, non-Muslim students would have accurate facts to draw conclusions or form opinions about issues regarding Muslims. Moreover, dispelling misconceptions that are divisive and offensive is an additional benefit of teachers obtaining general knowledge of Islam.

Benefit to the Muslim Student

Teachers who are aware of Islamic culture and who develop pedagogy of difference (Aronowitz & Giroux, 1991) can better understand Islam and Muslim students in their

classroom. Having this understanding allows teachers the opportunity to create a critical and meaningful learning environment. Aronowitz and Giroux (1991) argued that the process of developing a pedagogy of difference includes "more than a language in which students are given a context to engage the plurality of habits, practices, and experiences" (p. 130). Instead, developing a pedagogy of difference provides an opportunity for teachers and students to deepen their awareness. Moreover, developing this pedagogy enables teachers to deepen their understanding of their own political values regarding the discourse of the various others--in this case, Islam and Muslim students. In addition to allowing students' voices to be heard, developing pedagogy of difference helps teachers to assist students in critically examining the historical and social forms that construct their lives.

Developing an awareness of Islam within the context of a pedagogy of difference will also enable teachers to assist Muslim students as they negotiate through the many obstacles of schooling. Not developing an awareness of Islamic culture can be detrimental to the goal of providing equality of education to all children. A case study of Muslim students in Canada (Zine, 2001) revealed the difficulties Muslim students and their parents faced in their schooling experience; low teacher expectation and misconception of Islamic culture created an atmosphere of isolation, alienation, and lack of trust in teachers and counselors. Because of low teacher expectation, Muslim students who wanted to attend college were placed in general level classes, instead of the rigorous college bound classes. This was the experience of Sajjad and Amal, two exceptionally bright and articulate students who were placed in general level classes. Their efforts to be reclassified were met with resistance. Sajjad explained, "I had no problems in school, but I kept waiting for a long time [to be placed in college bound classes] until I realized, 'Hey you don't have my interest in consideration'" (Zine, 2001, p. 14). Amal had a similar experience with a guidance counselor who "flowered up" the idea of taking general-level courses as being "less stressful and more fun" (Zine, 2001, p. 15). Fortunately, both students were able to recover from the misplacement but not without difficulty and struggle. Sajjad had to spend an extra two years completing the courses he needed for college. On the other hand, Amal's problem was corrected early when another counselor, after examining her academic files, identified her as an advanced student and gave her proper placement.

Nonetheless, this experience left Amal thinking that the counselor did not want her to succeed and that she was being judged on her appearance (Zine, 2001). Sajjad and Amal experienced "marginalization," defined by Powell (2001) as a practice that conveys to some students that "they are not quite as significant as others, and hence they are 'pushed to the margins'---they are forced to remain outside the mainstream culture within the school" (p. 87). These examples of student experiences clearly demonstrate an undeveloped pedagogy of difference in the Canadian school system. As evident in this case study, when teachers have low expectation of racial and ethnic minoritized youth, it can lead to negative evaluation and bias in assessment of those students as well as underachievement by those youth. Moreover, from the experience of these Muslim students within the Canadian school system, Zine (2001) concluded that these low expectations were "the result of negative racialized stereotypes and negative assumptions about Islam" (p.15). Because Muslim students are a representation of various ethnic and cultural groups, they fall into the category of "minority." Invariably, it is the minority student who is marginalized. "Marginalization is always divisive; it establishes criteria that separate the 'insiders' from the 'outsiders' along class lines" (Powell, 2001, p. 98). To avoid incidents in our school systems similar to those experienced by the students in Canada, an effort

must be made to educate teachers in the Islamic culture. "When differences are understood, they form a base for learning; when they are not, they create a barrier to learning" (Zine, 2001, p.17).

Benefit to All Students

Non-Muslim students can benefit as well from teachers who are aware of Islamic culture. A teacher possessing this skill can facilitate a learning environment that is stimulating, enriching and conducive to intellectual cultural exchange. Unifying ideas can develop from dialogue and discourse in a classroom that operates in an open atmosphere, where everyone is valued. Powell (2001) stated that teaching is about *relationship,* "a process of interaction, of give and take, of connecting with our students" (p. 137). A teacher educated in Islamic culture within the context of pedagogy of difference can create a community of learners that invites an examination of their bias and assumptions held about the world. This is similar to Powell's description of the multicultural curriculum, which affirms and validates: "It creates community out of conflict….In this way, curriculum that is multicultural can potentially unite; for unity comes from acknowledging our common humanity, our common destiny, our common purpose" (p. 199). Likewise, teachers having knowledge of Islam can potentially unite students in recognizing the commonality that exists amidst all the differences.

Knowledge of Islamic Culture

In order to dispel existing misconceptions, educators must possess certain basic information about Islam and enable them to guide students in their inquiry about Islam. In this section, I will discuss basic information that will include definitions of Islam, the life of Muhammad, Prophet Muhammad, Prophet, the central beliefs of Islam, the five pillars of Islam, the role of the *Qur'an* in Islam, and the Islamic philosophy of education.

Definitions

Islam

Islam is an Arabic word; when translated, it means *submission*, *surrender* and *obedience*, a complete submission and obedience to Allah. The term also means "*peace* and security, which signifies that one can achieve real peace of body and mind only through submission and obedience to Allah" (Mawdudi, 1980, p.17). *Allah* is the Arabic term equivalent to the English term for God, the "supreme being" and the only One worthy of worship. The *Quran* is the Book revealed to Prophet Muhammad (pbuh) and is believed by Muslims to be the exact word of God (Mawdudi, 1980, p. 75).

The Life of Muhammad

Because there are many misconceptions about the role of Muhammad the Prophet and how Muslims view him, knowledge about the Prophet is vital to educating teachers about Islam. A common misconception is that Muslims worship the Prophet. Additionally, some refer to Muslims as "Muhammadans." These statements are incorrect and offensive to Muslim students. Although Muslims revere Muhammad (pbuh), worship is reserved for God alone.

Prophet Muhammad

Prophet Muhammad (pbuh) is recognized as a messenger of God who brought the word of God to humanity. Prophet Muhammad (pbuh) was born in 569 or 570 C.E. in the Arabian city of Mecca (Reagan, 2000). Because his father and mother died when he was young, his grandfather and uncle raised him. He was very spiritual and spent a great deal of his time alone in the cave engaged in prayer and meditation. At age forty, during one of his retreats, the angel Gabriel appeared to him and told him that God had chosen him to be His messenger to all mankind (Reagan, 2000, p.183). His first command from Allah was to read: "Read in the name of thy Sustainer, who has created- (2) created man out of a germ-cell! (3)Read- for thy Sustainer

is the Most Bountiful One (4) who taught [man] the use of the pen-(5) taught man what he did not know!" (*Qur'an, Chapter 95:1-5).* Note that although the Prophet (pbuh) himself was un-lettered; the first revelation revealed to the Prophet addressed reading, evidence that education is a major focus of Islam.

Prophet

[Prophet] "Muhammad began to publicly proclaim God's revelation. His message was simple and clear: 'the belief in One Transcendent God, in Resurrection and the Last Judgment'" (Reagan, 2000, p. 184). However, the pagan Arabs did not embrace this message with open arms. Thus, the Meccan leaders, who saw him as a threat to their way of life, persecuted the Prophet and his followers. To escape the hostile environment, on two separate occasions, the Prophet (pubh) encouraged his followers to seek asylum in the Christian country Abyssinia (now Ethiopia). Eventually, after 13 years of Meccan oppression, Prophet Muhammad (pubh) and his followers migrated to Medina where he established a Muslim community. Over the next ten years. Prophet Muhammad (pbuh) continued to receive revelation and spread Islam over the region. He taught the revelation that he received from God to men and women.

Central Beliefs of Islam

Muslims believe in the Oneness of God, which is the most fundamental of all the beliefs. From a Muslim point of view, "the Oneness of God is the primordial religion taught by prophets of all faiths. Muhammad merely served to remind people of it" (Reagan, 2000, p. 184). Other beliefs include the angels, all of the prophets, all of the books of God, and life after death. As Islamic beliefs are discussed for a clear image of Islamic principles, it is important to note that although the Islamic systems are based are constant, unalterable and universal principles originating in Divine revelation, "the details of their application may be adjusted as necessary within the Islamic framework to fit existing needs and circumstances" (Reagan, 2000, p. 184). From the core beliefs, we look at the practice of those beliefs, which are outlined in the five pillars of Islam.

The Five Pillars of Islam

The pillars include profession of faith (the shahadah), prayer, almsgiving, fasting, and the pilgrimage to Mecca. These practices are a way of life for Muslims. Once a declaration has been made to believe in the Oneness of God and accept the Messenger of God and His Books, then you are a fully-fledged Muslim only when your practice is consistent with your profession (Mawdudi, 1980, p. 87). Prayer (*salah*) is the second pillar. Muslims are obligated to pray five times a day, at daybreak *(fajr*), noon (*Zuhr*), mid-afternoon (*asr*), after the sunset (*maghrib*), and evening *(isha*). Before prayer a ritual ablution (*wudu'*), is normally done with water, which helps to prepare the individual for worship. The Muslim then faces Mecca and recites verses from the *Qur'an*. Prayer is performed both in congregation and individually. On Friday, the noon prayer is performed in congregation, and is called *salat-ul-Jumu'a.* The *imam*, the religious leader, delivers a lecture called the *Khutba*, and leads the congregational prayer. The third pillar is almsgiving (*zakah*), a non-voluntary donation to support the poor. Almsgiving is an obligation on every Muslim. Fasting is the fourth pillar. It is observed once a year during the month of Ramadan. At this time, all adult Muslims who are able are required to fast (*sawm*) from sunrise to sunset (Reagan, 2000, p. 187). The Islamic fasting requires the Muslim to practice total abstinence from any food particles passing through the mouth or nose, as well as drinks of any kind-- water, milk, juices, etc.--along with abstinence from sexual association during the day (Shu'aib, 1991, p. 16). The fifth pillar of Islam is the pilgrimage (*hajj*) to Mecca. All Muslims who can afford to do so are obligated to make the pilgrimage at least once in their lifetimes.

The Role of the Qur'an in Islam

Muslims believe that the *Qur'an* is an unaltered, exact, literal transcription of the words of God Himself, precisely as they were given to Muhammad: "The Holy *Qur'an* is the only divinely-revealed scripture in the history of mankind which has been preserved to the present time in its exact original form" (Reagan, 2000, p. 187). Although translations of the *Qur'an* can be found in almost any language, most Muslims strive to read and learn the Arabic text because they consider these translations interpretations. The *Qur'an* addresses every aspect of a Muslim's life. From the *Qur'an,* the philosophy of education is developed. The nature of the *Qur'an* emphasizes literacy as an important religious obligation. The name of the *Qur'an* itself---translated as "that which is to be read--entails a challenge to become literate (Reagan, 2000, p. 187).

The Islamic Philosophy of Education

For Muslims, knowledge (*ilm*) is a moral obligation; one must obtain it and then teach it to others. The authentic sources from which Muslims receive knowledge are the *Qur'an,* the holy text and the *Hadith*, sayings of Prophet Muhammad (peace be upon him). The *Qur'an,* considered by Muslims to be *par excellence,* engenders the Muslim's attitude for knowledge and serves as the guiding force for obtaining it. Similar to the *Qur'an,* the *Hadith* also emphasizes the importance of knowledge for men and women. In Sahih Al- Bukhari, in the chapter on "Knowledge" the Prophet expressed that knowledge is not limited to men. Women are encouraged to acquire knowledge as well. In fact, the Prophet designated time to teach women (Al-Buhkari, 1976, p. 80).

Conclusion

America is strongest when all of its citizens are able to participate in the pursuit of an education. Educating America's children requires knowing who these children are, their social needs and what matters to them. The new "other" in our American school system is the Muslim children who are United States citizens---some first, second, third and fourth generation citizens. Some are converts to Islam. In the United States, Muslims number 5 million strong, and they are growing. The classroom reflects this growth; therefore, the impact of increased Muslim presence on the American classroom is inevitable. The educator should be prepared. "Basic knowledge of Islam is becoming essential for every American" (as cited in Reagan, 2000, p. 182). There is a need to re-examine the new "other" in the American classrooms (Reagan, 2000, p. 182). Are we prepared to address the needs of the Muslim child? We can be prepared by providing educational opportunities for teachers and administrators on all levels, and allowing teachers to examine their views concerning Muslims and Islam. We can further prepare by acknowledging the historical, political and social context that make up the experiences of the Muslim student, and how they view the world. Having knowledge of Islam will enable teachers and administrators to facilitate a learning environment that is positive, inclusive and embracing. Although "it takes a village to raise a child," it also takes a village to address the concerns that will impact the lives of students in the American classroom.

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Acute Posterior Ankle Pain in a Female Recreational Soccer Player

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Abstract: Os trigonum syndrome, a musculoskeletal disorder causing posterior ankle pain, occurs in approximately one in every 13 people. This condition can be challenging for the athletic trainer when evaluating an acute ankle injury. We present a unique case of an os trigonum successfully treated with conservative rehabilitation without a definitive diagnosis.

Ankle injuries in the pediatric population are common; however, proper evaluation requires a comprehensive understanding of the anatomy of the lower extremity in children. During periods of rapid growth, the centers of growth in bones, referred to as epiphyseal plates, are weak and vulnerable to injury. Pediatric ligaments are often stronger than the bones to which they attach; therefore, when the ankle is stressed the bones may fail before the ligaments. To confuse matters, the premature skeleton consists of accessory bones, such as the os trigonum, which may later fuse to larger bones after skeletal maturation. These non-fused accessory bones can be mistaken for fractures on radiographs (X-rays). An accurate diagnosis is of utmost importance when treating pediatric ankle injuries (Marsh & Daigneault, 2000); however, our case illustrated that in the current managed health care climate, Athletic Trainers can achieve a successful return to full activity without expensive diagnostic tests and definitive diagnoses.

Soccer presents a high risk of injury to the young athlete's ankle because of the skills required. For females, ages 10-14, soccer ranked third, behind basketball and bicycling, for incidence of non-fatal injuries requiring emergency room treatment (NEISSAIP, 2000). Ankle injuries account for nearly one-quarter of all injuries in soccer, with most ankle injuries resulting from tackling or being tackled (Giza, Fuller, Junge, & Dvorak, 2003). Since 77% of ankle injuries are sprains to the lateral ligament complex, the evaluation and diagnosis methods for these injuries are well documented (Woods, Hawkins, Hulse, & Hodson, 2003). However, due to the infrequency of posterior ankle injuries, evaluation of such injuries is less well understood.

Evaluating an ankle requires the clinician to follow a logical sequence of questions and observations. The information gleaned from the history, observation, and palpation portion of an orthopedic exam will guide and help the clinician in determining which special tests to perform. The bump and compression tests are used to rule out the possibility of fractures to the tibia and/or fibula. The anterior/posterior drawer tests are used to determine the laxity of the anterior and posterior talofibular ligaments, respectively. The inversion/eversion tilt tests are used to determine laxity of the calcaneofibular and deltoid ligaments, respectively, while the Kleiger test evaluates the integrity of the distal tibio-fibular syndesmoses. The Thompson test is used to rule out an Achilles tendon rupture (Magee, 1992). Accurate diagnoses can increase the likelihood that rehabilitation will be successful; however, our case illustrates the reality that clinicians may achieve a safe return to activity without a definitive diagnosis.

The goal of conservative treatment of posterior ankle pain is to return the athlete to full activity with minimal invasive techniques and reduced chance for re-injury. Rehabilitation is begun after necessary immobilization which can range from a few days to six weeks, with gradual progression to full weight bearing (Martin, 1989). Short term goals in the conservative treatment of posterior ankle pain are: restoring pain-free range of motion, increasing joint

stability/ proprioception, normalizing the gait pattern, and regaining pre-injury strength of the stabilizing muscles (Physical Therapy Notes, 2004). The long term goals are a return to pre-injury level of function and to reduce the risk of re-injury (Blake, 1992). We present a clinical case report of a 13-year-old female recreational soccer player suffering an injury to her left ankle resulting in posterior ankle pain. The purpose of this case report was to detail the successful non-operative management of this condition and add to the clinical evidence base regarding musculoskeletal injury in pediatric sport participants.

Background and Significance

Initial Evaluation

A 13 year old female recreational soccer player (pseudonym AM to protect anonymity) presented with a left ankle injury sustained after jumping up for a header and landing with her ankle in a hyper-plantarflexed and slightly everted position. AM reported feeling a "popping" in her posterior ankle and eight days later she reported to her family orthopedic physician with posterior ankle pain increasing with flexor hallucis and posterior tibialis contraction, point tenderness over the posterior soft tissue triangle, positive whip-snap test, and limited sensory deficits on the great toe. The examining physician reported AM's ankle appeared generally neurovascularly intact and stable to anterior/posterior drawer tests. (Physician Notes, 2003-2004)

Plain radiographs indicated no evidence of an epiphyseal fracture to AM's distal tibia or fibula; however, radiographs revealed a possible non-displaced fracture of the talar posterior process. Following initial physician evaluation and review of the radiographs, the course of action consisted of (a) applying a short-leg plaster cast for three weeks; (b) following-up with radiographs; and (c) if symptoms did not subside, performing a computed tomography scan (CT scan or magnetic resonance imaging (MRI). (Physician Notes, 2003-2004)

Follow up Evaluations

Four weeks after the initial injury, AM returned to the physician with moderate tenderness in her posterior ankle, a positive whip-snap test, and decreased pain compared to her previous visit. If the symptoms did not resolve, the physician discussed the possibility of ordering an MRI prior to considering injections or surgery. The MRI, an expensive diagnostic test, would be performed to rule out os trigonum syndrome or a tendon injury so as to rule out the necessity of injections. At this time, the plaster cast was removed and AM was fitted with a controlled ankle motion (CAM) walker-type boot and released with an appointment to reassess after three more weeks. (Physician Notes, 2003-2004)

Six weeks post-injury, AM presented with marked improvement of ankle pain and decreased pain with a whip-snap test. The athlete experienced increased pain with resistive inversion and point tenderness over the posterior tibialis tendon; however, she had no pain over the flexor hallucis tendon. In light of the significant resolution of the signs and symptoms, the orthopedic physician decided to continue with a conservative, non-surgical treatment plan which did not include an MRI. AM was placed into an Aircast® (Aircast, Inc., Summit, NJ) brace and scheduled for a re-assessment in two weeks. (Physician Notes, 2003-2004)

At eight weeks post-injury, AM stated that her symptoms had decreased significantly although she was unable to wear the Aircast® brace due to restrictions in her school dress code. Instead, the athlete was wearing the CAM walker-type boot at school. Upon physical exam, the whip-snap test was now negative, and the lower extremity was neurovascularly intact, but she was now tender to deep palpation on the posterior ankle. A Swede-O® ankle brace (Swede-O, Inc. North Branch, MN) was issued to the athlete and she was given an eight week prescription for physical therapy to strengthen her ankle. (Physician Notes, 2003-2004)

At nine weeks post-injury, the athlete reported to physical therapy with a diagnosis of left ankle pain. The chief complaint was sudden, sharp medial and lateral ankle pain with walking. The ankle was tender upon palpation over the medial calcaneous and deltoid ligament. Manual muscle testing measured strength at 4/5 for plantarflexion, dorsiflexion, inversion, and eversion. Bilateral girth measurements revealed equality between left and right ankles. The only significant difference in range of motion (ROM) at the ankle compared bilaterally was a deficit of 10 deg for both active and passive inversion. A proprioceptive test using a foam balance pad revealed an inability to maintain normal balance for more than 15 s compared to greater than 30 s on the uninvolved ankle. (Physical Therapy Notes, 2004)

After one month (11 visits) of physical therapy with the primary investigator, AM had made considerable progress with increased ROM and manual muscle testing compared to the initial evaluation. Manual muscle tests revealed increased strength to 5/5 for all motions except eversion, which was measured at 4+/5. Active and passive inversion ROM deficit were narrowed to 5 deg compared bilaterally. Based on the findings of the physical exam, the primary investigator and athlete agreed on setting specific short and long-term goals for her return to soccer activity. (Physical Therapy Notes, 2004)

Methods

The primary investigator developed this descriptive research project retrospectively as an athletic training student in his clinical education rotation through a physical therapy clinic. The primary investigator guided the subject of this case study through her ankle rehabilitation program. A signed medical release form was obtained from the athlete's parents in compliance with Florida International University's Institutional Review Board policies. We analyzed directly quantified observations during repeated measurements over the course of treatment as well as empirical data from diagnostic tests to establish the long range success of the treatment (Portney & Watkins, 2000). Data were evaluated and analyzed from the following sources: physical therapy evaluation and discharge forms, orthopedic physician clinical notes, and plain radiographs. Background data were collected by searching internet databases: PUBMed, Medline, and First Search using the following keywords: os trigonum, os trigonum syndrome, posterior ankle impingement, fracture of the talar posterior process, and talar compression syndrome. This information presented in this case study provides empirical findings that can be used to increase the realm of accepted knowledge and professional experience.

Results

Goals of Rehabilitation Program

Short term goals. The short term goals of physical therapy were to decrease the frequency and intensity of pain and to facilitate lower extremity function by improving ROM, strength, and proprioception. We achieved these goals after three weeks of physical therapy. Ice massage was used to control post-exercise pain and edema; standing gastrocnemius stretches and stationary bicycling to regain lower extremity ROM; four-way Theraband® (Hygenic Corporation, Akron, OH) resistance exercises and heel raise exercises to increase lower extremity strength; and a biomechanical ankle platform system (BAPS), foam balance pad, anterior/posterior balance board, and trampoline exercises to facilitate increased proprioception.

Long term goals. The long term goals of physical therapy were: (a) return the athlete to pre-injury level of function and (b) reduce the risk of re-injury to the ankle. We achieved these goals after seven weeks of physical therapy. To achieve pre-injury level of function, the athlete performed sport-specific exercises, specifically: light weight ball kicks, jogging simulation on a Cybex® leg press (Customized Fitness Systems, Los Angeles, CA), treadmill running, lateral

shuffling, lateral/forward bounding, resistive kicking using green Theraband®, figure-eight agility drills, and alternating toe-touches on a soccer ball. The athlete returned to pain-free recreational soccer activity approximately six months post-injury. To reduce the risk of re-injury to the ankle the athlete was encouraged to wear an ankle brace during athletic activities. (Physical Therapy Notes, 2004)

Discussion

Uniqueness of the Case

The posterior talus has a bifurcated shape, creating a groove formed by medial and lateral processes through which the flexor hallucis longus tendon runs. The os trigonum is an accessory bone shaped like a smooth pebble found adjacent to the lateral process of the posterior talus. A true os trigonum, not to be confused with os trigonum syndrome, is a secondary center of ossification that does not fuse with the talus after skeletal maturation (Grogan, 1990). Improper terminology and misidentification has resulted in a wide range of reported incidence of an os trigonum: 2-20% of the population (Blake, 1992). Os trigonum syndrome can be an inflammation of the posterior ankle joint capsule or ligaments surrounding the os trigonum, a fracture of the os trigonum itself, or pathology of the lateral process of the posterior talus (Blake, 1992). An os trigonum can exist asymptomatically; however, excessive plantarflexion can cause injury to the os trigonum because of its location between the posterior talus and the posterior distal tibia. The most accurate method for diagnosing os trigonum syndrome is though the use of MRI with a radiologist evaluation (Bureau, 2000). The aims of treatment should be returning the full functional capacity of the ankle with minimal invasive intervention (Blake, 1992). If the os trigonum syndrome involves only soft-tissue structures, then the ankle should be immobilized for 3-4 weeks (Martin, 1989). If the os trigonum is fractured, then immobilization could last 4-12 weeks (Kravitz, 1989). Surgical excision should only be considered after conservative treatments and local injections of anti-inflammatories have failed to resolve symptoms (Weinig, 1990).

The uniqueness of our case was that we achieved a safe return to play without a definitive diagnosis. The athlete in our case presented with a history and signs/symptoms consistent with os trigonum syndrome, however, she was diagnosed with a more generic and less descriptive condition of posterior left ankle pain. No radiological diagnostic tests such as bone scans, CT scans, or MRI were performed due to the substantial resolution of signs and symptoms within the first six weeks. Since the conservative methods had proven successful in treating the injury, the physician could not justify the cost of performing further diagnostic tests (i.e., MRI, CT scans). One week after discharge from physical therapy, the family physician noted no functional difference between the involved and noninvolved ankles (Physician's Notes, 2003-2004).

Clinical Implications

As athletic trainers, we may often find ourselves charged with the responsibility of creating a rehabilitation program without a specific diagnosis of injury from a physician. Nevertheless, our case illustrated that it is still possible to achieve a successful rehabilitative outcome. It is important for allied health professionals to be aware of os trigonum syndrome when evaluating posterior ankle injuries and to be open to non-invasive methods of treatment. Signs and symptoms of this condition are often confused with other common injuries of the ankle such as tibialis posterior and flexor hallucis tendonitis, Achilles tendon rupture, peroneal subluxation, tarsal tunnel syndrome, Sever's disease, and injury to the talar posterior process. Clinicians should be aware that the os trigonum syndrome can be a source of posterior-lateral ankle pain (Brown et al., 1995) and can only be accurately diagnosed via MRI and/or bone scanning (Bureau, 2000).

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Figure 1

Figure 2

Figure 1. Lateral radiograph of an ankle with an os trigonum. Accessed from: http://www.sma.org.sg/smj/4503/4503me1.pdf on December 10, 2004.

Figure 2. Lateral radiograph of the ankle in our case. Accessed from: Physician prescribed radiographic images.

Recurrent Tibial Tunnel Cyst Formation Following Anterior Cruciate Ligament Reconstruction and Interference Screw Removal

Jennifer C. Teeters, Michelle A. Cleary, Lindsey E. Eberman, & Jennifer L. Doherty

Abstract: A unique case of a collegiate athlete who suffered an anterior cruciate ligament injury leading to the formation of a synovial cyst is described. The cyst, localized over the tibial tunnel, resulted from irritation caused by the removal of interference screws.

The anterior cruciate ligament (ACL) is one of the four major ligaments of the knee and is regarded as the most critical stabilizer. The ACL stretches from the anterior aspect of the intercondyloid fossa of the tibia just medial and posterior to the anterior tibial spine in a superior, posterior direction to the posterior medial surface of the lateral condyle of the femur. The primary responsibility of the ACL is to prevent anteroposterior displacement of the tibia and restrict rotation of the femur upon the tibia. Although the four ligaments of the knee work as a complex unit to stabilize against various forces, an ACL sprain is considered the most serious ligament injury in the knee (Jenkins, 2002). The ACL is the most frequently ruptured ligament of the knee (Beckett, Massie, Bowers, & Stoll, 1992). The mechanism of ACL injury is often described as non-contact with 71% to 78% of ACL-injured patients describing non-contact mechanisms of injury (Woodford-Rogers, Cyphert, & Denegar, 1994).

Given the severity of ACL sprains, reconstructive surgery is often warranted and is performed using autograft (tissue from one's own body) or allograft (tissue from a cadaver). Use of a tissue graft from the semitendinosous muscle, tensor fascia latae, or, most commonly, the patellar tendon satisfactorily results in increasing stability and function (Buss, Warren, Wickiewicz, Galinat, & Panariello, 1993; Kartus, Magnusson, Stener, Brandsson, Eriksson, & Karlsson, 1999; Tierney, Wright, Smith, & Fischer, 1995). Successful outcome is a function of the graft selection, placement, fixation, and healing as well as repair of secondary restraints. The reconstruction must be able to withstand aggressive, immediate post-operative rehabilitation. As a result, numerous fixation techniques have been developed, yet controversy remains as to which one is ideal (Randall, Wolf, Heilmann, & Lotz, 1999). Most surgeons today use hardware for fixation of the graft outside [EndoButton® (Acufex Microsurgical Inc, Mansfield, MA), suture, post-screw, staple] or inside (nonresorbable and resorbable interference screws, cross pin) the drill holes (Paessler & Mastrokalos, 2003). Ultimately the goal of an ACL reconstruction is to improve the functional capacity of the knee and to prevent further damage to secondary dynamic restraints such as menisci, muscles, and tendons. ACL reconstructions have traditionally required short-stay hospitalizations for adequate pain management and nursing care. However, advances in technology and improvements in technique have reduced operative time for ACL reconstructions and decreased the risk of postoperative complications (Tierney et al., 1995).

A commonplace outpatient surgery, ACL reconstruction rarely results in complications (Tierney, et al., 1995). While complications are few, when they occur they include stiffness, quadriceps weakness, bleeding, swelling, and infection (Kartus et al., 1999). Synovial cyst formation over the tibial tunnel is a rare complication after ACL reconstruction (Deie, Sumen, Ochi, Murakami, Fujimoto, & Ikuta, 2000; Feldmann, & Fanelli, 2001; Martinek & Friederich, 1999; Simonian, Wickiewicz, O'Brien, Dines, Schatz, & Warren, 1998; Victoroff, Paulos, Beck,

& Goodfellow, 1995). The objective of this investigation was to raise awareness of allied medical professionals of synovial cysts, a rare adverse outcome of ACL reconstruction.

Background and Significance

Case presentation. A National Collegiate Athletics Association Division I baseball player (labeled as LP throughout this report to protect anonymity) presented a case of an unusual fluid filled cyst localized over the tibial tunnel. LP, a 21 year old male senior second baseman (height = 185 cm, weight = 89 kg), had his ACL reconstructed using a semitendinosus graft about nine years prior to his presentation to the primary investigator. Approximately five years after the ACL reconstruction, LP began to experience mild discomfort over the tibial tunnel and the discomfort was thought to be related to the interference screws used in the initial ACL surgery. In an attempt to relieve pain, surgical removal of the screws was suggested. The procedure was completed, rehabilitation was initiated, and, within two months, LP was cleared to return to activity without limitations. Ten months following the screw removal, the patient again reported pain and point tenderness localized over the tibial tunnel. The pain was attributed to a contusion sustained during practice and was treated conventionally. The certified athletic trainer documented all signs and symptoms and monitored the patient's progress daily. In addition to the lack of improvement after two weeks of treatment, LP exhibited signs of a cyst formation (2 x 2 cm mass). Further investigation was necessary; LP was again referred to the team physician. Evaluation by the team physician revealed development of insidious onset swelling at the harvest and tibial tunnel site incision. The area was swollen, red, and warm but within a week, the swelling had consolidated into a thick, fibrous mass (Surgical Notes, 2002a).

Radiological imaging. The physician's primary concern was to monitor any structural changes of the tibial tunnel and cyst; therefore a magnetic resonance image (MRI) was ordered. The MRI, defined as a type of radiography using electromagnetic energy, is a valuable diagnostic technique when providing soft-tissue images of central-nervous and musculoskeletal systems (Thomas, 1997). In regular practice, an MRI is a procedure in which the body is exposed to a high-energy magnetic field, which causes hydrogen atoms in water molecules to align themselves. When the current is shut off, the atoms continue to spin, emitting an energy that is detected by the computer. The hydrogen atoms of water molecules in different tissues spin at different rates, thus producing different images. White areas of the MRI image indicate a high signal or high water content, and black areas indicate a low signal or low water content (Arnheim & Prentice, 2000). Sagittal, axial, and coronal imaging of the tibial tunnel illustrated fluid extending into the soft tissues through the tunnel corresponding to the area of palpable abnormality (4 x 2 x 4 cm). On the sagittal images (Figure 1), the ACL graft appeared to be intact; post surgical changes in the distal femur and proximal tibia were obvious. The radiologists' impression of the MRI revealed that the soft tissue mass was a collection of fluid in the tibial tunnel extending from approximately 5 mm distal to the proximal tibia into the subcutaneous region. High signal adjacent to this area in the soft tissues may represent edema or minimal fluid extravasation (Radiology Report, 2002). The evaluation process continued over the next two weeks during which time the cyst maintained its size, and the patient's pain and point tenderness had resolved. The team physician allowed LP to participate as tolerated.

Cyst excision procedure. LP participated throughout the remainder of the baseball season without pain. At the completion of the school year, LP underwent excision of the cyst. Review of surgical notes (2002b) prior to the surgical excision of the cyst indicated no family history of disease and no known drug or food allergies. Physical exam revealed that the patient is well developed, well nourished, alert and oriented, with normal mood and affect. Review of the

cardiovascular system concluded no significant edema or varicosities noted in extremities and circulation appeared normal. Examination of the skin around the knee was within normal texture and appearance. Respiration effort was unlabored and normal and sensory function was within normal limits. Results of the musculoskeletal exam revealed the right knee had excellent motion and stability with no mechanical symptoms. An obvious cyst formed over the proximal medial tibia, site of the tibia drill hole. The remainder of the musculoskeletal exam was within normal limits. Results of the surgery were the removal of 4 cc of semisolid fluid from the cyst and an injection of .5 cc of Celestone® (Schering-Plough, Kenilworth, NJ) into the tibial tunnel (Surgical Report, 2002b). Celestone® (betamethasone sodium phosphate) is a synthetic corticosteroid that has similar pharmaceutical actions of cortisone. Important pharmaceutical actions of cortisone include regulatory action as an anti-inflammatory agent (Thomas, 1997). The injection of Celestone® was administered to control the pain localized around the area of discomfort.

Cyst reformation. Recovery over the summer from the cyst excision appeared successful, but upon return for the fall semester, the annual pre-participation exam revealed the cyst had refilled to approximately 5 x 5 cm, larger than it was before excision. A re-evaluation rendered no signs of pain or deficiencies in range of motion or strength. The athlete was cleared by the team physician to participate without limitation. A few days into the baseball season, LP was sliding into a base and hit his knee on the ground. The mechanism decompressed the cyst by 0.5 cm but did not cause any pain or trauma to the area. Within one week following the base slide, the cyst had fully decompressed. The sac containing the gelatinous fluid is believed to have ruptured, causing the fluid to leak into the surrounding structures of the knee. Although the rupture decompressed the synovial cyst, one week later the cyst reformed to its larger size as shown in Figure 2a and Figure 2b (Progress Notes, 2002).

Methods

The participant was identified as a patient of the principal investigator while working as an athletic training clinical education student. A signed medical information release waiver was obtained from the participant in accordance with Florida International University Institutional Review Board policies. Data were collected by searching the internet databases MEDLINE, PUBMed, and First Search with the following keywords: ACL reconstruction, cyst, ganglion, hamstring, ACL complications, and ACL grafts. The patient's medical files and notes as well as diagnostic testing reports were gathered from the Head Athletic Trainer and Head Team Physician. After gathering all the related data, the publications were analyzed and synthesized to present this unusual case.

Results

A cyst is defined as a closed sac or pouch, with a definite wall, that contains fluid, semifluid, or solid material. It is usually an abnormal structure resulting from developmental anomalies, obstruction of ducts, or parasitic infection (Thomas, 1997). The etiology of these cysts is variable and has been attributed to a number of causes including the use of bioabsorbable screws, Gore-Tex® grafts (W. L. Gore and Associates, Flagstaff, AZ), extra-articular fluid extravasation secondary to direct tibial tunnel communication, patellar tendon or Achilles tendon allografts with or without ethylene oxide sterilization, and use of nonabsorbable sutures (Brettler & Soudry, 1995; Deie et al., 2000; Feldmann et al., 2001; Martinek et al., 1999; Roberts, Drez, McCarthy, & Paine, 1991; Victoroff et al., 1995). Investigations have evaluated the occurrence of complications after arthroscopic ACL reconstruction. A study conducted in Japan followed 89 patients using MRI to detect pretibial cysts as complications after ACL reconstruction using

semitendinosus-gracilis grafts. The researchers found cysts in 2 patients, a rate of 2.2%. The authors concluded that cyst formation occurred as a result of tendon necrosis during the process of incorporation into the osseous tunnel at 6 to 12 months post-surgery (Deie et al., 2000).

At present, nine years after the initial ACL reconstruction, the patient's cyst has maintained its size of 5 x 5 cm and remains dormant and pain free; therefore he has been cleared to play without limitation. In the future, LP understands that this area could be debrided surgically if the cyst recurs. Another possible treatment would be placement of a supplemental bone graft in the area to try to create some type of seal from the tibial drill hole. At this time, LP is doing well clinically, understands his options, and will return to the athletic training room for treatment on an as needed basis.

Discussion

Pretibial cyst formation is a rare complication after arthroscopic ACL reconstruction. For the Certified Athletic Trainer, the outward signs of synovial cysts mimic those of a contusion, just as in this case in which the sports medicine staff observed a direct contact mechanism, raised skin, point tenderness, and pain localized over the tibial tunnel. Studies confirm that a small percentage of patients who undergo ACL reconstructions develop complications. Complications developed in these studies were believed to be associated with an incomplete graft, excessive irritation caused by interference screws, the materials used in the making interference screws, or nonabsorable sutures left in the graft (Brettler & Soudry, 1995; Deie et al., 2000; Simonian et al., 1998; Victoroff et al., 1995). Most cases involving synovial cysts exhibit formation within two years of an ACL reconstruction (Sekiya, Elkousy, & Fu, 2004). What is unusual about this case is that it first occurred more than 5 years after the ACL reconstruction, and few cases have reported cyst formation resulting from irritation caused by the removal of interference screws.

Clinical Implications

Significance of this case study lies in early recognition of complications that may occur following an ACL reconstruction. Although synovial cysts are a rare complication, it is important for Certified Athletic Trainers to identify signs and symptoms associated with a synovial cyst and refer appropriately. A prompt referral ensures early treatment and may ultimately prevent the cyst from impeding athletic performance.

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Figure 1. Magnetic resonance image (sagittal view) revealing fluid inside the tibial tunnel.

Figure 2a **Figure 2b**

Figure 2a. Anterior view of the cyst as it appears today.

Figure 2b. Reformed synovial cyst over tibial tunnel with dime for reference size.

Metacognitive Strategies and Learning

Charlotte Zeitsiff

Abstract

During the past decade, metacognition has been identified not only as a component of cognition but also as an important factor in learning. This practitioner proposes that educators and educational researchers should focus on the development and implementation of metacognitive learning strategies. The existing metacognitive studies have concentrated on several areas. One area centers on the continuing efforts to identify all the elements of metacognition. Another area concentrates on the roles that metacognition plays in specific learning behaviors that occur at various ages and levels of complexity. The third area investigates the relationships of metacognition to specific content areas of learning by focusing on the effects of metacognitive learning strategies. The most common areas of study have been reading comprehension, math skills, writing skills, and applying metacognitive strategies to learn various subjects using the computer. Directly or indirectly, the existing studies relate to the expanding applications of the relationships and relevancies of metacognition to learning. Considerable evidence confirms that when students use metacognitive strategies they often experience a higher level of learning. This practitioner believes that experiencing higher levels of learning gives students the confidence they need to construct knowledge which promotes life-long learning.

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Appendices

Call for Papers 2006 for the Fifth Annual College of Education Research Conference at Florida International University
Saturday April 29, 2006

The Cornerstones of the Conference: Honoring Inquiry, Promoting Mentoring, Fostering Scholarship

Conference Mission: The purpose of the Florida International University Annual College of Education Research Conference (COERC) is to enhance the existing research culture. The conference provides a meaningful vehicle for the preparation, mentorship, and presentation of scholarly work by students, faculty, and alumni.

Interculturalism, Interconnectedness, Inquiry, Instructional Leadership: Decades of educational research indicate that the practice of educating our nation's citizens cannot be judged from a single vantage point. Individuals come to the educational enterprise with different needs and goals often addressed through educational research that weaves a tapestry between practice and theory. We recognize the diverse applications of educational research and the behavioral, psychological, and cultural viewpoints that exist at local, national, and international levels. Conference participants are encouraged to consider the richness of the diverse content areas in education (school and non school based) serving children and adult students.

The Lorraine R. Gay Award for Outstanding Research: To identify and honor the College's emerging scholars, presenters of outstanding research will be awarded with the Lorraine R. Gay Award for Outstanding Research. This award honors the memory of the founding member of the COE research faculty, Lorraine R. Gay. The award will be presented in two categories: (a) best paper authored by an individual student or group of students and (b) best paper co-authored by student(s) and faculty representing a mentoring relationship.

Submission Information: All current and former FIU College of Education students and faculty are encouraged to submit papers. Papers are welcome from practitioners, students, and faculty from other institutions, Universities, Centers, Institutes, and schools.

All papers must be submitted by ***Monday December 5, 2005*** for review by the Review and Selection Committee. A double blind review process, ensuring anonymity for both authors and reviewers, will be used for all paper submissions. Once accepted, authors may be asked to revise and resubmit the paper according to suggestions from the Review and Selection Committee and the Conference Proceedings Editor(s). The 6-page single spaced paper will be a complete description of the scholarly work with specific or in-depth analyses of the topic. Papers may be submitted by single or multiple authors. Students are encouraged to submit papers based on theses/dissertations or other scholarly work. Faculty and students are encouraged to submit work performed independently or in collaboration with colleagues.

Paper Presentation Sessions: One to three papers may be presented during the 60-minute sessions organized around common themes. Each session will be in a separate room with up to four concurrent sessions scheduled. The presenter of each paper will be allotted 10 to 15 minutes to present the key points from the paper. The moderator will organize the discussion that follows according to the number of papers in the session and audience interests. MS PowerPoint, overheads, or handouts are encouraged but not required.

The Review, Selection, and Publication Process: The Review and Selection Committee will screen papers for adherence to Submission Instructions and American Psychological Association (APA) 5th (ed) guidelines. Papers that have not followed these basic instructions will be returned to author(s) for corrections and possible re-submission within two weeks of receipt. All submissions will undergo a double blind review by the Review and Selection Committee, who will review each paper for content, clarity, and organization. Papers may be accepted, accepted with revisions, or rejected. Papers requiring revisions will be returned to the author(s) to either make revisions or address the reason the revision was not made in a cover letter within two weeks of receipt. The proceedings editors will edit every paper, returning them to authors to address the suggested revisions. The edited papers will then be returned to the editors for inclusion in the proceedings. The Proceedings Editor(s) may make necessary formatting and editing changes and contact author(s) for final approval of the paper for publication.

Writer's Workshop Series and Research Resources: Attendance at the workshop series is highly recommended for students planning to submit to the conference. The goal of the workshop series is to contribute to students' success in submission and to increase the quality of the papers to be presented. The workshops are designed to improve writing skills, facilitate the writing process, provide information about the paper formats and requirements, and answer students' questions and concerns. **Participation in a final proposal submission workshop is strongly encouraged for students planning on submitting to and presenting at the Conference**. More information is available at www.fiu.edu/~clearym click on "COE Fifth Annual Research Conference". Sessions are currently facilitated by Dr. Michelle Cleary. All COE students and faculty are welcome to join the Writing Group. Meetings are Sunday evenings from 6 to 8 pm monthly providing feedback on scholarly work in progress to members. For information on contact Dr. Tonette Rocco roccot@fiu.edu, the group facilitator.

Conference Timeline: **Monday December 5, 2005 Midnight Paper Due to COERC Steering Committee**
Authors will prepare manuscripts following COERC Submission Instructions and Email their submissions with a cover page, original manuscript, and a blind copy (that which does not indicate any information concerning the author's name or institution) via e-mail to the COERC Steering Committee Chair, Dr. Tonette Rocco at: roccot@fiu.edu. Upon receipt of the paper the Committee will send an e-mail acknowledgement.

Conference Submission Instructions: Specifically, the title of the subject line of the e-mail message should be: "COE Conference 2005". The e-mail attachments must be formatted as MS Word documents. The cover page should include the author's mailing address, city, state, zip code, work phone, fax, and e-mail address (see Sample Cover Page in the Call for Papers). No hard copy papers or faxes will be accepted.

Please title the (3) email file attachments as follows:

1. Cover Page - Include your last name and the word "Cover" (e.g., *Jones.Cover.doc*).

*Include all author(s) identification/contact information and institutional affiliation (COE Department) on the Cover Page. The manuscript should not contain any identifying information as the Cover Page will be removed to facilitate the blind review process.
*Identify the Paper Category (see Paper Categories list and guidelines)
*Include three (3) Key Words not in the Title that characterize the focus of the paper
*Provide the Warrant Statement.

2. Original Manuscript - Include your last name and the word "Manuscript" (e.g., *Jones.Manuscript.doc*).

*Provide an abstract of 25-50 words.
*The manuscript should be six (6) single spaced pages including references with one inch margins on all sides.
*APA 5th edition guidelines must be adhered to for format, organization, headings, reference citations, grammar, and other issues.

3. Blind Copy - Include your last name and the word "Blind" (e.g., *Jones.Blind.doc*).

Research with Human Subjects: Please be mindful that the FIU Division of Sponsored Research requires completion of the *National Institutes of Health Human Subjects Online Training Module* (http://cme.nci.nih.gov) and *Institutional Review Board (IRB)* approval before the collection of any data involving human subjects. For further information contact one of the COE IRB representatives: Dr. Barry Greenberg at greenb@fiu.edu or 305.348.3232 or Dr. Leonard Bliss at blissl@fiu.edu or 305.348.1903.

Thursday January 17, 2006 Notification of Submission Status will be sent to all authors. Suggestions for revisions will be sent with notification of acceptance.

Monday February 20, 2006 Receipt of the Papers with Suggested Revisions
Authors must re-submit the revised 6-page single spaced paper. If additional revisions are needed or APA 5th edition guidelines are not followed the paper will be returned to the author(s) with a date for return.

Monday March 13, 2006 Deadline for Final Revisions of Papers
Please assist us in our efforts to produce high quality proceedings by following instructions, addressing editors/reviewers suggestions for improvement, meeting deadlines, and adhering to APA 5th edition guidelines. Papers may be returned after this date by the editors for additional revisions.

Saturday April 29, 2006 9 a. m. to 5 p. m.
Fourth Annual COE Research Conference

Sample Cover Page

Brief Paper Title 1

SAMPLE COVER PAGE

Title typed double space in Uppercase and Lowercase Letters and Centered between the Right and Left Margins

First author's name
Author's Email and Phone number
College of Education, Department of XXXXX

(List in order of contribution)
Second author's name, Third author's name, etc.

"I (we) warrant that if this paper is accepted, I (we) will address all concerns of the COERC Reviewers and Proceedings Editors and submit a final (revised) MS Word six page (single-spaced typed) paper for publication in the Conference Proceedings. I (we) understand that if this final paper is not received in its final form on or before **March 13, 2005**, this paper will not be included as part of the Proceedings."

Author Preparing Warrant Statement:

Paper Category:
Practitioner Concern □
Reports on Research □
Evaluation Studies □
Methods and Issues in Research □

Key Words: (List three words not in the Title that characterize the focus of the Paper)

For questions on submission instructions contact Dr. Tonette S. Rocco roccot@fiu.edu or

305.348.6151 or any member of the Fifth Annual COE Research Committee.

Note: All moderators, presenters, and their family and friends are expected to register for the COE Research Conference.

Paper Categories

Reports on Research: Reports on research (qualitative, quantitative, or mixed methods studies) including thesis and dissertations with their implications for practice and research.

Methods and Issues in Research: Controversial and critical questions vital to research and practice, such as in research methods, ethics, the use of research in practice, practice-generated needs for research, and processes by which researchers determine the areas in which to conduct research. A description of the issue or summary of the points at issue should be presented.

Practitioner Concerns: Questions and concerns regarding practitioners' work in various settings. This may include, but is not limited to practice in education and training programs in schools, corporate and community organizations, leisure activities for children and adults, or other extra-curricular activities. Papers may address problems and/or solutions in areas of practice such as curriculum design, strategy selection, teaching and learning, or program implementation. They may also address how practitioners view research related to their concerns.

Evaluation Studies or Action Research: Reports on studies involving needs assessment, priority setting, goal analysis, evaluation or other forms of applied research.

Suggested Areas to Address in Papers:

- Theoretical framework/review of the literature that sheds light on the practitioner concern, research question, evaluation purpose, or research issue.
- Clear statement of the research concern/question/purpose/issue to be addressed.
- Research design
  - Rationale for method (qualitative/quantitative/mixed)
  - Research question(s)/Hypothesis
  - Data collection and analysis
- Results of the study and reflections for potential changes in practice/policy/research
- Relationship of findings to existing theory
- Implications and recommendations for a specific field in education (school or non school based)

Paper Submission Checklist

Electronic files
- □ Cover page, original manuscript, blind copy labeled correctly (e.g. author.cover.doc)
- □ MS Word is used
- □ Margins are 1 inch on all sides
- □ Length of text (including references, tables and figures) is six single spaced pages
- □ Times New Roman 12pt type font used
- □ Pages are numbered in the header of the upper right hand corner of each page
- □ Spelling and Grammar are checked
- □ Submission Instructions are followed

Cover Page
- □ Paper Title is provided
- □ All authors' names, First author's email, phone number, and affiliation
- □ Paper Category (from Paper Category List)
- □ Three Key Words not in Title characterizing the focus of the Paper
- □ Warrant Statement

Original Manuscript
- □ Paper Title is included
- □ APA (5th ed.) Guidelines followed throughout
- □ A theoretical framework for the project is provided
- □ A clear research question or purpose is stated
- □ Clearly written using concise language and few pronouns
- □ Headings are meaningful and provide clear guide to organization
- □ The scholarly work is relevant to the COE audience
- □ Method description provides details on what, how, and why for all elements in the research design description
- □ Paper Category is evident in the presentation
- □ APA format is followed for references cited in text and listed in Reference List
- □ All references listed appear as citations
- □ Tables and Figures provided on separate pages inserted after reference list -------□

Blind Copy
- □ No author identification is present (Otherwise same as Original manuscript)

Honoring Inquiry, Promoting Mentoring, Fostering Scholarship
Fourth Annual College of Education Research Conference
April 30, 2005

Time	*Event*	*Location*
8:00-8:30 a.m.	Registration/ Light Refreshments	ZEB Courtyard
8:30-8:45 a.m.	*Welcome Tonette S. Rocco, Co-Chair Conference Steering Committee*	ZEB 150
8:45-9:15 a.m.	*Introduction Anthony Normore* *Opening Keynote: Dr. Modesto Maidique* President, Florida International University	ZEB 150
9:15-9:30 a.m.	Break	
9:30-10:30 a.m.	*Concurrent Sessions 1, 2 & 3*	
Session 1	Issues in Sports Medicine: Sports Medicine: Postural Stability Moderator: Dan Dustin	ZEB 110
	Effects of Active Dehydration on Balance in Normothermic Participants Lindsey E. Eberman, Michelle A. Cleary, Monique Butcher-Mokha, Jennifer L. McKinney *Effects of Dehydration on Balance as Measured by the Balance Error Scoring System* Jennifer L. McKinney, Lindsey E. Eberman, Michelle A. Cleary, Richard Lopez, David Sandler *Central Vestibulopathy in a Female Collegiate Basketball Player: A Case Study* Amy J. Reckard, Lindsey E. Eberman, Michelle A. Cleary, Jennifer L. Doherty, Dustin R. Gatens	
Session 2	Children: Literacy, History and Change Moderator: Stephen Fain	ZEB 135
	Children as Change Agents: The Influence of Integrating Environmental Education into Home Learning Projects on Families and Community Members Peggy Mandel *The History of Kindergarten: From Germany to the United States* Christina More Muelle *Content and Methods of Teaching Literacy: The Effect of One-on-One Tutoring in Preservice Clinical Education in Two Low-Performing, Diverse School Settings on the Effectiveness of Preservice Teachers' Reading Instruction* Joyce Fine, Helen Robbins, Lynne Miller, Lynn Yribarren	
Session 3	Leadership and Organizational Development Moderator: Michael Parsons	ZEB 101
	Feminine Concepts of Leadership and Power: A New Framework for Development Ethics and Education Development Stephanie Paul Doscher, Anthony H. Normore *A Typology of Workplace Commitment Elements and Antecedents Affecting Organizational Effectiveness* Sandra L. Fornes, Tonette S. Rocco *A Professional Development Model to Promote Internet Integration in P-12 Teaching Practices* Victoria A. Giordano	
10:30-10:45 a.m.	Break	

10:45-11:45 a.m.	*Concurrent Sessions 4 & 5*	
Session 4	Issues in Athletic Training: Fractures & Sprains Moderator: Jenna Doherty	ZEB 110
	Physeal Growth Plate Fractures: Implications for the Pediatric Athlete Tara J. Clark, Lindsey E. Eberman, Michelle A. Cleary *Acute Posterior Ankle Pain in a Female Recreational Soccer Player* Zevon Stubblefield, Michelle A. Cleary, Lindsey Eberman, Jennifer Doherty *Coracoid Process Fracture In A High School Football Player* Edwin E. Ryan, Jennifer Doherty, Lindsey Eberman	
Session 5	Deans Grant Roundtable	ZEB 101
	Join recent recipients of College of Education Dean's Grant awards as they discuss the progress of their research and share findings and insights. Panelists include Laura Blitzer, Lynn Ilon, Hillary Landorf, Bryan Moseley and Anthony Normore.	
11:45 – 1:00	*Lunch – Presentation by Dr. Charles Bleiker, followed by discussion and Q&A*	ZEB 150
1:15 – 2:15	*Concurrent Sessions 6, 7, & 8*	
Session 6	Issues in Sports Medicine: Best Clinical Practice in Knee Injury Moderator: Bryan Moseley	ZEB 110
	Current Best Practice for Management of Medial Collateral Ligament Injury Sean E. Garvey, Michelle A. Cleary, Lindsey E. Eberman, Jennifer C. Teeters *Recurrent Tibial Tunnel Cyst Formation Following Anterior Cruciate Ligament Reconstruction and Interference Screw Removal* Jennifer C. Teeters, Michelle A. Cleary, Lindsey E. Eberman, Jennifer L. Doherty	
Session 7	Modes of Inquiry Moderator: Peter Cistone	ZEB 135
	Shifting Our Gaze to the Strengths of Alternative Education Students Debra M. Pane *An Examination of Qualitative Empirical Studies at the AHRD from 1999-2003: Method, Rationale for Method, Data Collection, Sampling Strategies, and Integrity Measures* Tonette S. Rocco, Howard McCarley, Maria S. Plakhotnik, Judith Bernier, Silvana Ianinska, Cecilia Gonzalez	
Session 8	Issues in International and Intercultural Education Moderator: Lynn Ilon	ZEB 101
	Islam in the American Classroom Patricia Salahuddin *Japan's Educational System* Flavia Iuspa *Student Knowledge and Perceptions of Islam and the Arab and Muslim World* Hilary Landorf, Luis Pagan	

2:20 – 3:20	*Concurrent Sessions 9 & 10*	
Session 9	Disability and Marginalization Moderator: Patricia Barbetta	ZEB 150
	Integrating Individuals with Developmental Disabilities into the Open Labor Market *Sandra L. Fornes* *A Study of Teacher Efficacy of Special Education Teachers of English Language Learners with Disabilities* Oneyda M. Paneque, Patricia M. Barbetta	
Session 10	Language Acquisition and Instruction Moderator: Angela Salmon	ZEB 101
	From Bilingualism to Interlinguistics: The Case Against the Deficit Model of Language Acquisition Alfredo Jiménez *Scaffolding in Second Language Learning and Instruction* Teresa Lucas	
3:30 – 4:00	Lorraine R. Gay Award for Excellence in Research/Scholarship Presented by Barry Greenberg Award for Best Graduate Student Paper	ZEB 150
4:00 – 4:45	*Introduction and Closing* Michelle A. Cleary, Co-Chair Conference Steering Committee *Inquiry, Mentorship & Scholarship: Next Steps:* Linda Blanton, Dean, FIU College of Education	ZEB 150