RELEVANT ELEMENTARY PHYSICAL EDUCATION

Lori Smith
Author and Instructor
Northwest Iowa Student Teacher Coordinator
University of Northern Iowa

Trip Hedrick
Production Coordinator
Championship Productions

Chuck Sengstock
Project Director
Director, Continuing Education and Professional Development
School of Education, Drake University

Michael K. Bryant
Director of Training and Curriculum
Continuing Education and Professional Development
School of Education, Drake University
RELEVANT ELEMANTARY PHYSICAL EDUCATION

Project Staff

Dr. Janet McMahill, Dean
School of Education
Drake University

Chuck Sengstock, Director
Continuing Education and Professional Development
School of Education, Drake University

Support Services
Drake University Continuing Education and Professional Development
Website: www.drake.edu/cepd/distance
Email: distancelearning@drake.edu
Toll free Phone: 1-800-768-3224

Production Crew
Championship Productions

Editor
Kyle Knicely

DVD Author
Dustin McDonough
PREFACE

The faculty and staff of Drake University School of Education are proud to present “Relevant Elementary Physical Education” (EDMA 272). This three hour graduate credit course is part of the REAL COACHING series for teachers, physical education teachers and coaches. It comes at a point in history when the face of the University is changing rapidly from a traditional set of fixed properties into a “space” where education is presented in many innovative ways. Continuing education and distance learning opportunities are presented each year by Drake staff and faculty to thousands of teachers across the United States. Our REAL COACHING video series is a major effort to complete a full set of offerings by assisting those whose time and resources do not permit them to attend class on a college campus.

As you view, discuss, review and respond to the ideas and concepts in this video correspondence course, be encouraged by the team behind the scenes. Drake support staff and REAL COACHING producers believe in our new course. We welcome your comments and evaluations!

Chuck Sengstock, Director
Continuing Education and Professional Development
Drake University
School of Education
chuck.sengstock@drake.edu
(515) 271-2184
www.drake.edu/cepd
EDMA 272

RELEVANT ELEMENTARY PHYSICAL EDUCATION

This course will help you understand the research behind movement and learning and how you can put more relevance into organized, well-managed lessons. You will learn strategies to help anchor learning with a variety of movement-based activities that teach children how to learn and move at the same time. Exercise can help the brain decrease the amount of mental stress that can cause lapses in learning. You will learn to develop an action plan to creatively implement activities that will easily supplement what you already teach without changing your whole curriculum.

Three Semester Hours of Graduate Credit

Course Materials:

1 Study Guide (pdf)

1 MS Word Document
   with Answer Pages for Word Processing

4 DVDs

2 Text Books

Spark: The Revolutionary New Science of Exercise and the Brain, J.J. Ratey

Action-packed Classrooms K-5: Using Movement to Educate and Invigorate Learners, Cathie Summerford

© Drake University, 2009
Course Author and Instructor:

Lori Smith, MA

PE Instructor for 18 years

Instructor at Price Laboratory School
University of Northern Iowa

2007 Black Hawk County Gold Star Teacher

2003 National AAHPERD Mabel Lee Award Recipient

2001 Iowa Elementary PE Teacher of the Year

Past President of Iowa AAHPERD

Professional national presenter

Author of DVDs & videos

Co-author of published articles
"Sports and other forms of vigorous physical activity provide educational experience which cannot be duplicated in the classroom. They are an uncompromising laboratory in which we must think and act quickly and efficiently under pressure and then force us to meet our own inadequacies face to face -- and to do something about them -- as nothing else does. In any athletic activity we are thrown upon our own resources to succeed in the face of a strong and immediate challenge. Sports resembles life in capsule form and the participant quickly learns that his/her performance depends upon the development of strength, stamina, self-discipline and a sure and steady judgment."

- Supreme Court Justice Byron “Whizzer” White -
University of Colorado ’38
DISCLAIMERS

The RELEVANT ELEMENTARY PHYSICAL EDUCATION video course has been prepared with the goal of enhancing the effectiveness of all Physical Educators. However, individual circumstances vary and Drake University and/or Championship Productions cannot guarantee the effectiveness of the instructions and advice contained in the RELEVANT ELEMENTARY PHYSICAL EDUCATION video course under all circumstances. There are no express or implied warranties, and no warranties of merchantability.

The instructions and advice presented are not intended as a substitute for medical advice. To reduce the risk of injury, consult with a physician before attempting to use the methods of treatment portrayed.

Drake University and/or Championship Productions, its employees and agents cannot be held liable for any injuries or damages resulting from application or misapplication of the instructions or advice contained in the RELEVANT ELEMENTARY PHYSICAL EDUCATION video course, even if those injuries or damages result from the negligence, misrepresentation or fault of Drake University and/or Championship Productions, its employees or agents.
Drake University Distance Learning

Drake University’s Division of Distance Learning, part of the School of Education, Continuing Education and Professional Development, provides educational outreach to K-12 educators. Drake’s Distance Learning Department offers video and online courses designed for coaches who teach and teachers who coach. They are:

**Video Courses**

- Theory of Coaching - EDMA 171
- Ethics in Sports - EDMA 172
- The Teaching Coach - EDMA 173
- Adapted Physical Education - EDMA 174
- Parent-Athlete-Coach Alliance - EDMA 175
- Step Up and Lead – EDMA 176
- Team Building for Success – EDMA 177
- Relevant Elementary Physical Education – EDMA 272
- Real Coaching II: Honing the Competitive Edge – EDMA 277
- Rev Up the Revolution: Your Middle School PE Game Plan – EDMA 278

**Online Courses**

- Real Coaching II: Honing the Competitive Edge – EDMA 250
- The Mental Edge: Applied Sports Psychology for Coaches – EDMA 251
- High School PE: Putting National Standards into Action – EDMA 252

Your learning experience in the Distance Learning Division is enhanced with the professional support of evaluators who have been trained in course assessment and in current related issues. We offer telephone and online support for any questions you may have regarding the completion of your course work.

Drake University School of Education  
Continuing Education and Professional Development  
Distance Learning  
3206 University Avenue  
Des Moines, IA  50311  
1.800.76-TEACH (Toll free)  
[http://www.drake.edu/cepd/](http://www.drake.edu/cepd/)
Championship Productions

Every person at Championship Productions is directly tied to carrying out our mission, which is “helping individuals and teams achieve success and realize their fullest potential.” We carry out this mission by producing high-quality instructional products featuring renowned professionals in every sport and by providing the best customer service in the industry. The foundation of our mission is built on teamwork, personal improvement, a positive attitude, and a commitment to excellence.

Since 1976, Championship Productions has produced thousands of instructional DVDs, videos and books for coaches, athletes, and parents all over the world. The company has evolved over the years, from a single sport company, selling primarily books, to an internationally-recognized leader in producing the highest quality instructional products in over 20 sports and providing the top customer service of any company, in any industry, anywhere!

The Championship Productions Team
Ames Community Development Park
2730 Graham Street
Ames, IA  50010
1.800.873.2730 (Toll Free)
1.515.232.3687 (International)
1.515.232.3739 (Fax)
info@championshipproductions.com
Welcome to “Relevant Elementary Physical Education”  
(EDMA 272)

Welcome to “Relevant Elementary Physical Education,” a unique video course offered by Drake University’s Distance Learning Division. In partnership with Championship Productions, we’re proud to offer you this graduate course.

Relevant Elementary Physical Education will help you understand the research behind movement and learning and how you can put more relevance into organized, well-managed lessons. You will learn strategies to help anchor learning with a variety of movement-based activities that teach children how to learn and move at the same time. Exercise can help the brain decrease the amount of mental stress that can cause lapses in learning. You will learn to develop an action plan to creatively implement activities that will easily supplement what you already teach without changing your whole curriculum.

Along with a number of course specific DVD’s developed by your instructor Lori Smith, this course includes two excellent texts. The first is: SPARK, The Revolutionary New Science of Exercise and the Brain, written by John J. Ratey, MD. In SPARK, Dr. Ratey, embarks upon a fascinating and entertaining journey through the mind-body connection, presenting startling research to prove that exercise is truly our best defense against everything from depression to ADD to addiction to aggression to menopause to Alzheimer's.

The second text included with this course is: Action-packed Classrooms K-5: Using Movement to Educate and Invigorate Learners, written by Cathie Summerford. Packed with activities, this book offers strategies for basic energizers, objectives for standards-aligned instruction, and assessment tools to energize students and boost learning.

We have also included one set of Speed Stacks Cups, a Stacker Training DVD and a Speed Stacks Instructor Guide which contains a fitness guide, lesson plans and an informational brochure. As you will see, sport stacking not only promotes physical fitness, but also academic learning. Students that sport stack on a regular basis have shown increases in test scores and levels of concentration. This is achieved by students using both their right and left sides of their brain.

This one of a kind course was developed by Lori Smith, 2001 Iowa Elementary PE Teacher of the Year and uses the most recent research available. We hope you find the content relevant and beneficial. Enjoy!
EDMA 272 “Relevant Elementary Physical Education”
Course Syllabus

Course Description

Class participants are expected to become active learners who can demonstrate what they know and are able to apply their knowledge and skills into teaching effective lessons in physical education class that integrate classroom concepts into movement challenges for better learning. Many of our children are kinesthetic learners. It is important that teachers expand learning environments beyond sitting in desks and listening to lectures for memorizing of information. The physical education class is the perfect lab for learning any subject matter. Teachers can learn how to provide more relevance into physical education by adding activities that are cross-curricular. The body plays an integral role in our intellectual processes. Energized and active students learn to remember more and are willing to participate.

It is no more a PE teacher’s fault that this nation has an obesity epidemic than it is the classroom teacher’s fault that some children struggle in reading or other subject areas. It is time that all teachers look at the “whole child” and discover ways to help each child learn to the best of his/her ability! It is our responsibility to start working together so we can set our students up for successful learning. When teachers collaborate in subject areas, they validate the importance of learning those subjects. When students see that two or more teachers discuss similar information, students learn through repetition, and students see the subject as being important.

This course will help you understand the research behind movement and learning and how you can put more relevance into organized, well-managed relevant lessons. You will learn strategies to help anchor learning with a variety of movement-based activities that can be used daily in physical education. In addition, you will read or see activities that teach children how to learn and move at the same time. Exercise can help the brain decrease the amount of mental stress that can cause lapses in learning. You will learn to develop an action plan to creatively implement activities that will easily supplement what you already teach without changing your whole curriculum.
Course Materials

Textbooks


DVDs included in this course

“Sport Stacking with Speed Stacks” Instructor Training DVD

**DVD One**

Module 1: The Benefits of Movement, Physical Activity and Exercise
Module 2: How Movement Facilitates Cognition
Module 3: How Exercise Affects Our Emotional Well-being
Module 4: Rigor and Relevance in Education
Module 5: Understanding What is Being Taught in the Classroom
  "Active Learning: Cross-Curriculum Integration Ideas"
  "Equipment Used to Teach Classroom Concepts in Physical Education"

**DVD Two**

Module 6: (Part 1) Activities That Use Multiple Brains and Two Sides of the Brain
  "Cooperation and Integration Activities"

**DVD Three**

Module 6: (Part 2) “Sport Stacking on the Move”
Module 7: (Part 1) Setting up a Four-part Lesson Plan and Management Strategies

**DVD Four**

Module 7: (Part 2) "Creating a Climate for Success,” Rick Schupbach
Module 8: Becoming the Expert in Your School District
  "Price Lab Teacher Panel"
Module 9: Developing an Action Plan for Integration
Goals and Objectives

The goal of this course is for you to develop a better understanding of movement and learning so you can easily implement integrated classroom concepts into your existing curriculum to enhance the learning of your students.

As a result of completing this course, you will:

- understand what happens to the body and brain when we exercise
- understand the difference between movement, physical activity and exercise
- examine what effects exercise has on learning
- understand the importance of physical education in our schools
- develop an understanding of the New PE
- understand how exercise affects our emotional well-being
- read books or articles that relate to teaching relevant activities in PE
- gain an understanding of what is being taught in the classroom
- view management techniques used by elementary PE teachers
- evaluate a lesson and create your own lesson feedback form in PE
- create lessons and units that are relevant and rigorous in PE
- reflect on your own teaching philosophy
- express your own beliefs and experiences through written assignments
- design an action plan for implementing integrated lesson plans

Replay Questions are the first series of questions in each module, and they are based on the readings and the video presentations. In each module you will find listed the readings and video presentations upon which these questions will be based. These questions will require you to demonstrate the knowledge gained through the readings and DVDs.

Reflective Questions are the second series of questions in each module and are based on applying ideas to your specific teaching circumstances. These questions will require you to apply the knowledge obtained in each module to your personal experiences as a physical educator and to your planning a successful program.

You are encouraged to follow this sequence in using course materials:

1. Read the instructions for each module in this Study Guide, noting the learning objectives and the related questions at the end of each module.
2. View the corresponding DVDs and read the assigned text readings, taking detailed notes on each presentation.
3. Complete the corresponding assignments in the Study Guide.
**Evaluation Criteria** Your coursework will be evaluated based on your ability to accurately reflect on the presentations of “Relevant Elementary Physical Education,” and to apply those concepts to your specific needs and resources. Points are awarded based on your ability to:

- **Respond with insight, clarity and precision** (cite specific text/video passages)
- **Respond in relevant illustrative detail** (include specific, observable examples)
- **Write competently at the graduate level** (word-processed, proofread document)

The nine modules for EDMA 272 “Relevant Elementary Physical Education” are worth a total of 300 points, based on your responses to the replay and reflection questions for each of the modules.

Your final letter grade corresponds with the following percentages of total points earned:

- **A** 90-100%
- **B** 80-89%
- **C** 70-79%
- **D** 60-70%
- **F** 59% and lower

**Completion Procedures** The cover page, word-processed responses to the Replay and Reflective questions, Appendix 3a worksheet and Appendix 3b worksheet are the only portions of your coursework that you need to submit to Drake University for evaluation. You may keep the textbooks, the Speed Stack DVD, and Speed Stack cups/materials.

The DVDs must be returned to: Drake Distance Learning Fulfillment
2730 Graham Street
Ames, IA 50010

You are required to word process your coursework before it is submitted for final grading. The MS Word document “Course Study Guide Answer Pages” is provided for your convenience in word processing. It contains the cover page, answer pages for the assignment questions, the Appendix 3a worksheet and the Appendix 3b worksheet.
Make sure to keep a copy of the final file submitted as a backup. We are not responsible for materials that do not reach our office.

**No printed coursework will be accepted for any reason. Your coursework must be submitted electronically.**

**PLEASE PROOFREAD ALL OF YOUR WORD-PROCESSED RESPONSES CAREFULLY BEFORE SUBMITTING!**

Please follow the submission process outlined in the Drake Distance Learning Center information packet that you downloaded.

**Course Evaluation** Please complete the online Course Evaluation after you have finished your coursework. The link is at the end of the MS Word document “Course Study Guide Answer Pages.” We value your input and will implement your suggestions in future offerings.

If you have any questions please call our office at 1-800-768-3224
EDMA 272 RELEVANT ELEMENTARY PHYSICAL EDUCATION

PLEASE use this sheet as a cover page for your completed Study Guide Assignments

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Drake ID #

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Coaching or Teaching Position Held/Grade Level | Years Taught

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I am enrolled in: Fall 20__
Spring 20__
Summer 20__
MODULE ONE – THE BENEFITS OF MOVEMENT, PHYSICAL ACTIVITY AND EXERCISE

Learning Objectives:
- understand what happens to the body and brain when we exercise
- understand the difference between movement, physical activity and exercise
- examine what effects exercise has on learning
- understand the importance of physical education in our schools
- develop an understanding of the New PE

Reading Assignments:
- Action-Packed Classrooms, Introduction and Ch. 1 “Using Movement in the Classroom,” pp. 1-14
- Spark: The Revolutionary New Science of Exercise and the Brain, Ch. 1 “Welcome to the Revolution: A Case Study on Exercise and the Brain,” pp. 9-33
- Appendix 1

Video Segments:
DVD 1 - “The Benefits of Movement, Physical Activity and Exercise” (L. Smith Intro, 1:02)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
MODULE ONE
Replay and Reflective Questions
(35 points total)

Replay Questions:
1.) Visualize a teacher like Mr. Wilson from Summerford’s book p.6. Describe in three sentences what it might be like to be in that type of classroom as a learner. (3 pts)

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2.) Explain what happens to the brain and body when we exercise. Why would a teacher use movement, physical activity or exercise in the classroom? (5 pts)

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3.) Explain how movement, physical activity, and exercise are different (p. 9 Summerford). Please provide specific examples of activities for each term (See examples in Appendix 1). (5 pts)

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4.) Explain what happened to the students after taking the Zero Hour PE class at Naperville (pp. 9-15 Ratey). Based on what you have read, how would you explain to a classroom teacher the importance of aerobic activity in terms of academic achievement? (5 pts)

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5.) What is the New PE? How did the Naperville PE program change once it adopted the New PE concept? (5 pts)

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Reflective Questions:
1.) How much time does your school have to teach physical education? From the readings and your own personal experiences, what have you discovered about the result of schools cutting back on physical education? (5 pts)

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2.) Interview five children and collect data (provide evidence of those results) about their physical education classes and physical activity outside of the school day (See Appendix 2). Summarize the data you collected. What did you learn about attitudes and exercise patterns from interviewing these children? How will this information change the way you teach or advocate for PE in the future? (7 pts)
MODULE TWO – HOW MOVEMENT FACILITATES COGNITION

Dr. John Ratey, Harvard clinical psychiatry professor and author of A User’s Guide to the Brain, says: “Our physical movements can directly influence our ability to learn, think, and remember. It has been shown that certain physical activities that have a strong mental component, such as soccer or tennis, enhance social, behavioral, and academic abilities. Evidence is mounting that each person’s capacity to master new and remember old information is improved by biological changes in the brain brought on by physical activity. Our physical movements call upon some of the same neurons used for reading, writing, and math.

"Physically active people report an increase in academic abilities, memory, retrieval, and cognitive abilities. What makes us move is also what makes us think. Certain kinds of exercise can produce chemical alterations that give us stronger, healthier, and happier brains. A better brain is better equipped to think, remember, and learn.”

Learning Objectives:
• understand how the brain functions
• identify important research as it relates to moving and learning
• understand how movement enhances learning
• examine other resources related to brain research

Reading Assignments:
• Action-Packed Classrooms, Ch. 2 “About the Brain and Body” and Ch. 3 “Generating Energy and Maintaining Attention,” pp. 15-44
• Spark, Ch. 2 “Learning: Grow your Brain Cells,” pp. 35-56

Video Segments:
DVD 1 - “How Movement Facilitates Cognition” (L. Smith Intro. 0:33)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
MODULE TWO
Replay and Reflective Questions
(40 points total)

Replay Questions:
1.) What is the body-brain (Summerford pp. 17-18)? How does movement affect learning? (3 pts)

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2.) Looking at the research timeline from Chapter 2 in Summerford’s book, choose three research topics that interest you the most. Be specific about the page number and research topic. How does this research impact physical education in the 21st century? (5 pts)

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3.) What is BDNF? Explain how exercise improves learning. (5 pts)
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4.) After reading information about brain research and how exercise can potentially help
the brain function in Chapter 2 of Ratey’s book, describe five activities included in your
current curriculum that you believe enhance brain function. (5 pts)
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5.) Dr. Ratey talks about the importance of repetition. Explain how repetition will benefit the students according to Ratey. (5 pts)

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6.) In Chapter 3 of Summerford’s book, she discusses how to generate energy and maintain attention. Which one of her energizers would you be likely to try and why? What factors affect attention? List the tips she has for using icebreakers. (5 pts)

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Reflective Questions:
1.) Research an article related to movement and brain research published in the last five years, and write a reflection paper on that article as it relates to movement and learning (include references to the article in your paper). (7 pts)
2.) How will the article you summarized in question one impact the way you will advocate and teach PE in the future? Please reference your article and turn in a copy of the article. (5 pts)

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May 2011
MODULE THREE – HOW EXERCISE AFFECTS OUR EMOTIONAL WELL-BEING

Learning Objectives:
- understand what is going on in the brain with ADHD children
- reflect on experiences that were directly involved with the emotional side of learning
- understand the need for movement, physical activity and exercise
- describe how exercise impacts our emotional well-being

Reading Assignments: Read the following chapters from Spark: The Revolutionary New Science of Exercise and the Brain.
Chapter 3 “Stress: The Greatest Challenge,” pp. 57-84
Chapter 4 "Anxiety: Nothing to Panic About," pp. 85-111
Chapter 5 “Depression: Move your Mood,” pp. 113-140
Chapter 6 “Attention Deficit: Running from Distraction,” pp. 141-166
Chapter 8 “Hormonal Changes: Impact on Women’s Brain Health,” pp. 191-216

Video Segments:
DVD 1 - “How Exercise Affects Our Emotional Well-being,” (L. Smith Intro, 0:33)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
MODULE THREE
Replay and Reflective Questions
(20 points total)

Replay Questions:
1.) After reading Chapter 6 from *Spark*, describe the characteristics of an ADHD child. (5 pts)
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2.) Ratey believes exercise is a great way to help with this disorder. What evidence did you read that supports this statement? Reflect on how exercise impacted a child with ADHD in your own PE classes. (5 pts)
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Reflective Question:
1.) Although you will find interesting information in all of the following chapters please choose one of the following chapters in Spark:
   - Chapter 3 "Stress: The Greatest Challenge," pp. 57-84;
   - Chapter 4 "Anxiety: Nothing to Panic About," pp. 85-111;
   - Chapter 5 "Depression: Move your Mood," pp. 113-140; or

Describe how movement, physical activity, and exercise benefited people with these emotions or body changes. Provide evidence of the benefits by providing a specific page number in Spark that discusses the impact. How might you use the information learned in the selected chapter to advocate what you do in PE class that will help with any of these disorders? (10 pts)

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MODULE FOUR – RIGOR AND RELEVANCE IN EDUCATION

Learning Objectives:
• reflect on philosophies of physical education
• examine what rigor and relevance is in education
• understand the basic framework of rigor and relevance
• gain a sense of what each quadrant means
• design activities in the different quadrants as they relate to rigor and relevance in physical education

Reading Assignments:
• *Action-Packed Classrooms*, Ch. 4 “Integrating Movement and Academics” and Ch. 5 “Subject Matter Template Games, “pp. 45-90
• Appendix 3

Video Segments:
DVD 1 - “Rigor and Relevance in Education,” (L. Smith Intro, 1:40)
“Rigor and Relevance” (56:00 + activities)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing. Also complete Appendix 3a worksheet, Rigor and Relevance Activity 1 and Appendix 3b worksheet, Rigor and Relevance Activity 2 at the end of that document.
MODULE FOUR
Replay and Reflective Questions
(31 total points)

Replay Questions:

1.) Focus on pp. 45-51 in Summerford’s book. What does she say about the benefits of integrating? After reviewing the Hierarchy of Learning, explain the value of integrating movement and academics. (5 pts)

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View the Rigor and Relevance training session on DVD One. You will be asked to STOP at certain points to complete the next two activities. You will be referring to Appendix 3 throughout this module.

2.) View Appendix 3a worksheet, Rigor and Relevance Activity 1. After you do the activity, fill out the activity sheet. Please include the Appendix 3a worksheet, Rigor and Relevance Activity 1, along with your final coursework. (5 pts)

3.) View Appendix 3b worksheet Rigor and Relevance Activity 2. Write down your answers for each activity. Give a brief explanation for your rationale after each activity. Please include the Appendix 3b worksheet, Rigor and Relevance Activity 2, along with your final coursework. (5 pts)
Reflective Question:
1.) In three or more paragraphs, write your philosophy of teaching elementary physical education. (8 pts)
2.) Review all of the documents in Appendix 3 to help you understand more about activities that fit the quadrants. Remember, you are looking for ways to improve your instruction. Using the background information you gained as you participated in the Rigor and Relevance training on the Module 4 video, write an activity to fit each of the four quadrants (A, B, C, D) in elementary physical education. These activities might be ones you already have been using. You may use the resources from Action-Packed Classrooms, pp. 51-115, as well as all of the documents from Appendix 3. Appendix 3e will provide you with specific examples. Be sure to cite where you got your activities if they were from the book. (8 pts)
MODULE FIVE – UNDERSTANDING WHAT IS BEING TAUGHT IN THE CLASSROOM

Learning Objectives:
- understand what activities might be taught in a classroom
- understand activities that are taught in different content areas
- develop integrated lesson plans for PE

Reading Assignments:
- *Action-Packed Classrooms*, Ch. 4 “Integrating Movement and Academics” and Ch. 5 “Subject Matter Template Games,” Note: You will be referencing the same chapters that you read for Module 4 in this session.
- Appendix 4 & 5

Video Segments:
DVD One - “Understanding What is Being Taught in the Classroom,” (L. Smith Intro, 1:06)
  “Active Learning: Cross-Curriculum Integration Ideas” (47:52)
  “Equipment Used to Teach Classroom Concepts in Physical Education” (19:17)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
MODULE FIVE
Replay and Reflective Questions
(23 total points)

Replay Questions:
1.) After viewing the “Active Learning Video,” what equipment do you have in your classroom that you could use to teach an integrative activity? (3 pts)

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2.) Which one of Lori Smith’s activities demonstrated in the video could you easily implement tomorrow with the equipment you have in your existing curriculum? If you don’t have the equipment, how could you use your creativeness to adapt the activity to teach the classroom concept? (3 pts)

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3.) Based on the reading from *Action-Packed Classrooms*, choose two activities from the book (cite the page number) from each content area (Math, Language Arts, Science, Social Studies, and Health) and explain what age level you would teach this activity to and why you liked the activity. Briefly discuss what PE standard this activity covers. Use Appendix 4 – National Standards in PE as a reference. (7 pts)
Reflective Questions:

1.) Review a sample lesson in Appendix 5. Interview a classroom teacher in your district and choose a content area(s) (Math, Language Arts, Science, Social Studies, Health, World Languages) for the focus of your activities. Create four activities that you can use in your lesson plans that will address integrative curriculum content into your PE class. Be sure to include the name of the activity, the content area covered, the National Standards (Appendix 4) used in the activity and how to play. If you use any of Summerford’s ideas, please cite the page number. (5 pts)
2.) After watching the video "Equipment Used to Teach Classroom Concepts," choose five activities you would like to implement using stations in your lesson plan. Explain how the activity is played according to what you viewed and also identify the PE concepts as well as academic concept being taught in that one activity. Create one modification for each activity, providing your rationale for those modifications. (5 pts)
“The brain is distributive: this is the social aspect of the brain. We distribute different kinds of information, talents, strength, and weaknesses among the members of our social and learning groups. If we do not know the answer, we rely on someone else in the group who does. One of the main functions of the brain is survival, and we have learned that we survive better in a group. Learning increases when more brains are involved.

What makes us move, makes us think. New learning follows established motor patterns first before it is stored in the cortex. Therefore, if we teach our students to move better, the better thinkers they will become. The brain seeks patterns. Locomotor movements are built on patterns. Information that is arranged in patterns is more easily processed, retained and retrieved. Cross lateralization/crossing the midline – When you cross your midline your brain begins to make new connections and the right and left hemispheres begin to work together. This communication process organizes the brain for better concentration and problem solving. The brain is attracted to novelty. The brain learns best when more of the senses are involved. Color, sounds, music, smells, manipulatives and navigating space are better remembered. Learning environments filled with enriched sensory input enhances cognition. Brain compatible learning perceived as FUN increases success.” (Blaydes-Madigan, 2000)

Learning Objectives:
- understand the purpose of implementing activities that use both sides of the brain
- examine activities that require cooperation
- understand the importance of integrating activities that involve dominant and non-dominant hands
- engage in activities that require the use of both sides of the brain

Reading Assignments: Research articles, Appendix 11a and b
- “Influence of Cup Stacking on Hand-Eye Coordination and Reaction Time of Second-Grade Students,” B. E. Udermann, et. al.
- “A Pilot Study of a Possible Effect from a Motor Task on Reading Performance,” T.A. Uhrich & R. L. Swalm
**Video Segments:**
DVD Two - “Activities That Use Multiple Brains and Two Sides of the Brain,”
   (L. Smith)
   "Cooperation and Integration Activities" (1:00:09)

“Sport Stacking with Speed Stacks” Instructor Training DVD

DVD Three - “Sport Stacking on the Move”

**ADDITIONAL RESEARCH:** There have been case studies done by other professionals. Rick Schupbach did an action research study. The purpose of his study was to examine the time spent in the Target Heart Rate Zone during a cup stacking unit. Here are his results. First, the cup stacking lesson plans used during the study allowed students to remain in the target heart rate zone for enough time to be beneficial to their heart and to gain cardiovascular benefits. Second, females spent more time in the target heart rate zone than males spent in the same target zone. From this study, cup stacking was found to be an aerobic activity if lessons are set up properly.

Dr. Melanie Hart found some empirical evidence in her study that cup stacking does activate both sides of the brain. Participants were fitted with the EEG electrode cap. The configuration of the electrodes followed the standard electrode placement of the International 10-20 system. Participants completed five baseline trials (30 seconds each) in which they were asked to stand quietly looking at the cups with their hands in the starting position. Following the baseline, the participants performed five trials for each of four tasks:

- The cycle stack using both hands
- The cycle stack using only the right hand
- The cycle stack using only the left hand
- The cycle stack using both hands with the Mini Speed Stacks

**Responses to Replay and Reflective Questions:** Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
MODULE SIX
Replay and Reflective Questions
(35 points)

Replay Questions:
1.) After viewing Lori Smith’s video “Cooperation and Integration Activities,” identify and list what subject areas are being taught as children participate in PE. Which one of these activities would you like to implement and why? Describe three cooperative activities you currently use in your curriculum. (5 pts)

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2.) After viewing “Sport Stacking with Speed Stacks” Instructor Training DVD, practice the skills of sport stacking demonstrated. Select video segment 2, “Learning the Basics,” from the main menu of this DVD for your training. Describe how the use of both hands increased your focus and concentration. How important was it for you to engage in repetition to train yourself to become more efficient? (5 pts)

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3.) View video segment one, “Introduction to Sport Stacking” from the “Sport Stacking with Speed Stacks” Instructor Training DVD. List the other activities sport stacking could help improve. (5 pts)

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4.) Read through questions 4 and 5 before viewing “Sport Stacking on the Move.” You will want to take notes. Based on your viewing of Lori Smith’s video “Sport Stacking on the Move,” why do you think this curriculum would be important for implementing in our schools? (5 pts)

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5.) Choose an activity from the “Sport Stacking on the Move” video that addressed these health-related fitness concepts: flexibility (List 4), muscular strength (List 2), or cardiovascular endurance (List 5). Which activities from the video addressed classroom concepts (List 3)? Which activities from the video demonstrated cooperation (List 3)? (5 pts)

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Reflective Question:
1.) Read the two articles in Appendix 11. Briefly summarize what you learned about the effect perceptual and motor skills activities had on hand-eye coordination and reading comprehension. How do you feel these two articles validated the need for more activities that use both sides of the brain? What other activities do you do in your existing curriculum that work on hand-eye coordination and/or ambidexterity (both hands)? (10 pts)
MODULE SEVEN – SETTING UP A FOUR-PART LESSON PLAN AND MANAGEMENT STRATEGIES

Learning Objectives:
- implement the use of a lesson feedback form
- provide feedback on using a lesson feedback form to improve instruction
- develop quality lesson plans that involve a four-part lesson plan format that includes an introductory activity, fitness activities, skill development and culminating activities
- reflect on classroom management strategies in elementary physical education
- understand the importance of smooth transitions in preparing successful lesson plans

Readings Assignments:
- *Action-Packed Classrooms*, Ch. 7 “Organizing Action-Packed Academics in Standards-Based Classrooms” and Ch. 8 “Assessing Action-Packed Academics in Standards-Based Classrooms,” pp.117-142
- Appendices 6, 7, 8 & 9

Video Segments:
DVD Three - “Setting up a Four-part Lesson Plan and Management Strategies,” (L. Smith)
"Setting up a Lesson Plan for Success” (43:20)

DVD Four - "Creating a Climate for Success", Rick Schupbach (44:09)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
Replay Questions:

1.) Refer to Appendix 6a and 6b. Review the lesson feedback form in Appendix 6a as well as the lesson plan in Appendix 6b before viewing “Setting up a Lesson Plan for Success.” Watch the video and use the lesson feedback form 6a. The lesson plan is a little bit longer than my 30-minute lessons to enable me to provide you with more activity ideas on how to integrate classroom concepts. Some of the information may not be present in this video. See what you find as you evaluate this lesson. Having someone evaluate your lesson can help you reflect on parts you might want to change for the future for best practices. Evaluations can improve your teaching experiences. Did you find the form helpful in evaluating a lesson? Why or why not? What adaptations would you make to this form after considering the variables you have in teaching your own classes? (5 pts)
2.) View the lesson plan format in Appendix 7a, and read the materials in 7b to prepare you to write a four part lesson. Write a lesson plan that involves four-parts, include all parts of the lesson you see on the lesson format. You may want to write the lesson in a word document. Review the sample lesson plans in Appendix 8. Include in your lesson plan an introductory/instant activity, fitness activity, lesson focus (what skill is being taught), and a culminating activity that teaches a skill. Be sure to include at least one or more activities that teach a classroom concept. Review the lesson plans in Appendix 8 as a resource. (5 pts)
3.) Review Rick Schupbach’s video entitled “Creating a Climate for Success” found on DVD 4. In this video, Rick demonstrates classroom protocols. In the K-3 segment, list 4 auditory signals Rick uses in his video. List 4 visual signals Rick uses in his video. Name 3 strategies Rick uses to organize how children get their equipment. Explain how Rick’s management strategies change when his students are in 4 and 5th grades. (5 pts)

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Reflective Question:
1.) Review the list of protocols used in Smith’s class in Appendix 9. Design a list of protocols you use during class and how you transition from one activity to the next. Choose an indoor or outdoor setting. (2pts)

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2.) After reviewing Smith’s video and Schupbach’s video as well as ideas from Summerford’s book, discuss 2 or more management strategies or organizational strategies you could implement from each one of these experts. (4 pts)

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3.) Summerford discusses several assessment strategies in Chapter 8. Design a rubric similar to the one in figure 8.1 for a skill or activity you currently teach in your PE curriculum. The assessment is a peer assessment. Be sure to include an explanation of what the scoring means in the rubric just like Summerford does on p. 137. (6 pts)
“Our desire to express ourselves through the musical arts is innate, and its purpose may extend far beyond mere pleasure. Some believe, in fact, that our neurobiological system is virtually dependent upon music for its complete development. Strong evidence supports the value of music in education. Incorporating music into the standard curriculum is about effectiveness, and nourishing learners and their brain for the long haul – a concept that, in the end, may simply develop better citizens for tomorrow.” (Jensen, 2000)

“I use music every day in my classroom. As students are getting organized at the beginning of the lesson, they listen to slower beat music. When it is time to move, I use music that is very upbeat. I find that music motivates the students to move according to the lesson plan. Slower music also calms the students down when they are in their cool-down state at the end of a lesson.” (Lori Smith)

**Learning Objectives:**
- understand the value of movement beyond physical education
- discover equipment that could be used to teach movement
- understand the possibilities of how classroom teachers could feel about the benefits of PE in our schools
- understand how teaching integrated activities can validate what is being learned
- observe how teachers in an entire school work together to teach to the whole child

**Reading Assignments:**
- *Action-Packed Classrooms*, Ch. 5 “Subject Matter Template Games“ and Ch. 6 “Physical Education for Classroom Teachers,” pp. 81-115

**Video Segments:**
DVD Four - “Becoming the Expert in Your School District,” (L. Smith Intro, 0:51) "Price Lab Teacher Panel" (55:15)

**Responses to Replay and Reflective Questions:** Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
Replay Questions:

1.) How did other teachers discuss the value of using music in their classrooms? How could music be implemented into your daily lesson plans? (3 pts)

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2.) Review Summerford’s chapter 6. What are some challenges teachers might face in implementing movement, physical activity and exercise in the classroom? How can your expertise in teaching physical education help teachers overcome those challenges? (3 pts)

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3.) List equipment you have in your department that could be used in a classroom to help with integrating movement. Are there any homemade pieces of equipment you could suggest for your teachers to use? (3 pts)

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4.) Choose 5 activities from Summerford’s Chapters 5 & 6 that you would like to introduce to a classroom teacher. State the page number of where you found your activity. Write an explanation of the health-related fitness component or skill component that would benefit the children during this activity. (5 pts)

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5.) What were the most encouraging comments you remember from the teacher video? How will these comments impact your willingness to try integration or to increase the implementation of integration activities in your physical education program? (5 pts)

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6.) What information from the teacher panel did you find most useful in addressing your administrators, curriculum director or school board about the possibilities of using integration activities in your existing curriculum? (5 pts)

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Reflective Question:
1.) Reflect on how your teachers might respond to your willingness to integrate their content area into your PE classes. What might be your biggest challenge(s) in getting this type of curriculum implemented? What steps can you take to address these challenges? (5 pts)

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MODULE NINE– DEVELOPING AN ACTION PLAN FOR INTEGRATION

Learning Objectives:
- increase an understanding of the importance of physical education
- understand how classroom teachers support physical education
- examine how teachers view the importance of movement, physical activity and exercise in their own classroom settings
- create activities that will use the integration of classroom content into PE activities
- develop an action plan to integrate classroom concepts into physical education

Reading Assignments:
- Spark, Ch. 9 “Aging: The Wise Way” and Ch. 10 “The Regimen: Build Your Brain,” pp. 217-267
- Action-Packed Classrooms, Ch. 9 “Developing an Action Plan,” pp. 143-145
- Appendix 10

Video Segments:
DVD Four - “Developing an Action Plan for Integration,” (L. Smith)

Responses to Replay and Reflective Questions: Use the MS Word document “Course Study Guide Answer Pages” provided for your convenience in word processing.
Replay Questions:
1.) In the assigned reading for this module, Dr. Ratey states “The same things that kill our body kill our brain.” Describe three or more specific examples that support this statement. (5 pts)

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2.) Dr. Ratey describes a life list in the assigned reading. Describe what these “life lists” are and what type of exercise influences each of the life lists he describes. (5 pts)

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Reflective Questions / Action Plan:
1.) Review the questions Summerford asked in Chapter 9 on p. 144. Answer each of the questions followed by evidence of WHY you support your yes or no answer. Refer back to some of the questions answered in previous modules, both books and any DVD to support your answers. (5 pts)
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2.) Describe how your philosophy written earlier could include ideas of an integrated curriculum. Your new philosophy paragraph may include evidence of teaching to the whole child or specific activities you have read about or seen in any of the DVDs in this course. (5 pts)
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3.) Develop a six-day unit plan that describes activities you will use to teach certain skills and supporting culminating activities that will help to anchor learning. See the example in Appendix 10. Use a 4-part lesson plan approach for each day. Describe what activities you will use to integrate classroom concepts (relevance) and where they will be used in teaching the lesson while working on PE concepts. For each activity, explain what National Standard is being met (See Appendix 4). Be sure to include at least one activity for each of the 4 Quadrants A, B, C, and D. Refer back to the Rigor and Relevance framework (Appendix 3c & 3d) as you design your lessons. Summerford’s book as well as the additional resources and websites listed at the end of this module will also give you ideas for creating relevant activities. (20 pts)
4.) Write a draft of a letter you will send to your administrators, curriculum directors or school board members asking them to support your efforts in teaching an integrated curriculum that teaches to the whole child. Include information of what you learned about the benefits of movement, physical activity or exercise, brain research information from either textbook, articles, or DVDs. Think of Ratey’s life lists and the case studies done at Naperville to find your supporting evidence. Include a list of equipment needed and an itemized budget list for equipment to initiate these new concepts into your program. Refer to some of your PE catalogs to get prices or ideas of what to purchase. Provide a rationale for including these activities or equipment into your curriculum. (20 pts)
COURSE EVALUATION

Please click on this link, http://drake.qualtrics.com/SE/?SID=SV_9NU7ir8noyMxjZb to complete the online Course Evaluation for:

EDMA 272 Relevant Elementary Physical Education

We value your opinion and will use your comments in future offerings. Thank you!

Note: If clicking on this link does not open your browser and take you to the survey, copy and paste the URL into the address bar of your browser. If you are using Internet Explorer and the link does not work, please try a different browser.
Resources


Websites

http://www.braingym.com/
http://brainconnection.positscience.com
http://www.choosykids.com/
http://www.abllab.com/
http://www.take10.net/
http://learn.fi.edu/learn/brain/exercise.html
http://www.generationfit.org/
http://www.xavix.com/
http://exerlearning.blogspot.com/
http://www.wittfitt.com/  (Benefits)
http://www.bal-a-vis-x.com/
Appendix 1

Examples of concepts:

Movement = Students will perform non-locomotor movements like bending, twisting and stretching in a personal space.

Physical Activity = Students will perform animal movements in general space.

Exercise = Students will participate in an activity that requires cardiovascular endurance and muscular strength like 4 corners (Cone 1 = jumping jacks, run, Cone 2 = sit-ups, gallop, Cone 3 = toe touches, skip, Cone 4 = crab kicks, walk) for 5 minutes.
Appendix 2

Collecting PE Data from Students

1.) What are your favorite physical activities?

2.) How many of these physical activities do you participate in at school?

3.) How many of these physical activities do you participate in at home?

4.) Who do you participate with at home? (siblings, parents, friends)

5.) Do your parents exercise on a regular basis?

6.) Do you enjoy physical education? Why or Why not?

7.) What is your favorite part/unit in Physical Education?

8.) What is your least favorite part/unit in Physical Education?

9.) How often would you like to have physical education?

10.) What activities would you like us to include in our Physical Education Curriculum?

11.) Estimate how much time you spend being physically active each day. Do you believe this is enough time for you to be physically fit for your age group?

12.) Does the amount of time differ from the weekend and during school days? Explain your answer.

13.) If you were in charge of PE in your school, what would you add, get rid of or change in your existing program in your elementary school?

14.) What do you think about learning classroom concepts such as spelling, math, reading, science or social studies while your body is moving?
Appendix 3a

Rigor and Relevance Activity 1

Rigor --- Rank these in order:

_____ Analysis
_____ Knowledge
_____ Application
_____ Evaluation
_____ Synthesis
_____ Comprehension

Relevance --- Rank these in order

_____ Apply in one discipline
_____ Apply in real world predictable situations
_____ Knowledge in one discipline
_____ Apply in real world unpredictable situations
_____ Apply across disciplines

Explain your decision for your ranking.

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Appendix 3b

Rigor and Relevance Activity 2

Question 1
Music
Your Vote: Circle one: Quadrant A B C D
Why?

Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses?
Circle one: YES or NO

Question 2
Social Studies
Your Vote: Circle one: Quadrant A B C D
Why?

Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses?
Circle one: YES or NO

Question 3
Science
Your Vote: Circle one: Quadrant A B C D
Why?

Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses? Circle one: YES or NO

Question 4
Citizenship
Your Vote: Circle one: Quadrant A B C D
Why? ____________________________________________

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Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses?
Circle one: YES or NO

Question 5
Language Arts
Your Vote: Circle one: Quadrant A B C D
Why? ____________________________________________

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Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses?
Circle one: YES or NO

Question 6
Art
Your Vote: Circle one: Quadrant A B C D
Why? ____________________________________________

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Did you agree or disagree with the majority of participants?
Circle one: YES or NO
Did you change your vote after hearing the participants’ responses?
Circle one: YES or NO
Appendix 3c

Rigor/ Relevance Framework™

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<td>1. Knowledge in one discipline</td>
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<td>2. Apply knowledge in one discipline</td>
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<td>3. Apply knowledge across disciplines</td>
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<td>5. Apply knowledge to real-world unpredictable situations</td>
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A  
Acquisition  
Application

B  
Application

C  
Assimilation

D  
Adaptation

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## Appendix 3d
### Rigor and Relevance at a Glance

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| A | Instructional activities are designed to facilitate concept development. Students are expected to analyze information; synthesize multiple inputs from a variety of sources and evaluate alternatives (i.e., options, data, opinions, articles, reports) on the basis of their validity, justification, and logic.  
|   | The main goal of the task is a deep, rich understanding of the content in one discipline.  
|   | Students are usually asked to explain their knowledge or skill.  
|   | The majority of the assessments are multi-step problems, original student work (i.e., essays, presentations, portfolios or artistic endeavors), or questions requiring critical thinking, new connections between content in the discipline, and have multiple possible answers. | The main goal of the task is deep understanding of the content and the connections between the content and other disciplines in a rich and varied manner.  
|   | Students are usually asked to create unique solutions by applying their knowledge to real-world problems or situations that cross discipline boundaries.  
|   | Assessments are used to stimulate provocative solutions, innovative connections between disciplines, and are centered on real-world issues.  
|   | The majority of the assessments are performance-based and involve multi-step problems, original work (i.e., essays, presentations, projects, proposals, portfolios, artistic endeavors, or models), or thought-provoking questions requiring critical thinking, new connections between disciplines, and whose answers are dynamic and individual to the student. |
|   | The main goal of the class is content knowledge delivery in one discipline.  
|   | Students are required to do little deep thinking on their own and most connections have been discussed in class.  
|   | The majority of the assessments require students to reiterate facts, opinions, and/or connections that were discussed in class. | Instructional activities are designed for conceptual development with the students applying this knowledge across disciplines or in real world situations.  
|   | The main goal of the task is an understanding of the content, its application in real-world situations, and its connections to other disciplines.  
|   | The majority of assessments are performance-based and require students to apply content knowledge across disciplines to address real-world problems. |

Created at Price Laboratory School based on International Center for Leadership in Education
Quadrant A
• Represents simple recall & basic understanding of knowledge for its own sake.
• Students gather and store bits of knowledge and information.
• Students are primarily expected to remember or understand this acquired knowledge.
• Example: Conduct experiments to observe the properties of acids and bases.

Low Rigor – Low Relevance

Quadrant B
• Students use acquired knowledge to solve problems, design solutions, and complete work.
• The highest level of application is to apply appropriate knowledge to new and unpredictable situations.
• Example: Test the pH of various household items and make generalizations about which types of products tend to be acids and which tend to be basic.

Low Rigor – High Relevance

Quadrant C
• Represents more complex thinking but still knowledge for its own sake.
• Students extend and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create unique solutions.
• Example: Conduct tests on a number of samples of acids and bases to determine the general properties of acids and bases.

High Rigor – Low Relevance

Quadrant D
• Students have the competence to think in complex ways & to apply knowledge and skills they have acquired.
• Even when confronted with perplexing unknowns, students are able to use extensive knowledge & skills to create solutions & take action that further develops their skills & knowledge.
• Example: Design your own experiment to determine which brand of antacid neutralizes the most stomach acid and present your results as a “Consumer Reports” type article.

**High Rigor – High Relevance**
Appendix 3e

PHYSICAL EDUCATION UNIT ACTIVITY MAP *

Knowledge/Awareness

• Cooperative Group Learning
• Analyzing Fitness Scores

Application

• Application of skill in a game setting
• Skill Practice
• Terms/Vocabulary (Ex. cardiovascular exercise)
• Intro/Warm-up activities

Evaluation

• Write a letter to your principal on justifying the need for PE in your school.
• Track steps on pedometer for 1 week and justifying whether they get enough physical activity
• Creation of New Game/Sport

Synthesis

• Revising activities (tag games) that can be played at recess or after school
• Goal Statements
• Engaging in Lifelong Physical Activities
• Cross curricular activities (States & Capitals Tag)

Analysis

Knowledge in one discipline

Apply in one discipline

Apply across disciplines

Apply in real world predictable situations

Apply in real world unpredictable situations

Created at Price Laboratory School based on materials from the International Center for leadership
Appendix 4


National Standards for Physical Education

Physical activity is critical to the development and maintenance of good health. The goal of physical education is to develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity.

A physically educated person:

Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.

Standard 2: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.

Standard 3: Participates regularly in physical activity.

Standard 4: Achieves and maintains a health-enhancing level of physical fitness.

Standard 5: Exhibits responsible personal and social behavior that respects self and others in physical activity settings.

Standard 6: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.
Appendix 5

Integration Activity
Grade Level: 4th-6th Grades

Content Area: Social Studies

Objectives: Students will be engaged in sustained moderate physical activity; students will perform proper locomotors in general space; students will recall states and capitals; students demonstrate cooperation in their groups.

National Standards:
Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.

Standard 4: Achieves and maintains a health-enhancing level of physical fitness.

Standard 5: Exhibits responsible personal and social behavior that respects self and others in physical activity settings.

Standard 6: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

Name of Activity: Group States

Equipment needed: A visual with all states and capitals, music, colored jerseys/pinnies, pedometers

How to play: (5 to 7 minute activity): When the music starts, the leader chooses a state and the students in that group have 3 tries to guess what the capital is of that state. When the music starts, the states and capital information is passed to the next person in line and a new locomotor movement is called. Switch until all students have been the leader.

Assessment: (How will you measure your objectives) Performance-based – I will observe students moving in general space as they perform different locomotor movements and give feedback on correct form as needed. I will observe students taking turns in their groups. I will hear students recalling proper states and capitals in their groups and give support as needed. Pedometers – I will use pedometers to measure their sustained moderate physical activity. In a 5 minute activity they should have 300-500 steps or more on their pedometers.
## Price Lab School/Lori A. Smith
### Physical Education Lesson Feedback Form

<table>
<thead>
<tr>
<th>Organization --</th>
<th>Comments:</th>
<th>Time:</th>
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</thead>
<tbody>
<tr>
<td>A lesson plan was written and given to evaluator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dressed professionally</td>
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</tr>
<tr>
<td>All equipment was set up ahead of time</td>
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<tr>
<td>Equipment was easily accessible</td>
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<tr>
<td>Came to class at least 15 minutes ahead of time</td>
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**Introductory Activity --**

<table>
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<th>Time:</th>
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</thead>
<tbody>
<tr>
<td>Students were directed to follow class protocols</td>
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<tr>
<td>Voice projection</td>
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<tr>
<td>Students were in a freeze position during instruction</td>
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<tr>
<td>Pre-grouping was evident</td>
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<tr>
<td>Use of technology was used for assessment</td>
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<tr>
<td>Demonstrated enthusiasm with the students</td>
<td></td>
</tr>
<tr>
<td>Demonstrated &quot;changed face&quot; when re-directing</td>
<td></td>
</tr>
<tr>
<td>Used counting to get students started</td>
<td></td>
</tr>
<tr>
<td>Teacher provided positive reinforcement</td>
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</tr>
<tr>
<td>Safety and boundaries were stated</td>
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<tr>
<td>All students could participate and move</td>
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<thead>
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<tbody>
<tr>
<td>Students were told what to do and where to go</td>
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<tr>
<td>Students were told how to freeze bodies or equipment</td>
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<td></td>
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<tr>
<td>Teacher counted to get students organized</td>
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<tr>
<td>Told students formation -- scattered, partners, groups, where</td>
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**Fitness Activity --**

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<tr>
<td>Demonstrated enthusiasm with the students</td>
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<tr>
<td>Demonstrated &quot;changed face&quot; when re-directing</td>
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<tr>
<td>Visual demonstrations were used</td>
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<td>Purpose was identified</td>
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<td>Positive reinforcement/objective/subjective feedback</td>
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<td>Told students formation -- scattered, partners, groups, where</td>
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**Lesson Focus --**

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<tr>
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<td>A skill was taught using &quot;nuts and bolts&quot;</td>
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<td>Learning cues were discussed</td>
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<tr>
<td>Teacher provided brief, detailed instructions of each activity</td>
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<tr>
<td>Visual demonstration was used to teach the skill</td>
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<td>All students were given opportunities to practice skills</td>
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<tr>
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<td>Safety and boundaries were stated</td>
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<td>Positive Reinforcement/objective/subjective feedback</td>
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<td>Teacher rotated around to most/all students</td>
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<td>Teacher emphasized &quot;purpose&quot;</td>
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<tr>
<td>All students could participate and move</td>
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**Transition --**

| Students were told what to do and where to go |
| Students were told how to freeze bodies or equipment |
| Teacher counted to get students organized |
| Told students formation -- scattered, partners, groups, where |
| Teacher provided positive reinforcement |

**Culminating Activity --**

| Voice projection |
| Demonstrated enthusiasm with the students |
| Demonstrated "changed face" when re-directing |
| Students were in a freeze position during instruction |
| Safety boundaries were stated |
| Activity involved skills taught in lesson focus |
| All students participated and encouraged to cooperate |
| Teacher reminded students of all of the learning goals |
| Positive reinforcement/objective/subjective feedback |
| Teacher rotated around to most/all students |

**Extras**

| Objective Feedback was given during most of the lesson |
| Use of "integration" activities (classroom concepts) |
| Stopped lesson for a "teachable moment" |
| Used Music |
| Students helped set up equipment or put it away |
| Use of technology was used for assessment |
| Multiple instructional strategies were used |
| Made a creative change that enhanced the lesson |

**Comments:**

**Time:** May 2011
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**Objectives:**
- Students will participate in sustained moderate physical activity.
- Students will learn the rules of PE class and demonstrate them during the lesson.
- Students will move in general space without running into others. Students will stop and start on signals.
- Students will throw using opposition and proper catching/cushion.
- Students will demonstrate how to get equipment and how to put equipment away safely.
- Students will demonstrate caring and cooperation. Math concepts.

**Introductory Activity (3-5 Min.)**

**Music**

Pedometers and Walking--into groups
Review the proper way to throw a ball
Groups will spread out and pass to each other. When the music stops, whoever has the ball is the leader. The leader will perform a locomotor movement in general space and the group will follow. Restart until the music starts...leaders lead new locomotors -- try to get everyone it.

**Fitness Activity (3-5 Min.)**

**Music**

Odd and Even Tag -- Students will get into partner formation. If name is called, you're it. If tagged, two jumping jacks before chase. If friends is called, move in general space until music stops...repeat.

**Lesson Focus (10-15 Min.)**

**Music**

- Partner Throwing and Catching -- Pass to partner
  One partner throws as far as he can and partner will chase and bring back. Switch roles.
- Partners pass until music stops "Switcheroo find someon new.
- Number Rally Reporters -- one partner stays while the other partner rolls 2 dice. Report the number and complete the passes need to complete the task. Switch roles
- Group Relay -- Line up in a straight line apart from each other. Person 1 passes to person 2 to person 3 to person 4 or more. All must run the end line and touch the line and jog on the outside and change the order. Work together on proper force and distance for throwing. How many touchdowns!

**Culminating Activity (5-10 Min.)**

**Music**

5 Passes -- Teams will try to get 5 passes. If five passes are completed before an interception or ball drop, score one point. If ball is dropped, goes out of bounds or is intercepted, the defense takes
Can run with the ball -- no tags. If there is a touchdown, the opposing team will go the other way starting at the half circle. Use all team members... be vocal. Encourage teamwork, sportsmanship, strategy, and proper throwing and catching.

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| **Evaluation:** |
Malcolm Price Laboratory School
Elementary Physical Education
Lesson Plan Format

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**Transition:**

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**Transition**

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**Transition**

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<tr>
<th>Evaluation/Reflection:</th>
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</table>
Appendix 7b

Setting up a lesson
Lori A. Smith
Malcolm Price Laboratory School

Introductory Activity:
- This part should last about 5 minutes. It can be an activity that attracts the students’ attention to let them know they are in physical education class. Sometimes it is a warm-up activity to the fitness activity. It does not need to be directly related to the entire lesson. Just get the kids moving and learning. This a great time to integrate classroom concepts.

Fitness Activity:
- This part should be about 5-8 minutes. It should be an activity that all students can be participating in where they are moving the majority of the time and getting their heart rates increased. This may be a tag game, running, locomotor movements or jumping rope, etc.

Lesson Focus:
- This is the main part of the lesson. It has a purpose. All of the children should be participating and active. This part should be about 15-20 minutes. What are you trying to teach? This might be a time to practice a skill, manipulative activity, rhythm activity or if you have spent ample time on a skill in prior days, you might introduce a game during this time.

Culminating Activity:
- This part of the lesson should last about 5-10 minutes. You can use this time to bring closure to you class or you might introduce a game here after the skills were practiced in the lesson focus. It might be a time to just get children to shake hands for sportsmanship after a game or just enough time for the students to line up. You might do an activity that does not require a lot of physical activity so the students can unwind before returning back to their classroom teachers. This is also a good time to collect any data you need for the class.
HELPFUL HINTS FOR PHYSICAL EDUCATION TEACHERS
Lori A. Smith
Malcolm Price Laboratory School

- Most of your behavior problems come from the teacher’s lack of organization and not setting high enough expectations for your students. Be specific in explaining what you want your students to know and do. Never assume that your students know how to do anything, even if you know they have done an activity before. Everyone forgets every now and then.

- Have your equipment set up before your students come to class.

- Plan ahead. Think about how you want your students to get from point A to point B during the lesson without chaos. Think of creative ways to get your students into partners or teams before hand.

- Be enthusiastic, it is contagious.

- Write daily lesson plans and keep researching. Continue to go to your professional organizations to get new ideas and whenever possible, buy books that include different activities. Learn from other people’s philosophies. Never stop learning.

- Always have your students clean up the equipment being used. You already spend a lot of time planning and setting up so it is nice to have that extra help. This practice also teaches your students responsibility.

- Remember to discuss safety before you start any activity.

- Keep as many students active as you possibly can at one time. Modify your rules by using more equipment, increase the boundaries, make more teams, etc. Develop activities where students can feel a sense of accomplishment or they can feel good about themselves.
<table>
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<th>Grade</th>
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<td>Standards</td>
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</table>

Objectives:
- Students will participate in sustained moderate physical activity.
- Students will learn the rules of PE class and demonstrate them during the lesson.
- Students will move in general space without running into others. Students will learn to stop and start on signals. Students will demonstrate control dribbling using feet. Work on trapping skills.
- Students will demonstrate how to get equipment and how to put equipment away safely.
- Students will demonstrate caring and cooperation.

Introductory Activity (3-5 Min.)
Music
Pedometers and Walking

Roller Exercises -- Students will roll a dice in the middle to determine how many exercises they will perform. Once he/she visits the three stations and performs the movement 6 times, he/she will return to the middle to see how many to perform again by rolling the die.

Fitness Activity (3-5 Min.)
Music
Heads and Tails tag -- 1/2 are heads and 1/2 are tails. One hand on the head for heads and one hand on the mid back section for tails. Try to tag other team. If tagged, join the other team.

Lesson Focus (10-15 Min.)
Music
Nuts and Bolts of foot dribbling and trapping
Use the inside of foot
Keep ball close to the body - 3 seconds to trap
Trap using the ball of foot
Nuts and Bolts of Foot Trapping and passing

Hot Potato Passing -- Partners will pass back and forth. If the music stops, person with the ball must dribble away before partner takes the ball with foot (Safety -- Keep ball close to the body and be aware of others in general space.) If partner gets ball -- chase again. Start music and begin passing again.

Culminating Activity (5-10 Min.)
Music
Pirates -- Have 2 teams be the pirates. They must guard the pirate's cove with only 2 pirates. One pirate can be in the cove to guide the balls. The other pirates will be moving in general space trying to get the other team's ball to dribble back to the cove. Balls can be taken back by the foot. When a ball is in the cove, it must stay there. Switch pirates often.

<table>
<thead>
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<tbody>
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<th><strong>Assessment:</strong></th>
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## Appendix 8b

### Malcolm Price Laboratory School
### Elementary Physical Education
### Lesson Plan Format

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### Objectives:
- Students will participate in sustained moderate physical activity.
- Students will learn the rules of PE class and demonstrate them during the lesson.
- Students will move in general space without running into others. Students will learn to stop and start on signals.
- Students will throw using opposition. Catch = hands and eyes ready.
- Students will demonstrate how to get equipment and how to put equipment away safely.
- Students will demonstrate caring and cooperation during group activities. Utilize the team.

#### Introductory Activity (3-5 Min.)
**Music**

- Pedometers and Walking
- Jerseys
- Field Participant Teaches 3rd

- Partner Flag Tag -- only pull partner’s flag --- Teacher will cue when to tag

#### Fitness Activity (3-5 Min.)
**Music**

- Flag tag -- Call a color of flags to be it. They will collect as many flags as possible until their time is up. If flags are gone, walk around the outside until the game switches taggers. Take time to put flags back on during transitions.

#### Lesson Focus (10-15 Min.)
**Music**

- Nuts and bolts of throwing footballs
  - Finger placement -- point down, point out and throw
  - Opposition and follow through to target.

- Partner Passing -- Partner will pass and catch until the music stops. When the music stops, whoever has the ball will run with ball tucked. If a flag is taken, partner will give the ball up and put their flag on to become the next tagger. Eyes forward!!!
- Partner Pass Patterns -- In, Out, Flag, Post, Curl
- Partner centering and passing
- Partner centering, passing, hand-off and pass again.

#### Culminating Activity (5-10 Min.)
**Music**
Catch and Tag -- Have a quarterback line and a receiver line-- receivers go out for a pass and turn to the quarterback. When Q sees the R face, the ball is thrown. The R tries to get back to the line before the Q tags the R. Switch lines each time.
Clean up -- all flags are sorted on piles and pedometers are collected.

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| Evaluation:           |
Appendix 8c

Malcolm Price Laboratory School
Elementary Physical Education
Lesson Plan Format

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Objectives:
- Students will participate in sustained moderate physical activity.
- Students will learn the rules of PE class and demonstrate them during the lesson.
- Students will move in general space without running into others. Students will learn to stop and start on signals.
- Students will demonstrate how to get equipment and how to put equipment away safely.
- Students will demonstrate caring and cooperation.
- Parachute exploration with freeze positions.
- Tossing/throwing catching skills intro

Introductory Activity (3-5 Min.)
- Pedometers and Walking
  - Sun and Sunscreen -- stay away from sun and stay close to the sunscreen.
  - Locomotor Express = 25 = walk, 55 = run, Bumpy Road = Skip, Horse = gallop, flat tire = hop
  - Stuck in the mud = run in place, low bridge = crawl, Wind Shield wipers = jumping jacks
  - Car Pool = move with a partner

Fitness Activity (3-5 Min.)
- 3-4--5 -- Odd and Even Tag -- Partners Back to Back -- JJ to move
- K - Move and freeze -- find partners and know lost and found!
- K-2 -- Squirrels and Trees -- Choose foxes by color -- cooperation and safety

K -- the teacher is the fox!

Lesson Focus (10-15 Min.)
- Color Fitness Cones -- Students will move in general space and then find a dot. Find a cone that matches that color and return to the middle circle for marching and then repeat.
  - Work on sequencing colors -- 2 dots, 2 different cones, 3 dots, 3 different cones.

K-5 -- All get a ball -- freeze positions -- toss and catch -- freeze positions -- throw and fetch - freeze positions -- can try different locomotors in general space.

Culminating Activity (5-10 Min.)
- Partner Find & switcheroo find someone new -- Toss and catch a ball -- Freeze positions, throw or roll can be options. Try for 5 in a row. Find new people.
- Group passing -- person with the ball can lead the group in a follow the leader.

May 2011
Parachute Fun -- Waves, inflate, exercises, mountain
4-5 -- Waves, merrygoround, mountain, Lifeguard
Record Steps and walk to the door! 5th Grade to work on putting equipment away and procedures

| Equipment: | Jerseys, Pedometers, Music, Cordless Microphone, Stars, Cones
|           | Hula hoops, parachute, dots, yarn balls |

| Assessment: | Teacher Observation
|             | Pedometer Recordings |

<p>| Evaluation: |</p>
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<td>Students will participate in sustained moderate physical activity.</td>
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<tr>
<td>Students will learn the rules of PE class and demonstrate them during the lesson.</td>
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<tr>
<td>Students will move in general space without running into others. Students will learn to stop and start on signals.</td>
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<tr>
<td>Exploration of hand-eye coordination with Bean bags.</td>
</tr>
<tr>
<td>Students will demonstrate how to get equipment and how to put equipment away safely.</td>
</tr>
<tr>
<td>Students will demonstrate caring and cooperation. Letter recognition for integration.</td>
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**Introductory Activity (3-5 Min.)**

Music

Pedometers and Walking
Assign Jersey Colors

Letter Find -- Students will roll the letter dice to see what letter to search for and then roll the number dice to see what locomotor movement will be used to find the letter.

**Fitness Activity (3-5 Min.)**

Music

ABC-- Tag -- Call its---if tagged, freeze and make the shape of a letter. Other people have to guess your letter to get you free….3 guesses before telling

**Lesson Focus (10-15 Min.)**

Music

Bean Bag Exploration--
Balance on body parts
Balance and move in general space different body parts (speed and levels)

Thank You Game -- Respect and cooperation -- students will move in general space while balancing the bean bag. If bean bag falls off, stop and freeze until someone helps. Say "Thank You"!

Tossing -- Hand-eye coordination -- Toss the bean bag and catch with two hands toss, clap and catch.

**Culminating Activity (5-10 Min.)**

Music

Bean Ball -- Toss the bean bag at the ball and try to get the ball to move across the floor. Students should step with opposite foot and demonstration follow through (2 seconds).
See how many times you can get the ball to go to each side of the play area using only the bean bag and tossing skills to move the ball.

**Equipment:**
Jerseys, Pedometers, Music, Cordless Microphone, Dots, Cones  
Bean Bags, hoops, dice, cone caps

**Assessment:**
Teacher Observation  
Pedometer Recordings  

**Evaluation:**
### Lesson Plan Format

**Malcolm Price Laboratory School**  
**Elementary Physical Education**

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
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<tbody>
<tr>
<td>Gym</td>
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</table>

#### Objectives:  
Students will participate in sustained moderate physical activity.  
Students will learn the rules of PE class and demonstrate them during the lesson.  
Students will move in general space without running into others. Students will learn to stop and start on signals.  
Students will throw using opposition.  
Math Concepts for integration.  
Students will demonstrate how to get equipment and how to put equipment away safely.  
Students will demonstrate caring and cooperation.  
3-5 will work on throwing with opposition.

### Introduction Activity (3-5 Min.)

**Music**  
**Pedometers and Walking**

Dice Locomotors -- Students will each have a die. When the music starts, each will roll his/her die. Look at the cone caps to decide which locomotor movement will be used in general space.

### Fitness Activity (3-5 Min.)

**Music**

Odd and Even Tag -- Students will start in partner formation. Decide which partner is odd or even. Students will move around in general space until the music stops. When the music stops, go back to back. Teacher will give numbers or math problems to decide if the number or sum is odd or even. The person who is called, is it…and they will tag only their partner after performing two jumping jacks. Repeat every 10-15 seconds.

### Lesson Focus (10-15 Min.)

**Music**

Throwing and catching --  
Step with opposite foot and follow through.

- **Switcheroo Find Someone New** -- Start in partner formation. Students will throw and catch the ball back and forth using opposition and follow through. When the music stops, find a new partner and see how many catches can be made. Partner assessment for opposition and follow thru.  
- **Number Rally Reporters** -- One partner starts by tossing ball to self while the other partner rolls two dice. The partner who rolled dice will report the number to tossing partner and add the numbers together to see how many throws should be made. Switch roles each time.

### Culminating Activity (5-10 Min.)

**Music**

5 Passes -- Divide the class into six teams. Two teams will play against each other. The object of the game is to try to throw and catch a ball to your teammates 5 times in a row. Once 5 passes
are made, the team is awarded one point and the possession goes to the opposing team. If
the ball goes out of bounds, or is dropped or is intercepted, the opposing team takes possessions and
starts their 5 passes series. See how many points can be made with cooperation and teamwork!

**Equipment:**
Jerseys, Pedometers, Music, Cordless Microphone, Dots, Cones
Dice, Movement cone caps, gator balls

**Assessment:**
Teacher Observation
Pedometer Recordings

**Evaluation:**
Malcolm Price Laboratory School  
Elementary Physical Education  
Lesson Plan Format

<table>
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<td>1/16/2008</td>
<td>Gym</td>
<td>1, 2, 5, 6</td>
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**Objectives:**

Students will learn the rules of PE class and demonstrate them during the lesson.

Students will move in general space without running into others. Students will learn to stop and start on signals. Students will dribble with one hand and both, use hand eye coordination and demonstrate safety when dribbling a ball.

Students will demonstrate caring and cooperation.

**Introductory Activity (3-5 Min.)**

**Music**

Pedometers and Walking

Delivery Relay -- Animal rescue -- have students perform different locomotor movements to deliver the bean bags. Can only take one at a time. Work on balancing too.

**Fitness Activity (3-5 Min.)**

**Music**

Bridge Tag -- Call a group to be it. If tagged, stand with hands up. Another person will attach to make a bridge and then yet another person will move under the bridge to free the group. Change its.

**Lesson Focus (10-15 Min.)**

**Music**

Hand Dribbling

Nuts and Bolts of Ball Handling and Dribbling

• PS -- Moving the ball around the body
• PS -- toss and catch, clap and catch
• Dribble on PS -- Ball low, use finger tips and push

Forward, Backward, Sideways, Fast, Slow, High, Med, Low, Kneel, Back and Forth, Balance and dribble, Touch a wall.

• Freeze Song -- Dribble in PS then freeze.
• 3 Second Freeze Game in GS
• 100 Dots -- Dribble 10x's on each dot then move to another dot until 101 dribbles are performed.
• Color Dribble -- Stop on a dot and dribble to each cone that matches that dot. Touch top of cone!

**Culminating Activity (5-10 Min.)**

**Music**

Cooperation

• Save the Animals -- Put all bean bags in the middle circle. Students must try to dribble to the middle pick up a bean bag and dribble it back to the correct hoop.
| **Equipment:**  
| Pedometers, Music, Cordless Microphone, Stars, Cones  
| Basketball, Dots, Bean Bags  
| **Assessment:**  
| Teacher Observation  
| Pedometer Recordings  
| Partner Feedback on care and cooperation!  
| **Evaluation:** |
Appendix 9

Protocols for Class
Lori Smith – Price Lab School
Elementary PE

Equipment:
Cones will be set up around the basketball court on E, N & S sides of gym. Six primary colored markers will be set up on the S side of gym. Colored jerseys will be separated into colors. Pedometers will be spread out on the end line near the markers. All equipment will be out and accessible to the students in the out of bounds areas. Music will be ready to play when students enter the gym.

Protocols:

1.) Students enter the gym walking to slower tempo music.
2.) 1st-5th grade will get pedometers on and then talk and walk with a friend.
3.) Kindergarten students will walk in and line up for jerseys.
4.) 1st-5th will line up by the teacher to get their jerseys assigned.
5.) Teacher will randomly assign jerseys so teams will have equal skill or gender balance.
6.) Students will march in place near their marker in a single file line on the south side of the gym.
7.) Teacher will say “silent steps in 3” and students will march faster and sit in listening position.
8.) Students will sit with legs crossed and hands on their knees.
9.) Students listen for instructions for the introductory activity of the lesson.
10.) The first activity may require a visual demonstration and questions are answered.
11.) Students play the first activity to music.
12.) Transition: students will meet on the south side in teams near their marker.
13.) Teacher says, “silent steps in 3” and students will march faster and sit in listening position.
14.) Students will sit with legs crossed and hands on their knees.
15.) Students listen for instructions for their fitness activity.
16.) Students will play their second activity to music.
17.) Students will march in place near their marker in a single file line on the south side of the gym.
18.) Teacher will say “silent steps in 3” and students will march faster and sit in listening position.
19.) Teacher will discuss the skill development part of the lesson using visual demonstrations.
20.) Teacher will demonstrate freeze position before students get their equipment.
21.) Students will get their equipment as teacher announces colored jerseys.
22.) Students will get equipment and perform their skill to music alone, in partners or in small groups.
23.) Students will freeze equipment each time an activity changes and directions are given.
24.) Transition: students will meet on the south side in teams near their marker.
25.) Teacher says, “silent steps in 3” and students will march faster and sit in listening position.
26.) Students will sit with legs crossed and hands on their knees.
27.) Students listen for instructions for the culminating activity of the lesson.
28.) Groups will be assigned to a certain area in the gym based on the activity.
29.) Students will perform the last activity to music.
30.) For closure, students will clean up equipment in an organized manner.
31.) Students will march on the end line and sit on “silent steps in 3” as teacher views their pedometers. Scores are recorded when necessary.
32.) Once students discuss the lesson or activities, they will put their jerseys on the appropriate pile and line up at the door without pushing or shoving.

**Management Strategies:**
Positive Reinforcement, counting down, pre-grouping, preventative prompts, established freeze positions, Give me 5, Listening positions, Personal Space/General Space, Stop Music and Freeze
Appendix 10

Name: Lori Smith
Content Area/Course: Physical Education
Grade Level: 4th and 5th

Throwing and Catching

National Standards Addressed
1. Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.
2. Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
3. Participates regularly in physical activity.
4. Achieves and maintains a health-enhancing level of physical fitness.
5. Exhibits responsible personal and social behavior that respects self and others in physical activity settings.
6. Values physical activity for health, enjoyment, challenge, self-expressions and/or social interaction.

Activities

Day 1: Throwing

- Introduction Activity: Paper Plate Aerobics – students read a paper plate and perform the locomotor on that plate when the music stops. Choose different locomotors (1, 4)
- Fitness Activity: Fastest Tagger – teacher chooses a group to be it. One at a time a tagger tries to tag as many people as possible. If tagged, join the marching line to be the next fastest tagger. Try to get everyone to be tagged eventually. (1, 4, 5)
- Lesson Focus: Goal Statements, Skill Practice, & Wear your Partner Out -- Teach the nuts and bolts of how to throw. Individual practice and then partner practice. Wear your partner out – students will be in partner formation. One partner throws as far as they can, partner retrieves and throws once he/she returns back to original line. Partner 2 then throws. Always do a jumping jack before returning for safety – see ahead. (1, 2, 4, 5)
- Culminating Activity: Protect the Kingdom – Choose two teams on opposite sides of gym. Must keep all balls out of the 3 point area. Only throwing skills can be used. Team 3 and 4 are retrievers in the endzone. Throw ball back to teams on your side. Team 5 and 6 are in the middle circle throwing yarn balls into the opposing teams’ area. Go for 1 minute and switch roles for all teams. (2, 4, 5)

Classroom integration: Language Arts

Day 2: Throwing and Catching

- Introduction Activity: Locomotor Express -- Students will move around in general space according to the locomotor movement stated by the teacher. 25 mph = walking, 55 mph = running, ride a horse = galloping, bumpy road = skipping, flat tire = hopping, out of gas = push-ups(1)
• Fitness Activity: Odd/Even Tag -- Partners move around in general space near each other. Identify ahead of time who is odd and who is even. When the music stops, go back to back with partner. If number is called (odd or even) then that person is “it”. If tagged, do 5 jumping jacks and chase your partner. Continue back to back when music stops and call out math problems to solve and get to odd or even. (1, 4, 5)

• Lesson Focus: Skill Practice & Number Rally Reporters – One partner will toss a ball in the air until other partner runs to the dice area. The reporter rolls two dice and reports the number back to the partner who is tossing. The two partners will solve the problem and that is how many throws and catches they will perform. Switch roles often. (1,2,4,5)

• Culminating Activity: 5 passes - Two teams of about 5-6 students will try to throw and pass a ball in general space without the ball falling on the ground or getting intercepted by the opposing team. If 5 passes are completed, that team receives one point. After the point is earned, the opposing team takes possession. Switch challenging teams every 2 minutes. (2, 3, 4, 5, 6)

Classroom Integration: Math

Day 3: Throwing and Catching

• Introduction Activity: Team Tarps – Students will work together to form geometrical shapes out of a tarp. (triangle, square, circle, house etc.) (1, 4, 5)

Fitness Activity: Group States -- When the music starts, the leader chooses a state and the students in that group have 3 tries to guess what the capital is of that state. When the music starts, the states and capital information is passed to the next person in line and a new locomotor movement is called. Switch until all students have been the leader. (1,4,5)

• Lesson Focus: Skill Practice and 5 passes – same as the previous day (1, 4, 5, 6)

• Culminating Activity: Fitness Baseball -- Choose 6 teams. One person will throw the ball into general space and run around two cones until everyone in the outfield has had a chance to catch a ball. The runner gets a point for every cone passed. Everyone should get a turn to throw. (2, 3, 4, 5, 6)

Classroom Integration: Social Studies and Math

Day 4: Throwing and Catching

• Introduction Activity: Smart Movers (Spelling) -- Half of the class will be teachers and half will be students. Each group moves to music on their own side of the gym. When the music stops, the teachers and students face each other on the half court line. The teachers have flash cards with spelling words on them. Switch roles. (1, 4, 6)

Fitness Activity: States and Capital Tag – Using the state and capitals poly spots have the students move in general space. When the music stops, find a state and guess the capital. (1, 3, 4, 5)

• Lesson Focus: Team Creation of Drill to practice -- Throwing and Catching – Practice from previous day using individual and partner skills. Work on moving and catching. (2, 5)

• Culminating Activity: Gatorball -- Two teams try to score a touchdown by passing a ball. If a student chooses to run, he/she is eligible to be tagged. If tagged, the ball is downed and the opposing team begins their series of throwing and catching. If intercepted, opposing team takes off from the point of the catch. (2, 3, 5, 6)

Classroom Integration: Social Studies and Language Arts

Day 5: Throwing and Catching
• Introduction Activity: I’m Listening - Bricks (Directionality) -- Students will start in partner formation. Foam bricks are scattered in the play area. Partner 1 closes his/her eyes as Partner 2 describes where to go to get to the other side without touching one of the bricks. (1, 5)
• Fitness Activity: Race Around the Planets -- Students will work in groups to collect puzzle pieces that put together the planets. Each time they get a puzzle piece, they will run the distance in relationship to the distance from the sun. Distances are calculated by cone markings in the gym. (1, 4, 5)
• Lesson Focus: Game Strategy and 5 passes – Same as previous day. (2, 3, 5, 6)
• Culminating Activity: Gatorball -- Same as previous day. (2, 3, 5, 6)

Classroom Integration: Social Studies and Science

Day 6: Throwing and Catching
• Introduction Activity: Movement Dice -- Students will move according to the number on the die. 1=walk, 2=run, 3=gallop, 4=skip, 5=jump, 6=hop (1, 3, 5)
• Fitness Activity: Group Touch Down w/ throwing and catching (1, 3, 5)
• Lesson Focus: Creating a game that teaches throwing and catching skills -- Students will write their activity on a sheet of paper. They must use detail in the description of each activity. (2, 5, 6)
• Culminating Activity: Teaching the created game to another group in the class (2, 5, 6)

Classroom Integration: Language Arts

Rigor/Relevance Framework

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<thead>
<tr>
<th>Quadrant C</th>
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<tr>
<td>• Team Tarps</td>
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<td>• I’m Listening</td>
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<td>• Creation of new drill in teams to practice skill</td>
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<td>• Teaching the created game to the class</td>
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<td>• Wear your partner out</td>
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<td>• Fitness Baseball</td>
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Created at Price Laboratory School based on materials from International Center for Leadership in Education

www.leadered.com
Appendix 11a

Sport Stacking Research Article

“Influence of Cup Stacking on Hand-Eye Coordination and Reaction Time of Second Grade Students’”

By
Brian E. Udermann, Steven R. Murray, John M. Mayer, & Kenneth Sagendorf

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INFLUENCE OF CUP STACKING ON HAND-EYE COORDINATION AND REACTION TIME OF SECOND-GRADE STUDENTS

BRIAN E. UDERMANN
University of Wisconsin—Lacrosse

STEVEN R. MURRAY
Mesa State College

JOHN M. MAYER
U.S. Sport and Sport Foundation

KENNETH SAGENDORF
Syracuse University

La Jolla, California

Summary.—Cup stacking has been adopted recently by many physical education programs to enhance rudimentary motor skills such as hand-eye coordination and ambidexterity as well as quickness and concentration; however, no empirical evidence has been published to support these claims. We examined the influence of cup stacking on hand-eye coordination and reaction time of 24 boys and 18 girls in second grade as measured by the Soda Pop and Yardstick tests, respectively. Two physical education classes were randomly assigned as treatment and control groups and were pre- and posttested for hand-eye coordination and reaction time. The treatment group participated in a 3-wk. cup-stacking program. Significant improvements were noted for both hand-eye coordination and reaction time between the pre- and posttest scores for this group but not for the control group. Therefore, cup stacking is indeed effective in enhancing hand-eye coordination and reaction time.

The National Association for Sport and Physical Education (NASPE) stated that one of the major purposes of physical education is to develop movement competency and proficiency in students (NASPE, 1995). Movement competency was defined by NASPE as “the development of sufficient ability to enjoy participation in physical activities and establishes a foundation to facilitate continued motor skill acquisition and increased ability to engage in appropriate motor patterns in daily physical activities” (p. 2). For a student to become competent in movement, basic proficiency must be attained in fundamental motor skills, e.g., running, striking, catching. Keys to developing these skills, especially object-manipulation skills, are hand-eye coordination and reaction time.

Many physical educators incorporate a variety of activities into their curricula to enhance their students' basic movement competencies. One popular activity in schools today is cup stacking. The sport of cup stacking originated as a recreational activity offered in settings such as boys' and girls' clubs, after school programs, and community recreation facilities some 20 years ago. Since then, cup stacking has evolved into a nationally prominent

1 Please address correspondence to Dr. Steven R. Murray, Chairman and Associate Professor, Department of Human Performance and Wellness, Mesa State College, 1100 North Avenue, Grand Junction, CO 81501 or e-mail (smurray@mesastate.edu).
sport, being taught in every state and well over 3,000 schools across the nation.

Anecdotal evidence in a brochure (Speed Stacks®, Castle Rock, CO, 2002), indeed suggested the efficacy of cup stacking in the acquisition and enhancement of basic motor skills; however, no empirical evidence is available to support these claims. A review of literature on the topic yielded only one study involving cup stacking, but it used cup stacking as an activity to measure the effectiveness of motivation and feedback and did not examine the effect of cup stacking on motor skills directly (Fredenburg, Lee, & Solomon, 2002). The purpose of this study was to examine the influence of cup stacking on hand-eye coordination and reaction time via the Soda Pop and Yardstick tests.

Method

Setting

We conducted this study in a public elementary school located in the central western part of the USA. All testing and training was held in the elementary school’s gymnasium, multipurpose room, or library. The Human Subjects Committee of our college approved the research protocol and informed consent forms.

Participants

Forty-two second-grade students (24 boys, 18 girls) from two different physical education classes participated. The intact classes were randomly assigned as either the control (n=21; 12 boys; 9 girls; mean age=7.8 yr. (0.6); 18 right-hand dominant) or treatment group (n=21; 12 boys; 9 girls; mean age=7.8 yr. (0.4); 17 right-hand dominant). Signed parental consent forms were secured for each participant.

Procedure

Each participant initially completed the Soda Pop and Yardstick tests (we chose these tests because of their ease of administration and replication) to measure hand-eye coordination and reaction time, respectively (Hoeger & Hoeger, 2004). During the pretesting participants reported to the school’s multipurpose room during their regularly scheduled physical education class. Upon arrival they were randomly assigned a test administrator and were administered the Soda Pop and Yardstick tests for the dominant hand (the hand the participant used for writing) and then for the nondominant hand.

Soda Pop Test

The Soda Pop test is a documented test of hand-eye coordination (Hoeger & Hoeger, 2004). The test involves constructing a cardboard platform 32 in. (81.28 cm) in length and 5 in. (12.7 cm) wide. Six circles, 3.25 in.
(8.26 cm) in diameter, are drawn centered on the cardboard 1.5 in. (3.81 cm) apart. Three full soda pop cans are used for the test and are placed in every other circle starting from the side of the hand being tested. The participant begins the test by placing the hand “thumb up,” with the elbow joint bent about 100–120°, grasping the can with the hand being tested. On the signal of the tester saying “Go,” the stopwatch is started and the participant begins. Each can is then turned upside down into the adjacent empty circle within the drawn line. The participant then returns to the first can turned, replaces it in the original position and proceeds with the other two cans. This whole process is repeated twice. The time of each test is recorded to the nearest tenth of a second. The participant is given two practice trials.

Yardstick Test

The Yardstick test is an established test for measuring reaction time (Hoeger & Hoeger, 2004) [technically it measures total time or reaction time plus movement time]. It involves taking a standard “yardstick” and shading in the first 2 in. with a light-colored marker as a “concentration zone.” The participant sits in a chair, resting one hand on the edge of a table with the thumb and fingers about 1 in. apart and extended 3 in. off the table. The test administrator holds the yardstick in a vertical position, with the flat edge of the yardstick parallel to the palm of the hand and even with the top of the thumb and index finger. The test administrator then gives the command “ready,” makes a random 1- to 3-sec. silent count, and releases the yardstick. The participant grabs the yardstick with the fingers and thumb as quickly as possible without moving the hand from its initial starting point. The trial is scored to the nearest 1/2 in., measured above the top of the thumb. Three practice trials are given, and 12 trials are performed during the actual test. The three fastest and three slowest times are eliminated, and the middle six times are averaged to attain a final score.

After pretesting, the treatment group was given basic instructions on the proper mechanics and sequencing of cup stacking shown in the brochure (Speed Stacks®, Castle Rock, CO, 2002). The treatment group then completed 20 30-min. cup-stacking sessions (approximately 4 per week), using both hands, which were incorporated into their regular physical education class over 5 wk. The instruction and progression of cup stacking began with a basic three stack and progressed to more complicated stacks. During the training sessions for cup stacking, a number of physical activities, e.g., running relays, scooters, were incorporated into the lessons to maintain participants' interest. The control group participated in other regularly scheduled activities, e.g., jump rope, parachute, during this same period. At the conclusion of the 5-wk. training period, every participant was again administered the Soda Pop and Yardstick tests.
Data Analysis

The Soda Pop test scores in seconds and the Yardstick test scores in inches were evaluated for main effects of group and testing time and group by testing time interactions using a two-way analysis of variance with repeated measures, 2 (group) × 2 (test session). Tukey post hoc tests were completed to evaluate significance of interactions in the initial analysis of variance. Standard t tests were applied to test differences in demographic and performance characteristics between the control and treatment groups. Statistical significance was accepted at the .05 alpha.

Results

Forty-one participants completed both the pre- and posttests (one participant did not complete the posttest because a family moved). No significant differences were observed between the control and training groups with respect to age, sex, hand dominance, or pretraining Soda Pop and Yardstick test scores (p > .05).

Soda Pop Test

The results of the Soda Pop test are shown in Table 1. The treatment group’s posttraining Soda Pop test scores significantly improved from the pretraining scores for both the dominant and nondominant hands (F = 26.93, p < .0001; F = 37.82, p < .0001, respectively). The pre- and posttraining Soda Pop test scores for the control group’s dominant (F = 0.30, ns) and non-

<table>
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<tr>
<th>Test</th>
<th>Control (n = 21)</th>
<th>Treatment (n = 20)</th>
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<tr>
<td></td>
<td>Pretest</td>
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<td>Soda Pop Test, sec.</td>
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<tr>
<td>Dominant hand</td>
<td>16.0</td>
<td>2.2</td>
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<tr>
<td>Nondominant hand</td>
<td>17.4</td>
<td>2.6</td>
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<tr>
<td>Yardstick Test, in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominant hand</td>
<td>11.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Nondominant hand</td>
<td>10.5</td>
<td>2.4</td>
</tr>
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</table>

*Denotes significant difference at p ≤ .05 between treatment pre- and posttest values.

dominant (F = 0.01, ns) hands were not significantly different. With respect to the posttraining Soda Pop test scores, the treatment group’s scores were significantly lower than the control group’s for the dominant and nondominant hands (F = 21.71, p < .0001; F = 37.28, p < .0001, respectively).

Yardstick Test

The treatment group’s Yardstick test scores significantly improved after
training for both the dominant and nondominant hands ($F=12.69$, $p=0.0006$; $F=24.93$, $p<0.0001$, respectively). For the control group, no significant differences were observed between the pretraining and postraining Yardstick test scores for both the dominant and nondominant hands ($F=0.01$, ns; $F=0.60$, ns, respectively). The postraining Yardstick test scores for the treatment group were significantly lower than the postraining Yardstick test scores for the control group for the dominant and nondominant hands ($F=33.1$, $p<0.0001$; $F=25.94$, $p<0.0001$, respectively); see Table 1.

Discussion

A review of related literature on cup stacking showed no previous research published on the efficacy of cup stacking in motor skill acquisition and performance. Therefore, the purpose of our study was to examine the influence of cup stacking on hand-eye coordination and reaction time of second-grade students as measured by the Soda Pop and Yardstick tests, respectively, following a 5-wk. cup-stacking unit in a physical education course.

Coordination is defined as “the integration of the nervous and the muscular systems to produce correct, graceful, and harmonious body movements” (Hoeger & Hoeger, 2004, p. 256), and “reaction time is defined as the time required to initiate a response to a given stimulus” (p. 258). These were our operational definitions. Specifically, though, we measured hand-eye coordination through the Soda Pop test and reaction time (technically total time) via the Yardstick test as recommended by Hoeger and Hoeger (2004).

Our results, nevertheless, should not be construed to relate to these factors as global constructs; rather, our results are indicative of improvements in the performed tests that may perhaps influence related activities.

Our results indicate that cup stacking positively influenced scores on tests to measure hand-eye coordination and reaction time in these second-grade students. These findings are important to the physical educator because hand-eye coordination and reaction time are essential elements in many movement forms and motor skills and tie directly into the national standards for physical education (NASPE, 1995). Specifically, the basic development and mastery of these skills allows one to engage productively in additional motor skill development, designed to increase overall motor skill proficiency and facilitate participation in a variety of lifetime sporting and fitness-related activities.

Physical education curricula should contain numerous meaningful experiences to help a student become physically educated (NASPE, 1995). Basic motor skills must be developed for a student to become proficient in movement, and many activities require the fundamental development of hand-eye coordination and reaction time. Physical educators have used a variety of traditional activities, e.g., catching, striking, dribbling, to develop hand-eye co-
ordination and reaction time over the years (Thomas, Lee, & Thomas, 2000). Such motor skills are necessary requisites for development. Thus the results of this study indicate that cup stacking might be a valuable component of the physical education curriculum and is a viable activity for the development of hand-eye coordination and reaction time. It would be desirable to extend this study with a larger sample of elementary school students as no power assessment was done here and ns were not large and from one location.

REFERENCES


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Appendix 11b

Sport Stacking Research Article

“A Pilot Study of a Possible Effect from a Motor Task on Reading Performance”

By
Tabatha A. Uhrich and Ricky J. Swalm

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A PILOT STUDY OF A POSSIBLE EFFECT FROM A MOTOR TASK ON READING PERFORMANCE

TABATHA A. UHRICH AND RICKY L. SWALM
Towson University AND Temple University

Summary.—This pilot study examined the influence of participation in a 6-week bimanual coordination program on Grade 5 students’ reading achievement. Twenty Grade 5 students participated in a bimanual activity (sport stacking) and were tested whether reading achievement scores were significantly different from the scores for 21 control students. The experimental group consisted of 20 students (11 boys, 9 girls) from one intact classroom cohort; the control group consisted of 21 students (12 boys, 9 girls) from one intact classroom cohort. Students in both groups ranged in age from 10 to 11 years. The intact classroom cohorts were randomly assigned to experimental and control groups. Reading achievement was measured by differences in pre- and posttest scores from the GMRT-4 Decoding and Comprehension skill subtests. Group by sex analyses of covariance, using pretest scores as covariates, indicated that there were no significant differences by group or sex for decoding skills. A significant increase was found for the experimental group on Comprehension skills. Therefore, participation in a bimanual coordination program, using sport stacking as the activity, may improve Grade 5 students’ reading comprehension skills, regardless of sex.

Several studies have addressed the relationship of bimanual coordination and reading ability (Wolff, Cohen, & Drake, 1984; Gladstone, Best, & Davidson, 1989; Davidson, Leslie, & Saron, 1990; Wolff, Michel, Drake, & Ovrut, 1990; Moore, Brown, Markee, Theberge, & Zvi, 1995). The studies indicate that, in general, when compared to neurologically intact individuals, children and adults with impaired reading skills and dyslexia have slower and less accurate bimanual coordination. Furthermore, it has been suggested that variations in the dynamics of interhemispheric interaction may contribute to differences in reading ability (Wolff, et al., 1984, 1990; Marion, 2002).

Given the findings relative to associations between bimanual coordination and reading skills, participation in activities designed to enhance bimanual coordination may prove beneficial to students’ reading achievement (Hannahford, 1995, 1997; Jensen, 2000).

A relatively new activity being utilized by physical educators is sport stacking. Sport stacking is an activity that requires the participant to use both hands to stack a group of 12 specialized cups in predetermined combinations. Each participant works with their own set of cups, to gain competency in stacking cups into the predetermined combinations. As the participant learns and is able to accurately perform the required cross-lateral movements that make up the patterns, the tasks become more complex and expand to include an emphasis on speed of performance.

Research has shown that both hemispheres of the brain are activated when college students speed stack (Hart & Bixby, 2005). While studies have supported potential improvements in reaction time and hand-eye coordination in Grade 2 boys and girls (Udermann, Murray, Mayer, & Sagendorf, 2004), an association between sport stacking and academic performance has not been documented.

The purpose of this pilot study was to examine the influence of participation in a 6-week bimanual coordination program on Grade 5 students’ reading achievement. The test here was whether children stacking cups for six weeks would increase their reading performance significantly more than children who did not.

Method

Participants

The participants were Grade 5 students from two classes in a K–8 parochial school in the mid-Atlantic region (N=41). The school represented students from the middle-to-upper socioeconomic classes. Ethnicity of the school was comprised of 74% Euro-American, 20% African-American, 3% Latino-American, 2% Asian-American, and 1% Native American students.

Participants included in the data collection were those who had a signed consent form from parents or guardians, took both pre- and posttests for reading achievement, and were absent two or fewer times for the intervention sessions. Participants were grouped as a classroom cohort; one cohort was randomly assigned to the experimental group while one cohort was randomly assigned to the control group. The experimental group consisted of 20 participants (11 boys, 9 girls). The control group consisted of 21 participants (12 boys, 9 girls).

Materials

Reading achievement.—Reading achievement was assessed using the group administered Gates-MacGinitie Reading Test Fourth Edition (GMRT-4), which is designed to measure reading decoding and comprehension skills. Participants were pre- and posttested using Level 4 Form S; this level was selected as appropriate since the study occurred at the beginning of the school year. The classroom teachers administered and scored both the pre- and posttests; the classroom teachers also coded each booklet with a numerical value to assure participants’ anonymity. Administration of the GMRT-4 pretest occurred on the same day and at the same time.
Reliability statistics for the GMRT-4 were calculated using Kuder-Richardson Formula 20. Reliability for Level 4 Form S was .92 for Decoding and .93 for Comprehension for the fall administration. Validity statistics for the GMRT-4 were calculated by correlation of the GMRT-4 with validity scores from the Gates-MacGinitie Reading Test Third Edition (GMRT-3). The correlation for Level 4 was .89 for Decoding and .86 for Comprehension. Validity statistics for the GMRT-3 were calculated by correlation with other reading tests. Validity of the GMRT-3 with the Iowa Test of Basic Skills (ITBS) and Tests of Achievement and Proficiency (TAP) ranged from .56 to .88. Correlation of the GMRT-3 with the Comprehensive Test of Basic Skills (CTBS) ranged from .74 to .84.

Activity questionnaire.—An activity questionnaire was distributed for completion by parents or guardians assessing participants’ involvement in any or all of the following: (1) prior sport stacking opportunities, (2) bimanual activities other than sport stacking, such as playing of a musical instrument or playing video games, and (3) sports activities such as basketball or soccer. The activity questionnaires were distributed at the same time as the parents’ and guardians’ consent forms were distributed. The classroom teachers coded each returned activity questionnaire with a numerical value to assume participants’ anonymity and to coincide with the number given for each participant for pre- and posttest scores.

Classroom teacher interview.—A classroom teacher interview was conducted for the purpose of assessing the type of reading instruction, quantity of time allocated to reading per day, and if any additional reading experiences occurred which may have affected the outcome of the pilot study. The classroom teacher for the experimental group was a man; the classroom teacher for the control group was a women. The classroom teacher of the experimental class had 30 years teaching experience, but the teacher of the control class was in the first year of teaching. This disparity in teaching experience is a serious confounding factor in this pilot study. The lead author conducted all of the interviews at the conclusion of the intervention period.

Procedure

The experimental group received bimanual activity through participation in the task of sport stacking. Sport stacking is an activity which requires the participant to use both hands to assemble plastic cups in predetermined patterns using sequences that follow the rules sanctioned by the World Sport Stacking Association. Sport stacking materials were made available for this study from Speed Stacks®, Incorporated. A SportPack was supplied containing sports, DVD, practice and competition mats, minis, Super Stacks, and unit plan. The five day unit plan was used to provide content and skill or activity progression for the intervention; however, it was modified to conform to the intervention protocol. Specifically, there were two modifications. The first modification involved reconfiguring five approximately one-hour lessons of the Speed Stacks® Incorporated unit plan into 18 20-min. sessions. The second modification was the deletion of the relay races; given limited space, only the classroom was available for speed stacking activity.

The intervention protocol consisted of sport stacking instruction and practice for 20 min., three times per week, for a six-week period. The intervention was given during the school’s snack time. The control group was engaged in snack time while the experimental group was sport stacking. The experimental group was given snack time at a later time in the school day. All intervention sessions occurred on a regularly predetermined schedule so that it was consistent for each class every week throughout the intervention period. Sport stacking activity was conducted in the experimental groups’ classrooms with the classroom teachers present during every intervention session. The lead author performed all intervention sessions for the six-week period, to maintain consistency over time.

Each participant was given a set of 12 cups to use during every intervention session. Participants were encouraged not to practice between intervention sessions or to share their sport stacking skills with members of the control group. Participants had opportunities to practice all sport stacking activities taught during the interventions, however, actual sport stacking skillfulness was not assessed. The focus of the intervention was to provide opportunities for increased bimanual activity.

Results

Decoding

A 2 (Group: experimental, control) x 2 (Sex: boy, girl) analysis of covariance (SPSS) was used to compare the adjusted means of the posttest scores for the two participation groups, with pretest decoding scores as the covariate. There was no significant main effect of Group ($F_{1,41} = .03, p > .05; \eta_p^2 = .001$). In addition, there was no significant main effect of Sex ($F_{1,41} = .00, p > .05; \eta_p^2 = .000$). Finally, there was no significant participation Group by Sex interaction ($F_{1,41} = .68, p > .05; \eta_p^2 = .019$).

Comprehension

A 2 (Group: experimental, control) x 2 (Sex: boy, girl) analysis of covariance was used to compare the adjusted means of the posttest scores for the two participation groups, with pretest comprehension scores as the covariate. The results indicated a significant main effect of Group ($F_{1,41} = 4.54, p < .05; \eta_p^2 = .112$). The experimental class performed significantly better on Comprehension. There was no significant main effect for Sex ($F_{1,41} = 1.93, p > .05; \eta_p^2 = .051$). In addition, there was no significant Group by Sex interaction ($F_{1,41} = 2.92, p > .05; \eta_p^2 = .075$).
Activity Questionnaire

The Activity Questionnaire return rate for the Grade 5 experimental group was 100% while the return rate for the control group was 50%. Therefore, the data were not used in interpretation of statistical results.

Classroom Teacher Interviews

The Classroom Teacher Interviews indicated that both experimental and control group teachers incorporated daily reading instruction into their teaching schedules for approximately 40 minutes. In addition, both teachers used the Macmillan/McGraw-Hill packaged reading program, appropriate for the Grade 5 students. Finally, both teachers utilized a balanced approach to reading instruction, whereby decoding and comprehension were emphasized.

Discussion

The results indicated that bimanual activity did not have a significant effect on Grade 5 students’ Decoding skills, regardless of sex. While it is plausible that these findings are simply the result of a co-occurrence (Hulme, 1988) and not indicative of a causal relationship, support for these results can be garnered from music-related research. Since musicians who began musical training prior to the age of seven were found to have larger anterior midsagittal corpus callosa (Schlaug, Jäncke, Huang, Staiger, & Steinmetz, 1995)—a measure related to the number of axons that cross the corpus callosum (Aboitiz, Ide, & Olivares, 2003) and capacity for communication from hemisphere-to-hemisphere—the finding of no difference in Grade 5 decoding abilities between the two groups might have been due to missing a critical period for development of the anterior midsagittal corpus callosum through bimanual activity, since all participants were beyond the age of seven. This is very tentative speculation, as measures did not assess changes in participants’ brains.

Music-related research, using only a few minutes of musical training intervention on nonmusician participants, has resulted in positive effects on recruitment in areas of the motor cortex (Hund-Georgiadis & von Cramon, 1999). Given that the Hund-Georgiadis and von Cramon (1999) study incorporated only a few minutes of musical training to derive significant plastic benefits, it seems that a bimanual activity program of 20 min., three times per week, for six weeks might be more than adequate to affect significantly Grade 5 participants. However, because the assessment for reading ability used in this pilot study was not sufficient for assessing changes in the brain, the authors acknowledge the tentativeness of this finding.

The results indicated that bimanual activity may have had a positive significant effect on reading comprehension for Grade 5 participants, regardless of sex. These results, while to be taken with appropriate caution, are consistent with findings by Roberts and Kraft (1989), who found that younger subjects, ages 6 to 8 years, who received an instructional emphasis on decoding, relied more on the left hemisphere when reading than older subjects, ages 10 to 12 years, who demonstrated bilateral activation when reading. These findings were explained by developmental differences and support the lateralization theory of the corpus callosum, as the left hemisphere was more engaged than the right while subjects were decoding (Clarke, McCann, & Zaidel, 1998; Byrnes, 2001). Older subjects’ use of the right hemisphere in reading tasks has been cited as essential for comprehension (Banich & Nicholas, 1998).

The current findings should be considered with caution, as they are preliminary in nature, in efforts to seek empirical evidence for the current educational trend to support brain research by focusing on increased bilateral movement for enhancing academic achievement. The potential relationship of the capacity or activation of the corpus callosum with the findings of this pilot study is only speculation and should be taken with caution. Indeed, a serious flaw in the study is the classroom cohorts tested; it is plausible that the results are an extension of differences in the teachers’ experience (30 yr. versus 1 yr.) more than anatomical changes due to cup stacking activity. A replication should be attempted.

REFERENCES


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