Advancements in Fitness and Activity Research: 50 Years of Events and Innovation

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History Quotes


Historians, it is said, fall into one of three categories:
Those who lie.
Those who are mistaken.
Those who do not know.
Anonymous

Setting the Stage*
*Disclaimer, not all inclusive

To look back upon history is inevitably to distort it.
Norman Pearson

Late 1800s–early 1900s
• Medical Doctors (Gulick, Sargent)
• Hygiene/health emphasis
• "Scientific Spirit" (Homans)
Park, 1989
History is often not what actually happened, but what is recorded as such.

Henry L. Stimson
Fitness Celebrities
- Jack LaLanne
- Bonnie Prudden
- Charles Atlas
- Paul Dudley White

1950s Summary
- Fitness testing begins
- Public focus on fitness
- Increased college enrollments
- More PE doctorates
- Stage set for specialization
- Stage set for science emphasis
- Stage set for performance emphasis
- Stage set for importance of exercise
- Stage set for change in PE

History never looks like history when you are living through it.
John W. Gardner

Personal History 1950s
- 1957-1960 Undergraduate
- McCloy Tests & Measurements Book
- Collected Youth Fitness Data
- Product of generalism
- "Wanna be" coach and athlete

Early 1960s
- PE Teaching 1960-61
- Illinois Masters 1961-62
- New Mexico Ph.D 1962-65
- Psychology 24 hour minor

Early 1960s
- Election of John F. Kennedy (60)
- Assassination of President Kennedy (1963)
1960s
- Civil Rights Movement
- Counter Culture Movement
- 1962 Royal Canadian Exercises
- 1960+ Conceptual PE
- 1964 Henry Article (JOHPER)
- 1964+ Institutional Review Boards
- 1966 President’s Fitness Award
- 1967 NASPSPA

Performance Science
- Doc Counsilman
- Chinese Bandits (Deitzel)
- Tom Cureton (Champion Athletes)

Exercise Books
- Hypokinetic Disease (1961)
- Structure and Measurement of PF (1964)
- Problem Solving Approach to PE (1966)
- Aerobics (1968)
- Concepts and Experiments in PE (1968)

1970s
- Merging of Departments
- Specialized Core Courses
- 1977 Research Consortium
- Specialized Texts

1970s Women’s Rights
- Title IX (1972)
- Sports for Girls and Women

1970s
- 1977 Fitnessgram Report Card
- Department Name Changes
- 1978 ACSM Positions CV Fitness & BC
- 1978 Harvard Alumnus Study
- 1979 Distance Running for Women ACSM
  - Chris Wells
  - Barb Drinkwater Women’s Sports Int.
  - Sharon Plowman
1980s
- 1980+ Fitness Majors
- 1980+ Corporate/Commercial Fitness
- 1980 Health Related Fitness Test
- 1984 Women’s Olympic Marathon
  - Joan Benoit Samuelson

Explosion of Fitness Texts
Texts Published by Decade, 1900–2008
1900–1909 1
1910–1919 1
1920–1929 5
1930–1939 9
1940–1949 27
1950–1959 19
1960–1969 42
1970–1979 84
1980–1989 218
1990–1999 327
2000–2008 261
As of April 25, 2008
Courtesy: Corbin and Cardinal, Quest, 2008.

1980s
- Heredity Research (Bouchard)
- 1988 Fitnessgram Assessment
- 1989 Blair/Cooper Studies

1990s
- Shift to Activity Focus
- Activity and Health
- Activity as a dependent variable
- 1990+ School Based Clinical Trials
- 1990+ ACSM Guidelines
- 1990 AHA/ACSM Guidelines
- 1994 Teen Guidelines
- 1996 Surgeon General’s Report
- 1998 Guidelines for Children

2000+
- Obesity Concern
- High Stakes Testing
- Healthy Lifestyle Promotion
- Return to Health Focus of Founders

Innovations
- Copiers
- Open Library Stacks
- Word Processors
- Internet

RESULTS OF INNOVATIONS
- Time Saved
- Improved access to information
Innovations

- Programmable Calculators
- Main Frame Computers
- Microcomputers
- Increased data storage
  - Diskette 1972 64K

RESULTS OF INNOVATIONS
- Time Saved
- Large Data Sets
- Onsite data analysis

Innovations

- Improved Statistics/Packages
- Theory Based Research
- Increase Outlets for Research
- Improved equipment

RESULTS OF INNOVATIONS
- Time Saved
- Improved Research
- More publication & presentation opportunities

50 Years of Fitness and Activity Research

Fitness Conventional Wisdom

- Youth are unfit
- Motor fitness = physical fitness
- Fitness is for performance
- Children fragile, especially girls
- Fitness awards motivate all kids
- Fitness happens if you try
- Body Fatness is a recent concern

Research Quarterly

Research Quarterly

Report Shocked President
Prompted Development of:
- President’s Council
- Youth Fitness Test
- Youth Fitness Surveys
Youth Fitness Test
Started by Research Section

Research Section Papers

Fat Children = Fat Adults
Standards of Subcutaneous Fat Applied to Percentile Norms for Elementary School Children
Charles B. Corbin, 1969

Child Heart Myth Dispelled
1969
1973
Kids Can Do Exercise
Research Quarterly 1972
Human Subjects Concern

Establishing Norms was “soup de jour.”

Health Fitness NCYFS
Pate et al. 1985
Health Fitness Norms

Challenge 1986

Fitness Awards: Do They Accomplish Their Intended Objectives?

Physical Fitness Testing: The Effects Of Rewards And Feedback On Intrinsic Motivation
Age a major factor in test performance.

Sallis and McKenzie
Physical Education and Public Health
1991

No Less Fitness Across Decades
Most Children Meet Health Standards

Questions About Awards

No Less Fitness Across Decades
Most Children Meet Health Standards


Age a major factor in test performance.

Robert F. Pangrazi and Charles B. Corbin
Arizona State University

No Less Fitness Across Decades
Most Children Meet Health Standards

Questions About Awards
Validation of Criterion-Referenced Standards for Tests of Arm and Shoulder Girdle Strength and Endurance

William J. Rutherford and Charles B. Corbin

The purpose of this study was to establish criterion-referenced standards for selected tests of arm and shoulder girdle strength and endurance for college-aged females. Several parameters of arm and shoulder girdle strength and endurance were administered to a sample of normal college-aged females. The criterion-referenced approach utilized in this study provided reliable and valid procedures for assessing the physical fitness of college-aged females, greater validity in the interpretation of test results, and a more accurate assessment of fitness levels. The following conclusions were drawn based on the results of this study:

1. Youth guidelines = adult guidelines
2. Fitness awards beat activity awards
3. Kids are inactive
4. Activity = fitness for kids
5. Kids compensate for school activity
Measurement issues in the Assessment of Physical Activity in Children

Gregory J. Web, Dean E. Corbin, and Richard P. Deane

Pedometer-Determined Physical Activity Levels of Youth


Physical Activity Guidelines

Teens 1994
Children 1998

Free-Living Pedometer Step Counts of High School Students

Bridgette E. Wilde, Charles B. Corbin, and Guy C. Le Masurier

Steps Among Middle School Students Vary With Aerobic Fitness Level

Guy C. Le Masurier and Charles B. Corbin

The purpose of this study was to suggest a model to determine if middle school students are engaged in aerobic fitness activities. Students who engaged in regular aerobic activity were more likely to meet the recommended level of aerobic fitness. A significant positive correlation was found between physical activity levels and aerobic fitness levels. This suggests that physical activity levels can be used as a proxy measure for aerobic fitness levels. However, additional work is needed to confirm these findings.
Restricting Opportunities to Be Active During School Time: Do Children Compensate by Increasing Physical Activity Levels After School?

Jennifer Link, Deborah S. Carter, and Kathleen S. Hale

Determinants of physical activity and interventions in youth

James E. Sallis, Aaron C. Bond, and Sharon W. Prochaska

Large Scale Fitness Surveys

Texas, California, NYC
New Wisdom

- Children not fragile, but not adults
- Youth unfitness is exaggerated
- Physical fitness = health fitness
- Activity does not predict fitness
- Norm-based awards lacking for most
- Young children most active
- Boys more active than girls
- Both benefit from activity
- Kids need kids guidelines
- Focus on activity
- In school activity helps (PE+)
- Fitness/Activity = achievement

Body Composition

- Body fatness is issue, but not new
- Body composition should be screened
- Body composition assessment is sensitive, so is all fitness testing
- Children’s standards established??

Conceptual Physical Education

Conventional Wisdom

- Physical education will always be required at college level.
- Textbooks should not be used except in majors classes.
- Physical education for non-majors should be skills based.
- Conceptual physical education does not work.

The beginning

Janet Wessell
Movement Fundamentals 1957.
Fitness for Modern Teenagers 1963

Wayne Van Huss
Physical Activity for Modern Living 1960

Janet Wessell 1959

Johnson et al. 1966
Corbin, et al. 1968
Corbin.

Lecture-Laboratory
Physical Education:
Program Organization
and Evaluation.
NCPEAM Proceedings.
73:139-142, 1969.

1974, 1979, 1980,
1981.

High School Conceptual PE

THE CONCEPTUAL APPROACH TO TEACHING PHYSICAL FITNESS
By Charles H. Corbin and Rick Lauer.

1979
1980 Florida Mandate
11 states require course
7 require curriculum
Jahn, et al. RC AAHPERD
2010

Conceptual Publications

1974 Physical Educator

The Physical Education
Proficiency Test: Who Takes it?
Who Passes it?

Physician and
Sports Medicine
1978

Exercise for a Lifetime: 
An Educational Effort

Charles B. Corbin, PhD
David R. Lauer, EdD

Conceptual Publications

1974 Physical Educator

Long-Term Effects of:
A Conceptual Physical Education Program

Project Active Teen

Physical Activity Participation of High School Graduates
Following Exposure to Conceptual or Traditional Physical
Education

Jahn, et al. RC AAHPERD

Conceptual Publications

peer reviewed article

Professor and Teacher Ratings of Objectives
for the Texas Foundations of Personal Fitness Course

Conceptual Publications

JOURNAL OF HUMAN COLLEGE HEALTH, VOL. 38, NO. 2

The Progression and Characteristics of
Conceptually Based Fitness/Wellness Courses at
American Universities and Colleges

Pamela Hodges Killick, PhD; William W. Werfeld, MPE; Sean Janotti, MPE;
Mary Dean, MPE; Charles Corbin, PhD

Conceptual Publications

Conceptual Publications

Conceptual Publications

Conceptual Publications

Conceptual Publications

Conceptual Publications

Conceptual Publications

Conceptual Publications
Conceptual Physical Education

New Wisdom

- Required College PE survives in small schools.
- Most college requirements are conceptual.
- Virtually all colleges have CPE
- Textbooks are typically used.
- Conceptual physical education has research support.
- CPE becoming prevalent in K-12
- CPE has changed view of activity, fitness, and wellness.

Girls in Physical Activity

Conventional Wisdom

- Girls are fragile
- Girls don’t like activity and sports.
- Girls don’t like competition.
- Girls should not compete with boys.
- Girls lack confidence in activity.
- Girls are inactive.

Response to Title IX

- Attitudes Towards Physical Activity of Champion Women Track & Field Athletes*

Theory Based Research

Thank You Dan Landers

Lennie, Factors in Female Lack of Confidence

Girls in Physical Activity

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- Girls lack confidence in activity.
- Girls are inactive.
Social Learning Theory

Girls in Physical Activity

New Wisdom

- Girls are not fragile
- Girls like activity and sports.
- Girls like competition.
- Cross-sex competition need not threaten males.
- Confidence can be developed.
- Girls are less active than boys.
- Girls need and interest must be considered.

Self-Perceptions

Physical Self-Perceptions (PSPP)
Self-Perceptions

- Relate to activity status
- Relate to wellness/well-being
- Vary among populations
- Can be developed

If you don't know where you've come from, you don't know where you are.
James Burke

Integrating

Movements Interact

Example

- Conceptual Physical Education
- FITT
- Threshold of Training
- Target Zones
- Fitness Testing
- Fitness Testing
- Exercise Prescription (ACSM)
- Activity Guidelines
Scientific footing
Some tests still not documented
What would C. H. McCloy think?

Some questionable uses.
Award questions.

We have come a long way!

Any time gone by was better.
Jorge Manrique
Illinois Connection
- Bill Hottinger (saved the rookie)
- Mike Pollock
- Bill Haskell
- Jim Skinner
- Dick Barger
- Bruce Holle
- Bill Adams
- Brad Aothermal
- Sue D’Amico
- Ray Welsh
- Don Franks
- Sharon Plowman
- Kirk Cureton
- Greg Welk
- Weimo Zhu
- Rainer Martens
- Dan Lenders
- Armond Seidler
- Bill Bynum

Fitnessgram Connection
- Marilu Meredith
- Steve Blair
- Russ Pate
- Sharon Plowman
- Kirk Cureton
- Tim Lohman
- Jim Morrow
- Harold Falls
- Bob Pangrazi
- Jim Sallis
- Charles Sterling
- Greg Welk
- Scott Going
- Jody Prochaska
- Weimo Zhu
- Dolly Lambdin
- Matt Mahar
- Georgi Roberts

Fitnessgram Advisors

Thank You

Questions