

Human Sustainability



Quality movement experiences foster human sustainability and flourishing using physical literacy as the compass.

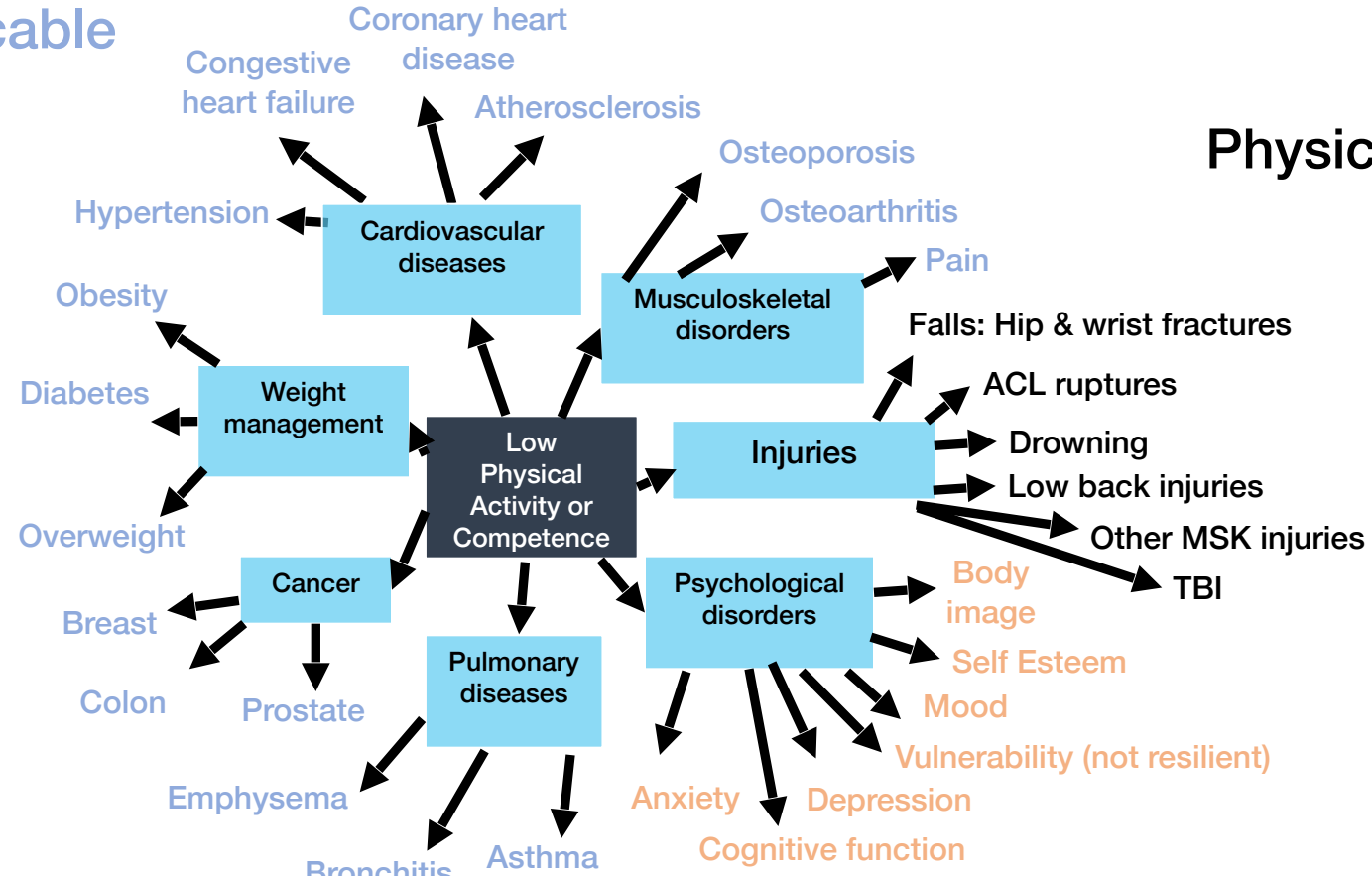


**PHYSICAL
ACTIVITY**

**PHYSICAL
LITERACY**

Non-Communicable Disease

Physical Injury



Psychological Condition

GUIDELINES

For optimal health benefits, children and youth (aged 5–17 years) should achieve high levels of physical activity, low levels of sedentary behaviour, and sufficient sleep each day.

A healthy 24 hours includes:



SWEAT

MODERATE TO VIGOROUS PHYSICAL ACTIVITY

An accumulation of at least 60 minutes per day of moderate to vigorous physical activity involving a variety of aerobic activities. Vigorous physical activities, and muscle and bone strengthening activities should each be incorporated at least 3 days per week;

STEP

LIGHT PHYSICAL ACTIVITY

Several hours of a variety of structured and unstructured light physical activities;

SLEEP

SLEEP

Uninterrupted 9 to 11 hours of sleep per night for those aged 5–13 years and 8 to 10 hours per night for those aged 14–17 years, with consistent bed and wake-up times;

SIT

SEDENTARY BEHAVIOUR

No more than 2 hours per day of recreational screen time; Limited sitting for extended periods.



Physical Literacy

What I have learned from Circus

“Seeing potential”



CIRQUE DU SOLEIL
ENTERTAINMENT GROUP

DURABILITY
BY DESIGN

PREPARE
PERFORM
RECOVER

CRITAC

Le Centre de recherche,
d'innovation et de
transfert en arts du cirque



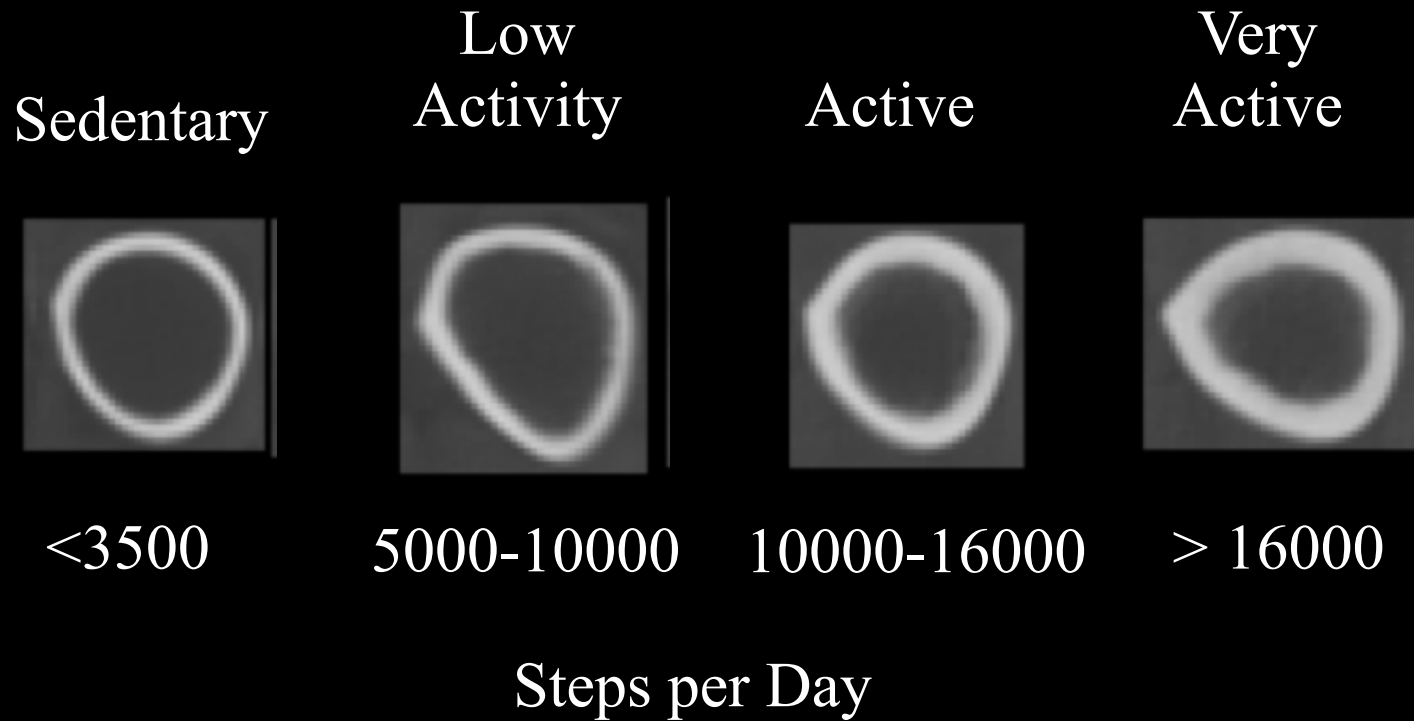
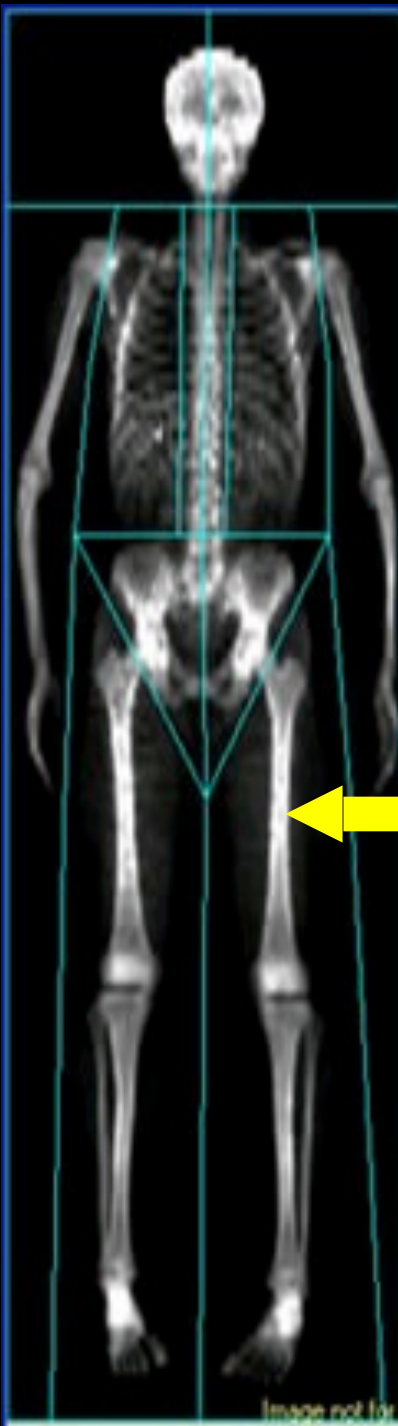
École
nationale
de cirque

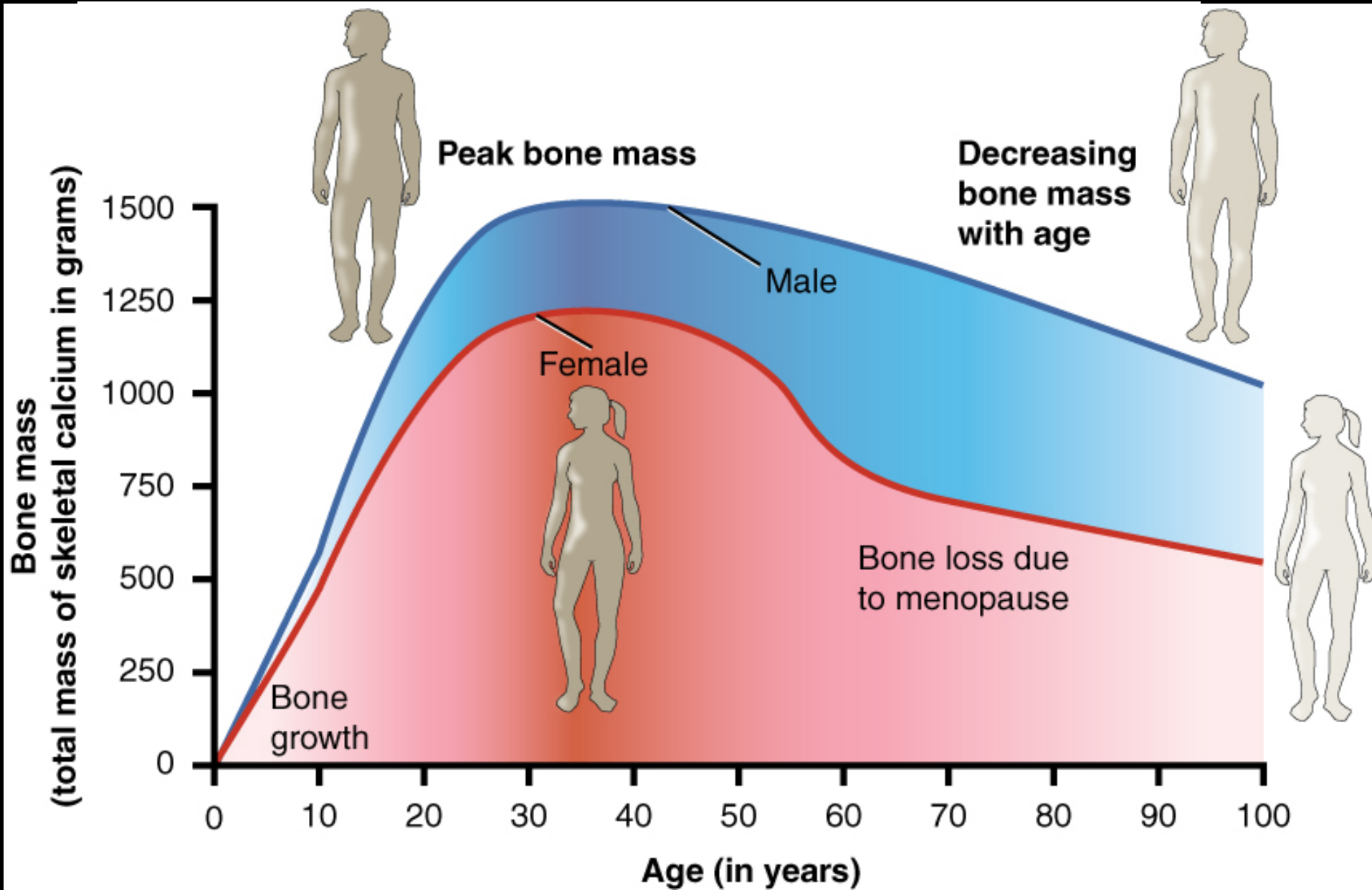
MONTREAL



Children & Youth : Bones & Physical Activity

Bone Quality = density and architecture
Bone quality is related to physical activity levels





POTENTIAL



THE Physical Literacy (R)evolution

Physical literacy definitions and consensus statements



THE ASPEN INSTITUTE

PROJECT PLAY


**Physical literacy is the ability,
confidence, and desire to be
physically active for life.**

2015

“No matter how many sidewalks we build, no matter how many parks we construct, no matter how much we urge people to get involved with physical activity, they simply won’t do it unless they have the ability, confidence, and desire to be physically active. That’s where physical literacy comes in.”

American Surgeon General, Vivek Murthy
(June 27, 2015)

Canada's Physical Literacy Consensus Statement



Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life.

International Physical Literacy Association, May, 2014

2015

Définition de la littératie physique

La littératie physique se définit par la motivation, la confiance, la compétence physique, le savoir et la compréhension qu'une personne possède et qui lui permettent de valoriser et de prendre en charge son engagement envers l'activité physique pour toute sa vie.

Traduit de l'International Physical Literacy Association, Mai 2014

2016



Physical literacy is about building the skills, knowledge and behaviours that give us the confidence and motivation to lead active lives.

2019

Physical Literacy Consensus Statement for Ireland (All Island)



October 2022

**Physical literacy
is our relationship
with movement
and physical activity
throughout life.**

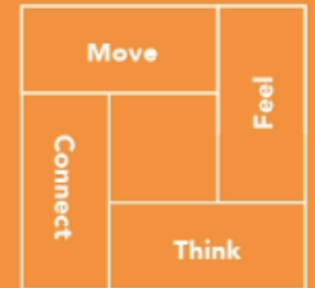
A personal relationship

Having a positive and meaningful association with movement and physical activity.



Movement and physical activity

How we move (physical), connect (social), think (cognitive) and feel (affective) during movement and physical activity plays a crucial role.



Throughout life

Influenced across the lifecourse by individual, social and environmental factors.





UNESCO
Publishing

United Nations
Educational, Scientific and
Cultural Organization

QUALITY PHYSICAL EDUCATION

*Physical literacy is the foundation of **QPE**.*

*Physical literacy is a key outcome of **QPE**.*

<https://www.cdc.gov/healthyschools/sher/characteristics/index.htm>

MORE ACTIVE PEOPLE FOR A HEALTHIER WORLD



A **Common Vision** for Increasing Physical Activity and Reducing Sedentary Living in Canada

LET'S

GET

MOVING



May 31, 2018



PHYSICAL LITERACY IN THE UNITED STATES

A MODEL, STRATEGIC PLAN, AND CALL TO ACTION



THE ASPEN INSTITUTE
PROJECT PLAY

Physical activity for health

More active people for a healthier world:
draft global action plan on physical activity 2018–2030

OBJECTIVE 1 - CREATING AN ACTIVE SOCIETY

STRATEGIC ACTION 1.1. Implement best practice communication strategies to increase public understanding of, and appreciation for, the multiple health and community well-being.

PROPOSED ACTIONS FOR: MEMBER STATES

1. Develop a national communication strategy for physical activity as part of, or aligned with, a national action plan on physical activity to raise awareness and knowledge of the health benefits of physical activity, promote behaviour change and increase health and physical literacy



A **Common Vision** for Increasing
Physical Activity and Reducing
Sedentary Living in Canada

LET'S

GET

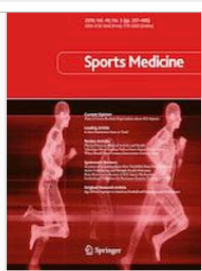
MOVING

May 31, 2018

The Foundation: Physical Activity for All



The *Common Vision* is guided by five interdependent principles that are foundational to increasing physical activity and reducing sedentary living. They include **Physical Literacy, Life Course, Population Approach, Evidence-based and Emergent-focused and Motivations.**



Physical Literacy, Physical Activity and Health: Toward an Evidence-Informed Conceptual Model

Authors

[Authors and affiliations](#)

John Cairney , Dean Dudley, Matthew Kwan, Rheanna Bulten, Dean Kriellaars

<https://pubmed.ncbi.nlm.nih.gov/30747375/>

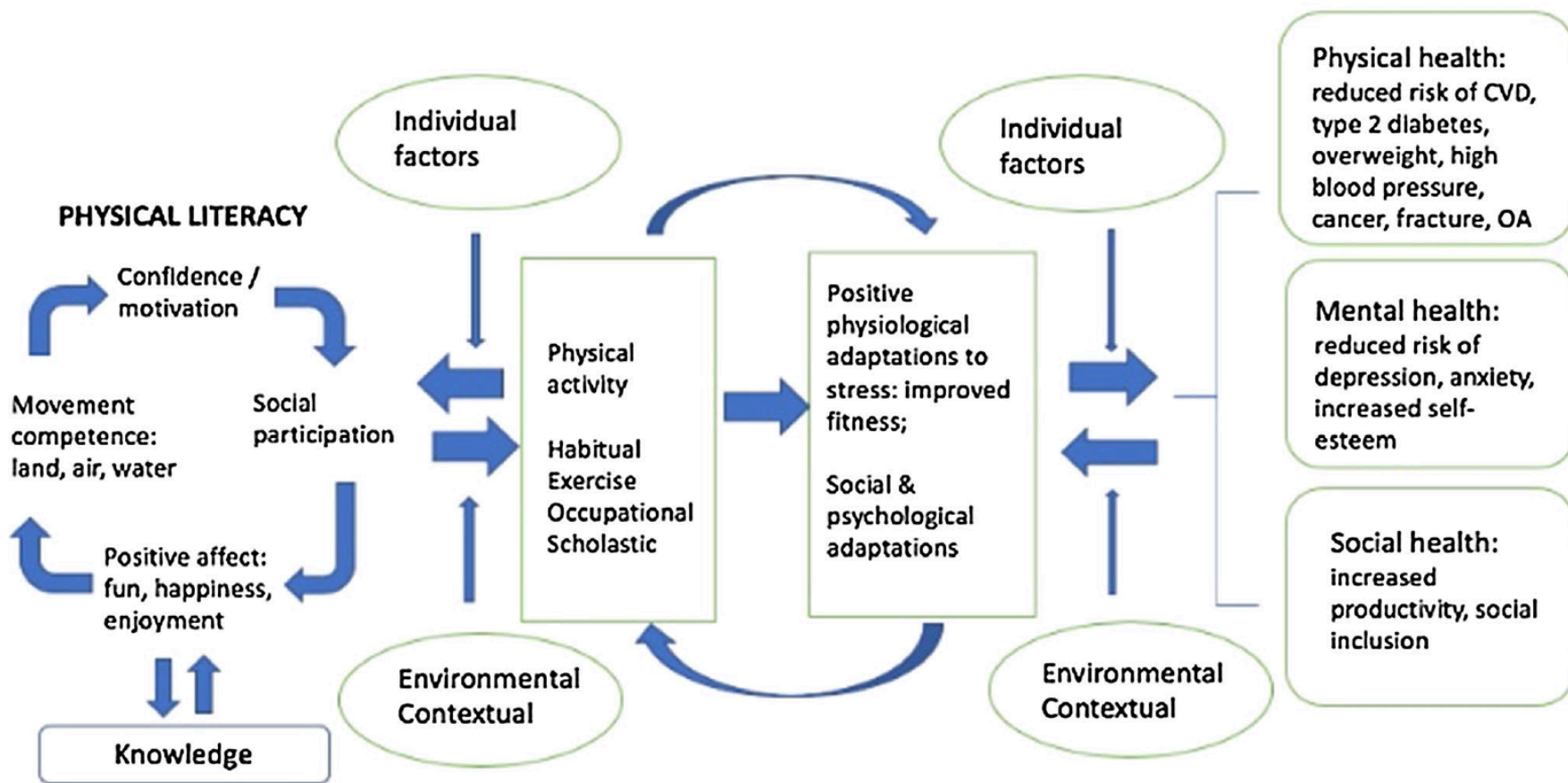


Fig. 1 Conceptual model linking physical literacy, physical activity and health. CVD cardiovascular disease, OA osteoarthritis

PHYSICAL LITERACY

Goals

ACTIVE PARTICIPATION

ADEQUATE SAFETY

Individual

MEANINGFULLY PARTICIPATE

THRIVE

Societal

HEALTH EQUITY

SOCIAL EQUITY

HUMAN POTENTIAL



Confidence



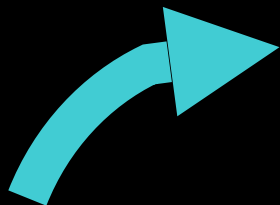
Motivation



Active
Participation



Competencies



Psychological

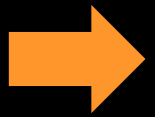
Physical

Construction of Positive Challenges



Movement Contexts

RECREATION, SPORT, VOCATION, PLAY, PERFORMING ARTS, ACTIVITIES OF DAILY LIVING AND EVEN VICARIOUS EXPERIENCES



Positive Movement Experience



Activated Physical Literacy Engine

Social

Creative

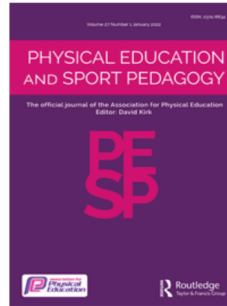


Parkour and Adventure
Education Model

Movement Exploration

Substantial benefits to General
and movement creativity

Substantial benefits to
confidence and competence



Physical Education and Sport Pedagogy



ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/cpes20>

Use of Parkour in Primary School Physical Education to Develop Motor Creativity, Divergent Thinking, Movement Competence, and Perceived Motor Competence

September 2024

Resilience

A close-up photograph of an elephant's face, focusing on its eye and the surrounding wrinkled, textured skin. The eye is a striking reddish-brown color with a dark pupil. The skin is deeply creased and has a pebbled texture, showing signs of age and weathering. The lighting is natural, highlighting the intricate details of the elephant's skin.

Overcoming adversity through construction of positive challenges using physical literacy.

- This study revealed that **physical literacy is an excellent predictor of resilience in children.**

- This supports that physical literacy enriched pedagogy applied to movement sectors may be a strong facilitator of **children's ability to overcome adversity.**

PERSPECTIVE article

Front. Public Health, 19 November 2019

Sec. Children and Health

Volume 7 - 2019 |

<https://doi.org/10.3389/fpubh.2019.00346>

This article is part of the Research Topic

Pre- or Post- School Influences on Learning Adaptations, Risks and Disabilities in Children and Adolescents: Overlapping Challenges for Public Health, Education and Development

[View all 9 Articles >](#)

Physical Literacy and Resilience in Children and Youth



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Michael Ungar¹



Patrice Aubertin²



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³ Faculty of Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Background: There is growing interest in the relationship between physical and psychosocial factors related to resilience to better understand the antecedents of health and successful adaptation to challenges in and out of school, and across the lifespan. To further this understanding, a trans-disciplinary approach was used to investigate the association between the multidimensional constructs of physical literacy and resilience in children at a key stage in their development.

<https://www.frontiersin.org/articles/10.3389/fpubh.2019.00346/full>

How do we **construct positive challenges** in movement settings and foster resilience?

Philip Jefferies

Physical literacy and resilience:
The role of positive challenges

Littératie physique et résilience :
Le rôle des défis positifs

ABSTRACT

Physical literacy is the competence to perform movement skills combined with the motivation, confidence, and understanding to value and take responsibility for engagement in physical activity across the lifespan. It has also been defined as the foundational attributes for beginning and maintaining physical activity, and therefore the capacity for an active lifestyle. The benefits of physical literacy include enhanced health through increased physical activity, and also improvements in confidence and participation, as individuals recognise their movement competencies and engage more fully with their environments. Growing recognition of the value of physical literacy has led to global drives to involve physical literacy in multiple sectors including broadening early childhood and elementary curricula to aid child development, with proponents arguing for it to be emphasised similarly to literacy and numeracy. In

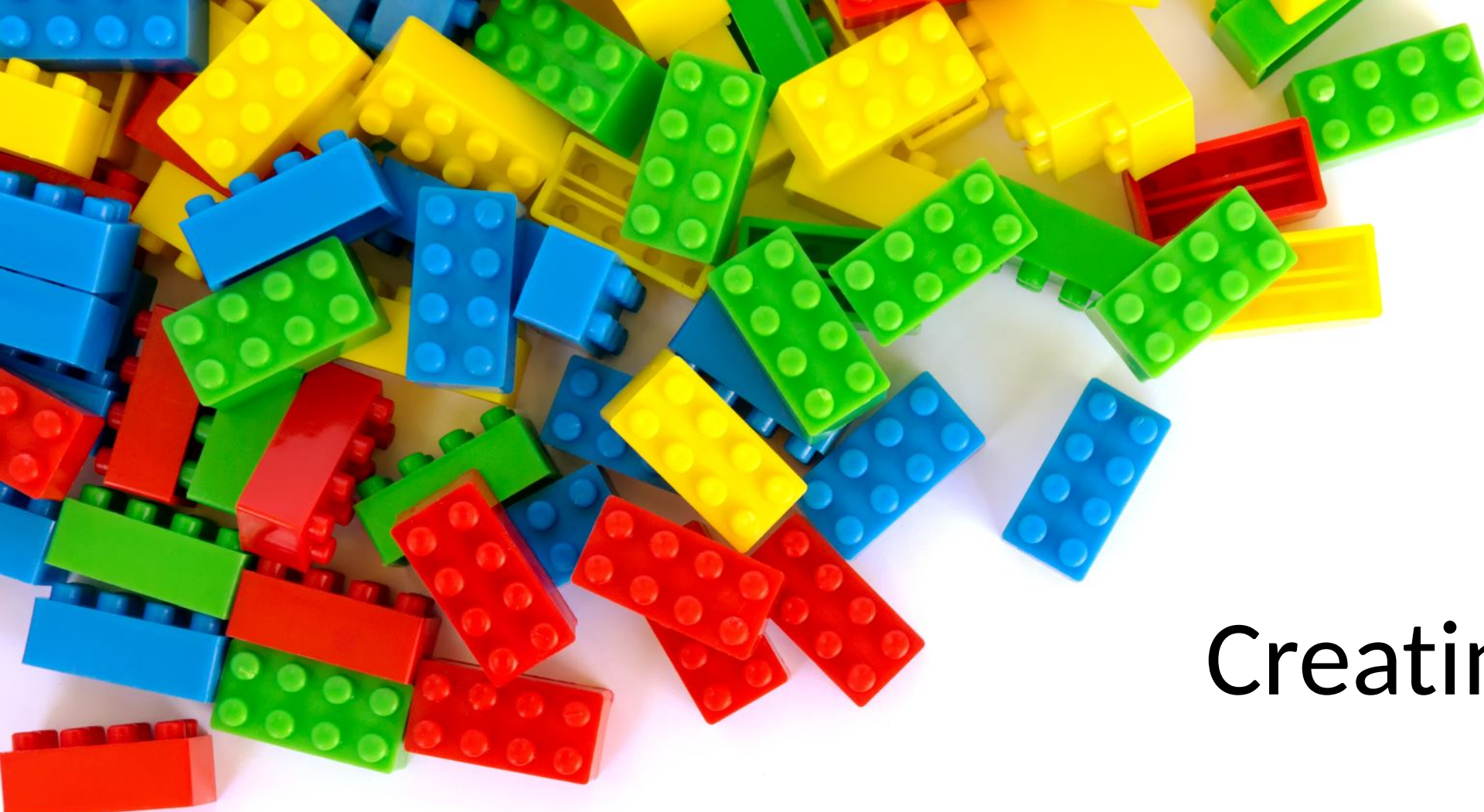
avoid poor default trajectories and instead achieve positive outcomes (through recovery, adaptation, or transformation). This paper explores links between the two desirable and promising constructs of physical literacy and resilience, considering their conceptual interplay and the shared notion of engaging 'positive challenges' that may be essential for nurturing important resources when facing subsequent adversity. This connection provides the base for further robust empirical studies that involve both physical literacy and resilience and for the development of holistic resilience programme development.

KEYWORDS

Physical literacy; Resilience; Challenge; Adversity; Movement; Physical education; Curriculum.

RÉSUMÉ

La littératie physique est la compétence des individus pour exécuter des mouvements, aptitude combinée à la motivation, à la confiance en soi et à la compréhension nécessaires pour valoriser et assumer la responsabilité de s'engager dans une activité physique tout au long de la vie. Elle a également été définie comme les attributs fondamentaux pour commencer et pour maintenir une acti-



Creating Agents

Physical literacy aids people in their ability to self organize their own behavior in adverse contexts (challenges to movement identity).

When the world stops: The impact of COVID-19 on physical activity and physical literacy

Natalie E. Houser, M. Louise Humbert, Dean Kriellaars, and Marta C. Erlandson

Abstract: Matched pre-during pandemic comparison (160 children) revealed a substantial reduction in physical activity ($p < 0.001$, $r_{rb} = 0.83$), environmental participation ($p = 0.046$, $r_{rb} = 0.16$), movement valuation ($p < 0.001$, $r_{rb} = 0.61$), and parent perceptions of children's physical literacy ($p < 0.001$, $r_{rb} = 0.56$). Examining physical activity trajectories, higher pre-pandemic physical literacy protected children from pandemic related activity decline. Emerging from the pandemic, interventions should address children's eroded belief in movement and consider physical literacy levels of children in individualizing movement opportunities for restoration of activity levels.

Novelty:

- A substantial reduction in physical activity was associated with children who had lower physical literacy and resulted in reductions in children's valuation of movement.

Key words: children, parents, pandemic, perceptions, movement valuation, trajectory.

Protective
Effect
of Physical Literacy

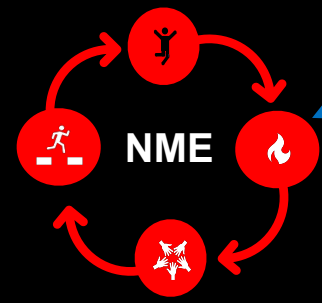
- PA • 85% of children reduced physical activity levels
- PA • The number of children not meeting minimum PA standards DOUBLED
- PL • Children's belief in the value of movement eroded substantially
- PL • **Children that didn't decrease PA (15%) were physically literate!**
- PL & PA • Similar patterns were observed for their parents

RECREATION, SPORT, VOCATION, PLAY,
PERFORMING ARTS, ACTIVITIES OF DAILY LIVING
AND EVEN VICARIOUS EXPERIENCES

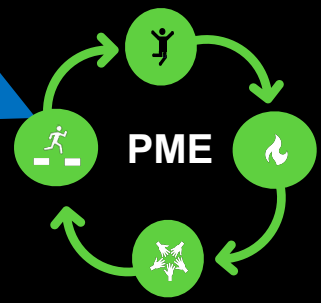


Houser, N.E., Kriellaars, D. (2022) Girls just want to have fun! The competence-confidence-happiness cascade. North American Society for Pediatric Exercise Medicine (NASPEM). Saskatoon, SK. August, 2022. DOI:10.1123/pes.20220-0105

NEGATIVE MOVEMENT EXPERIENCE



NME

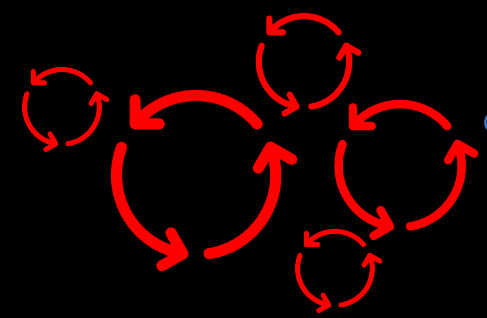


PME

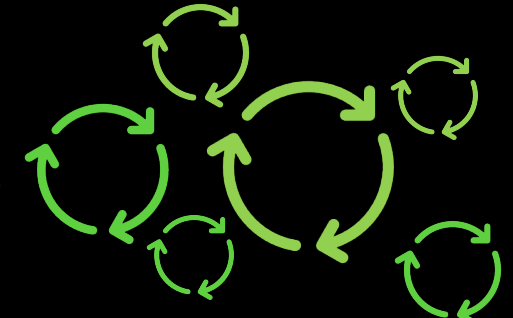
POSITIVE MOVEMENT EXPERIENCE



ACCUMULATION



- net yield



+ net yield



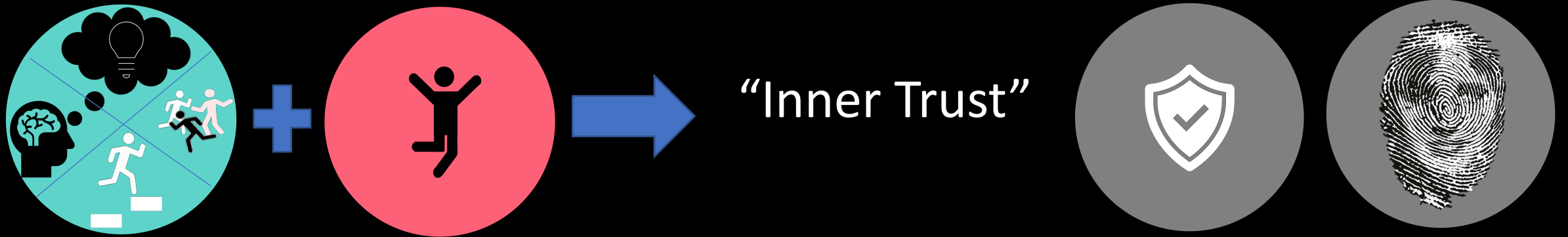
Unhappiness in Physical Activity



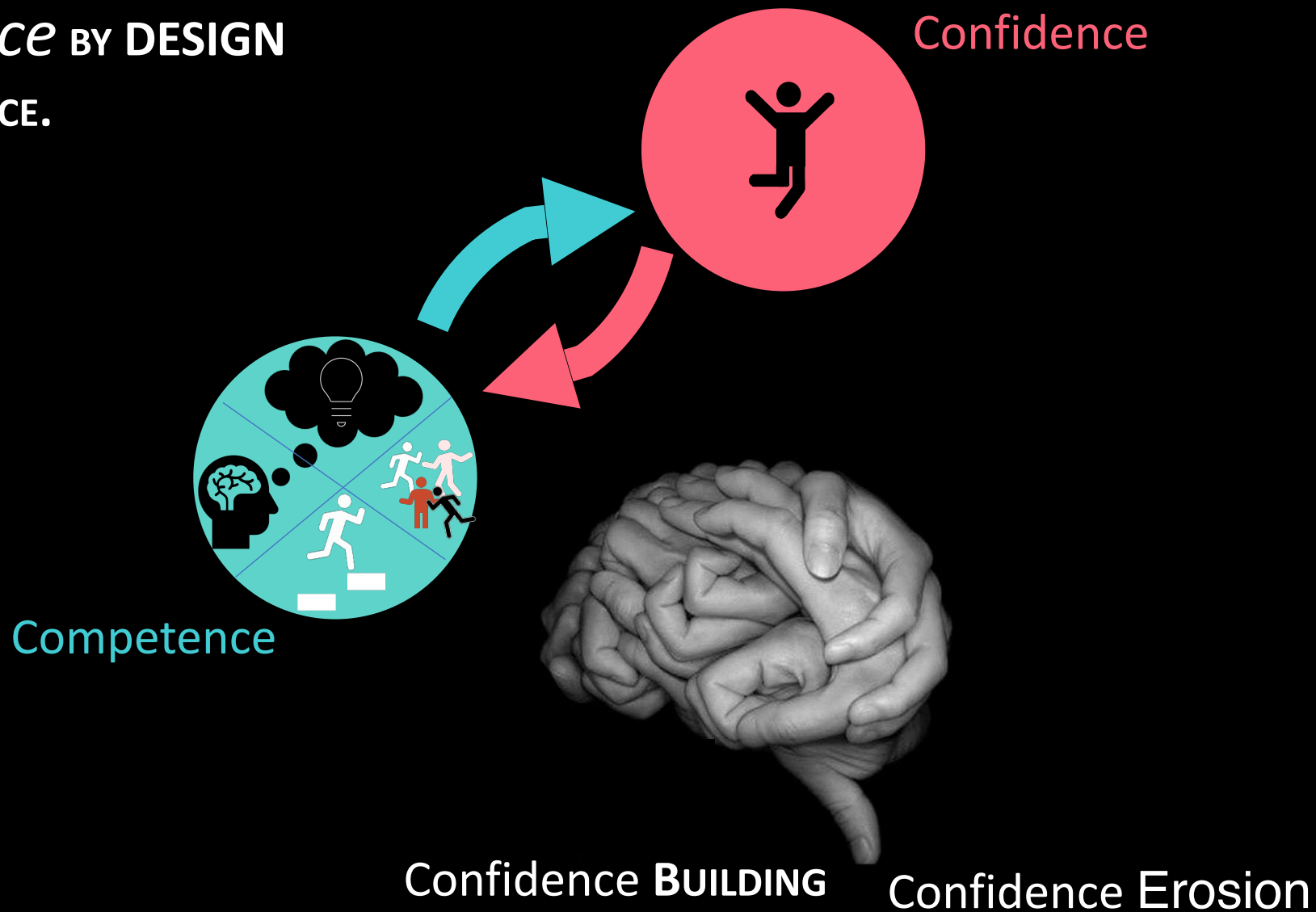
Happiness in Physical Activity

“Inner Trust”

Developing competence & confidence simultaneously creates a “belief in one’s own ability”, instilling pride, and development of one’s movement identity.



Confidence BY DESIGN
NOT BY CHANCE.

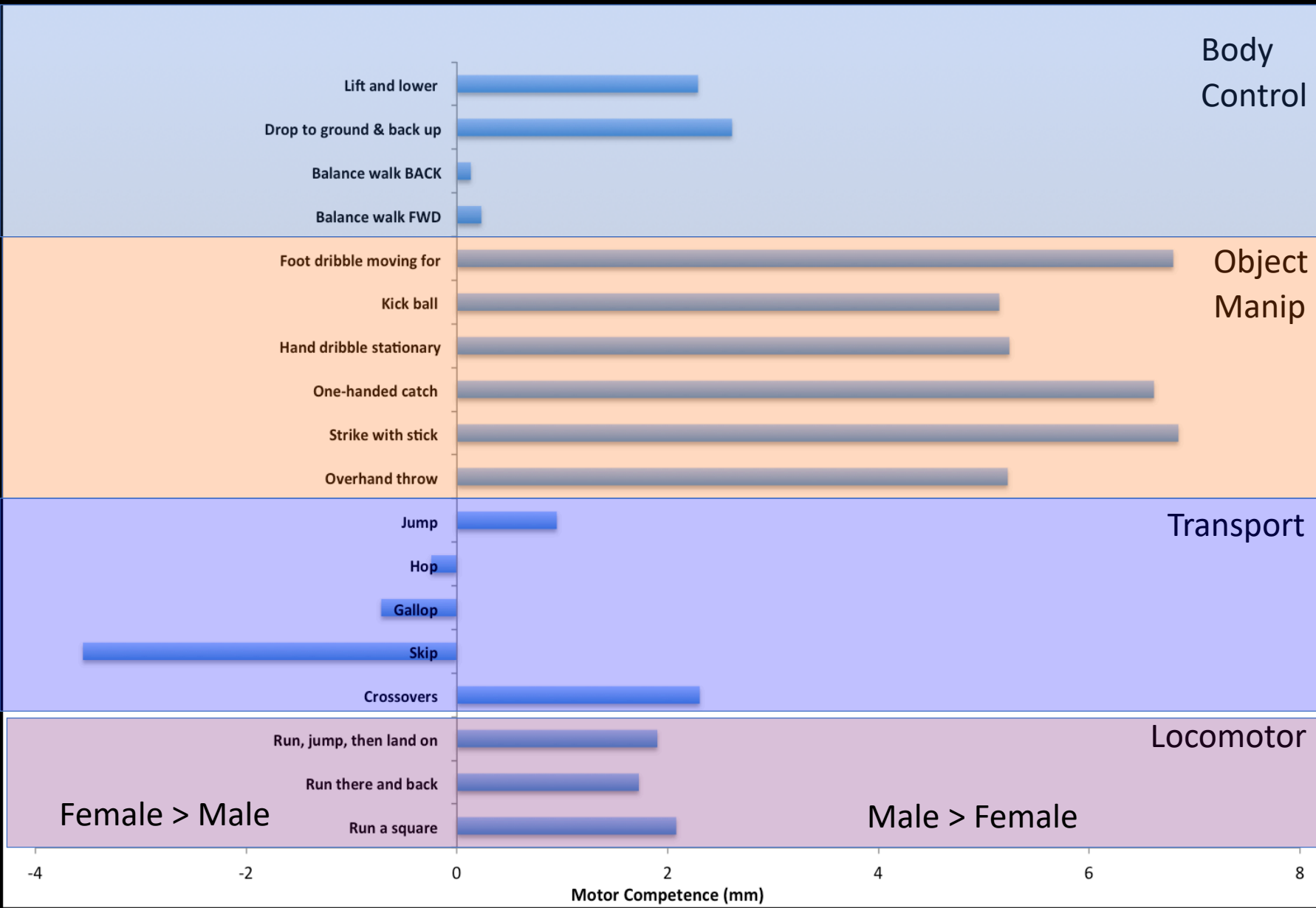


Gender Bias

A photograph showing several arms of different skin tones raised in a fist, symbolizing solidarity and resistance. The hands are positioned in the center and right side of the frame, with the text 'Gender Bias' overlaid on the left and 'Oppression' at the bottom left.

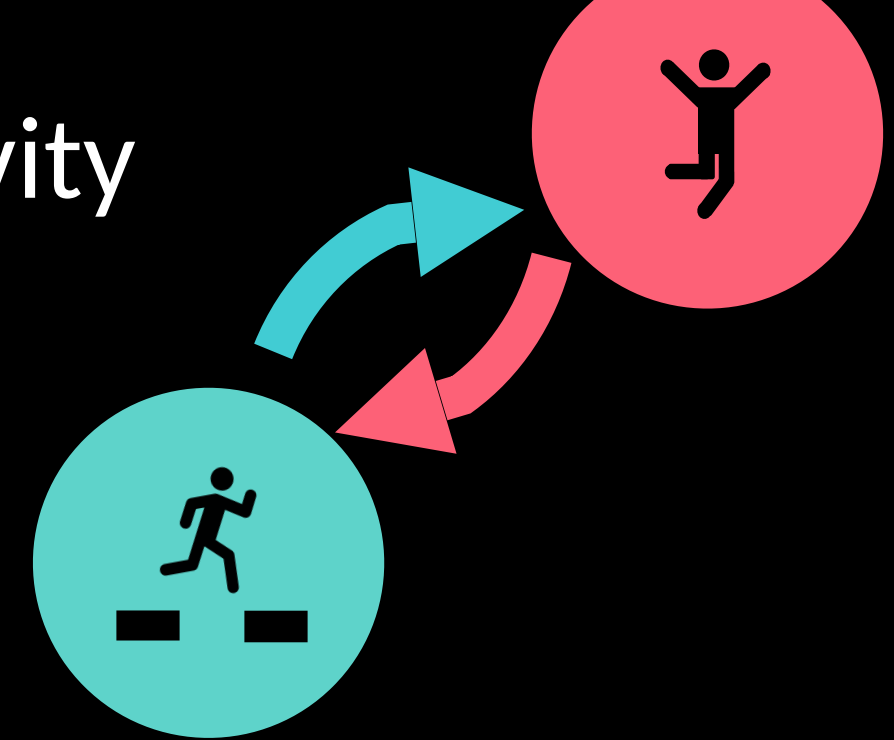
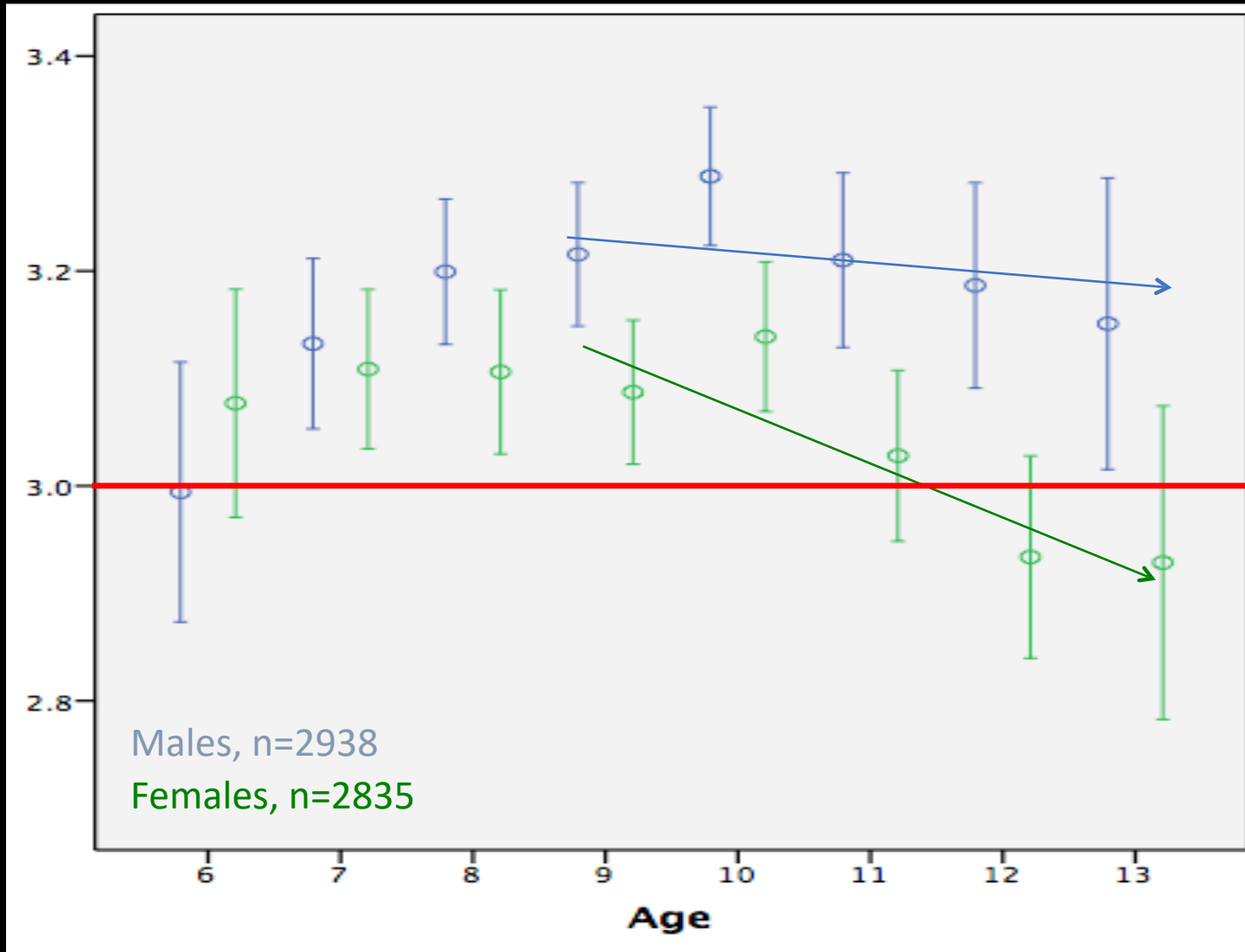
Oppression

Motor Competence in Curricular Linked Skills (n=15,773, My Personal Best, 2014-16)



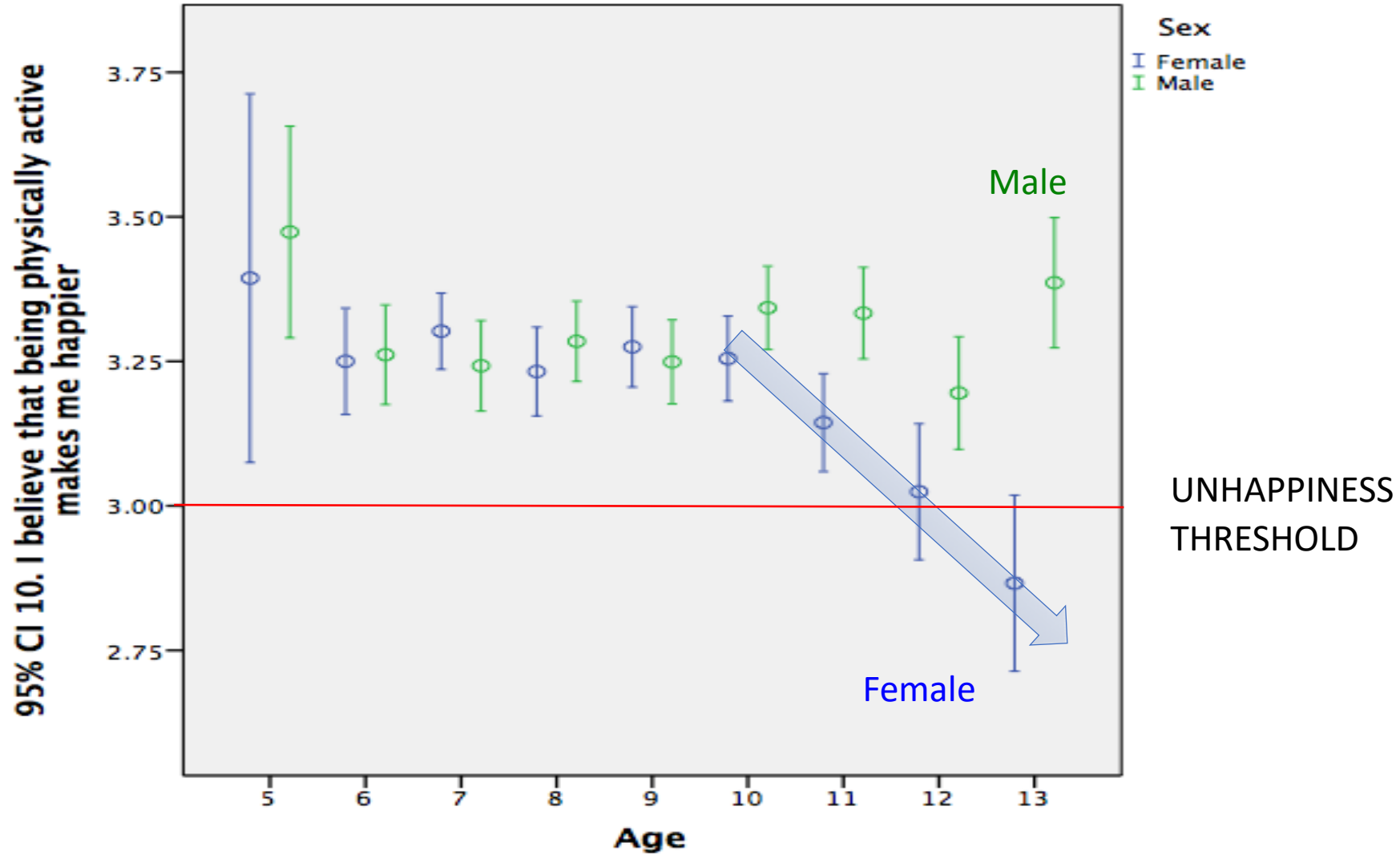
Confidence in Performing Activity

Confidence in activity (mean 95% CI)



Non-confidence
Threshold

HAPPINESS and PHYSICAL ACTIVITY



Using circus in PE
eliminates the gender
gap in movement!

CAI in PE achieves
curricular outcomes.

CAI in PE fosters
creativity.

The Impact of Circus Arts Instruction in Physical Education on the Physical Literacy of Children in Grades 4 and 5

Dean J. Kriellaars
University of Manitoba

John Cairney
University of Toronto

Marco A.C. Bortoleto
University of Campinas

Tia K.M. Kiez
University of Manitoba

Dean Dudley
Macquarie University

Patrice Aubertin
Ecole National de Cirque

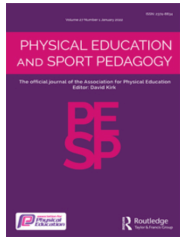
Objective: To examine the impact of circus arts instruction in physical education (PE) on the physical literacy of children in Grades 4 and 5. **Methods:** A clustered, quasi-experimental design was used comparing children in schools with circus arts instruction in physical education ($n = 101$) with children in socioeconomic status-matched schools using standard PE instruction ($n = 110$). Physical literacy assessments performed at the beginning and end of one semester using the Physical Literacy Assessment for Youth tools. **Results:** Significant improvements in motor competence for both groups; endpoint differences favored the circus arts instruction in physical education schools for 15 of 18 movement skills for Grade 5 and 7 of 18 skills for Grade 4 ($p < .05$), with corresponding increases in children's confidence and comprehension of movement terminology, as well as active participation. The gap in motor competence between girls and boys in the circus arts instruction in physical education schools was smaller than in standard PE schools. **Conclusions:** Circus arts instruction enriched PE can effectively aid in the development of physical literacy in children with greater gender equity.

Keywords: confidence, elementary school, gender, motor competence

Evidence supporting physical literacy enriched physical education.

PLitPE developed the psychological domain (affective and cognitive) and significantly improved physical competence.

Concerning sex differences, the intervention yielded an equal and substantive improvement in both males and females in the intervention group.



PHYSICAL EDUCATION AND SPORT PEDAGOGY
The official journal of the Association for Physical Education Education Research

Routledge
Taylor & Francis Group

Physical Education and Sport Pedagogy

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/cpes20>

PLitPE: an intervention for physical literacy enriched pedagogy in Canadian elementary school physical education classes

Alexandra L. Stoddart, M. Louise Humbert, Serene Kerpan, Nicole Cameron & Dean Kriellaars

To cite this article: Alexandra L. Stoddart, M. Louise Humbert, Serene Kerpan, Nicole Cameron & Dean Kriellaars (2021): PLitPE: an intervention for physical literacy enriched pedagogy in Canadian elementary school physical education classes, Physical Education and Sport Pedagogy, DOI: [10.1080/17408989.2021.2014438](https://doi.org/10.1080/17408989.2021.2014438)

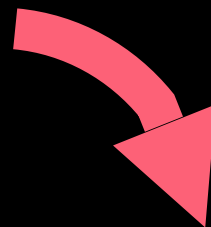
To link to this article: <https://doi.org/10.1080/17408989.2021.2014438>



Emotions



Confidence



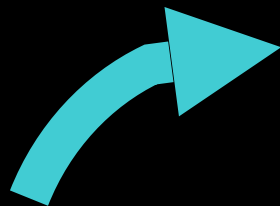
Motivation



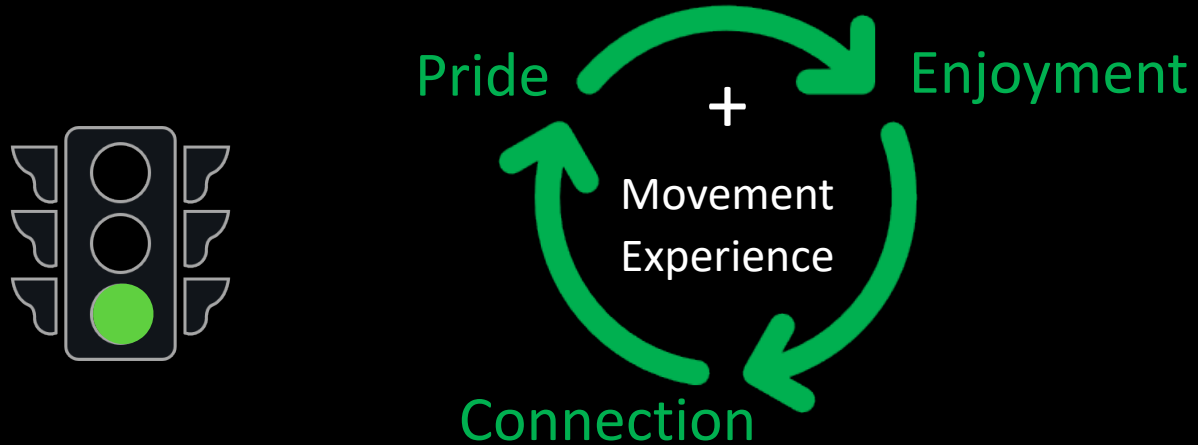
Active
Participation



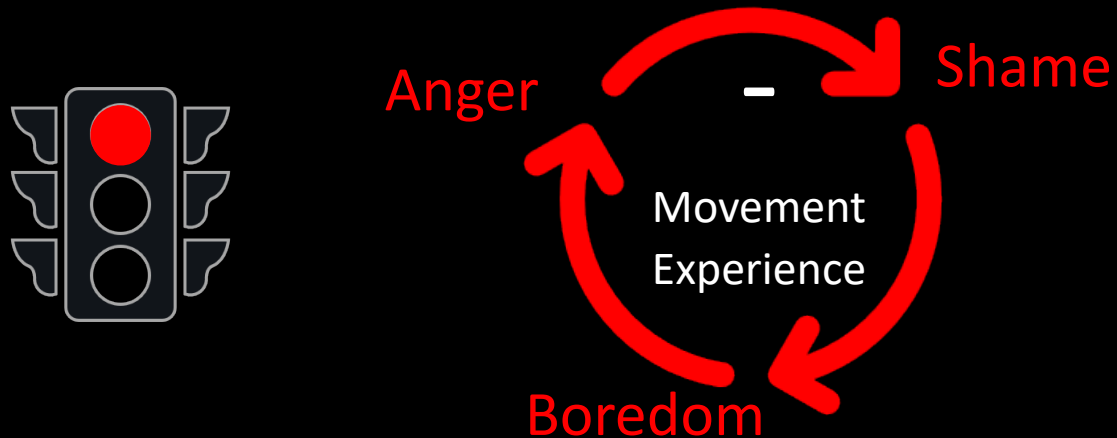
Competence



Activating the engine



De-activating the engine



Using physical literacy as a pedagogical approach can create **positive movement experiences** for **98%** of participants!

Emotional experiences are tied to physical literacy, movement valuation and self-esteem.

 **Applied Physiology,
Nutrition, and
Metabolism**

OPEN ACCESS | Research Article

Investigating the relationship between emotions and physical literacy in a quality physical education context

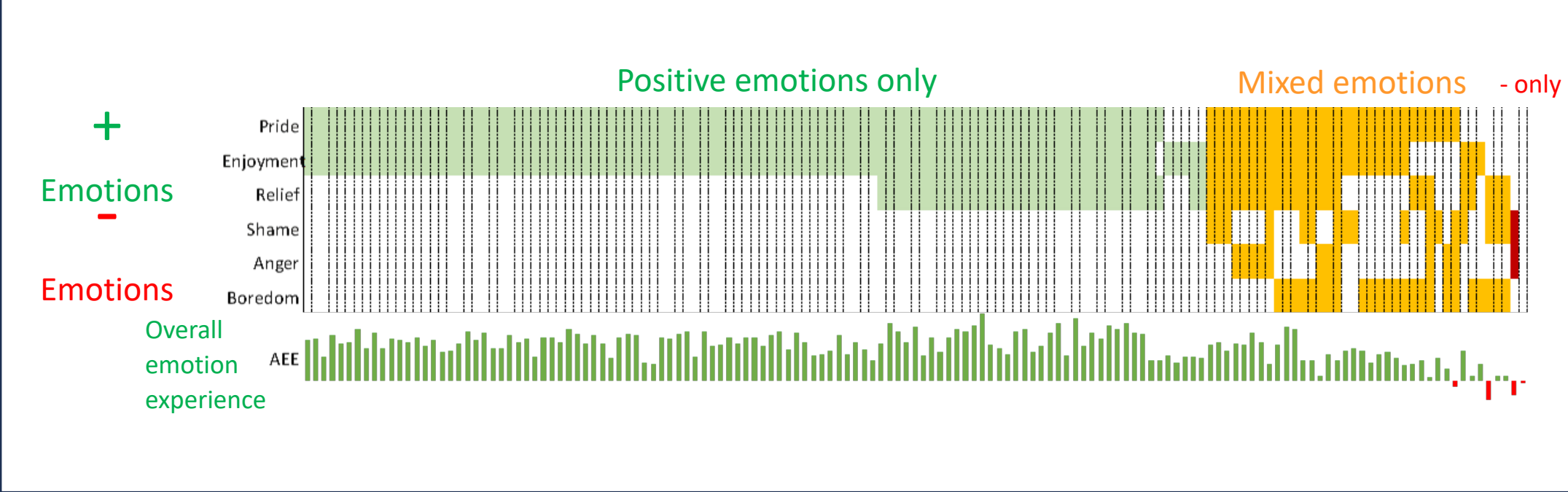
Adam Woolley ^a, Natalie Houser^b, and Dean Kriellaars^a

^aRady Faculty of Health Sciences, University of Manitoba, Winnipeg, MB, Canada; ^bCollege of Kinesiology, University of Saskatchewan, Saskatoon, SK, Canada

Corresponding author: Adam Woolley (email: Adam.woolley@me.com)

Quality Movement Experiences Fueled by Physical Literacy

Positive emotions with negative emotions are protective.



Quality movement experiences were **achieved** through addressing the UNESCO components of quality physical education.

QME success was strongly linked to activation of the **physical literacy cycle**.

<https://www.frontiersin.org/articles/10.3389/fspor.2023.1185680/full>

ORIGINAL RESEARCH article

Front. Sports Act. Living, 25 May 2023
Sec. Movement Science
Volume 5 - 2023 |
<https://doi.org/10.3389/fspor.2023.1185680>

This article is part of the Research Topic

Traditional Sporting Games and Play in physical education: Enhancing Cultural Diversity, Emotional Well-Being, Interpersonal Relationships and Intelligent Decisions, volume II

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“Where was this when I was in Physical Education?” Physical literacy enriched pedagogy in a quality physical education context



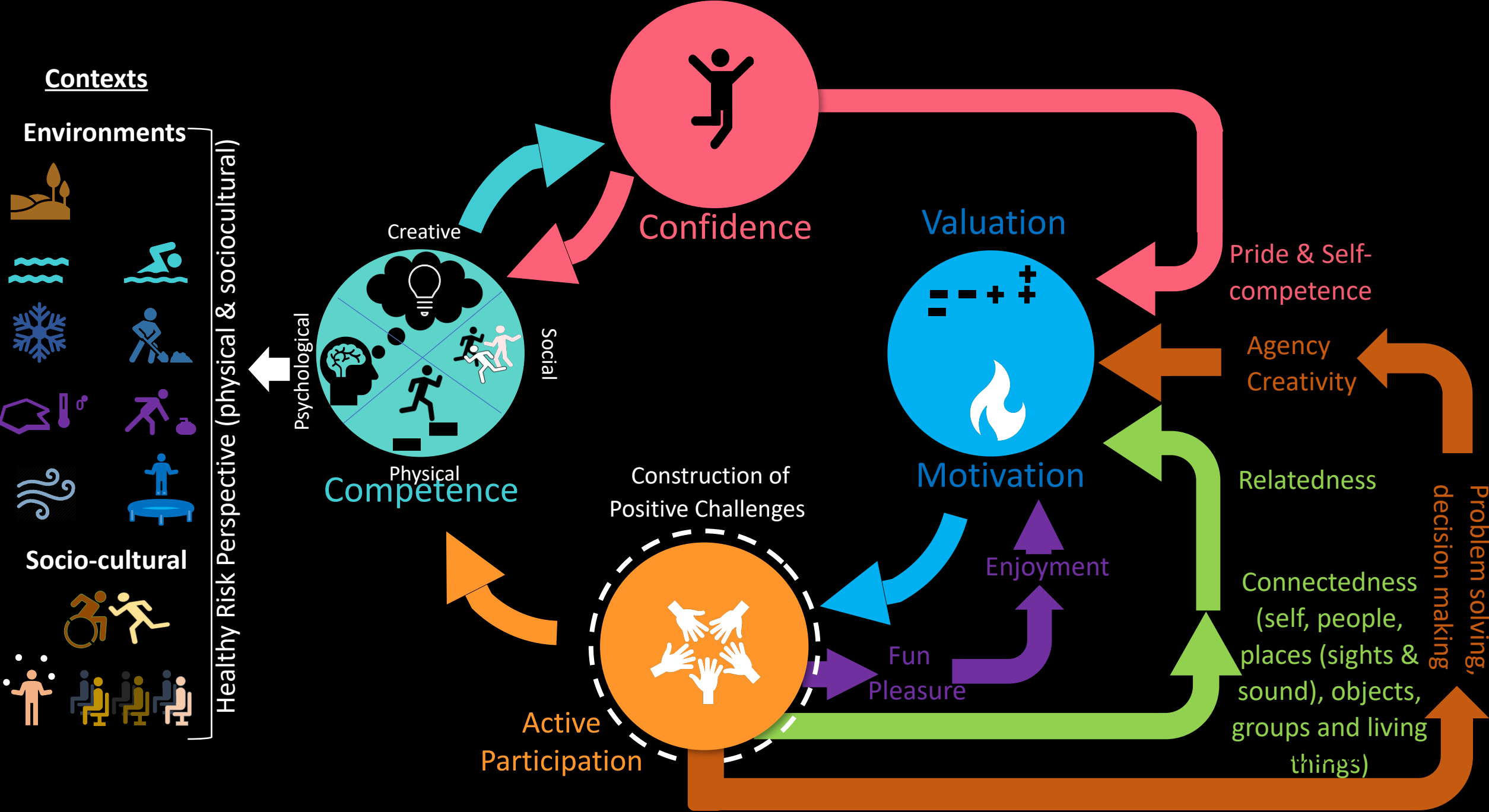
Natalie Houser*



Dean Kriellaars

College of Rehabilitation Sciences, University of Manitoba, Winnipeg, MB, Canada

Introduction: In recent years, there has been a call to restructure physical education (PE) practices and outcomes. A physical literacy enriched pedagogy approach would support this change by more intentional design of lesson planning that includes concurrent development of competence & confidence and inclusion of students of all levels of ability, leading to holistic development of the student. Despite this potential, there is little research to date that outlines PE pedagogical practices with physical literacy as a foundation. The purpose was to explore pedagogical practices and perspectives from elementary PE teachers through a physical literacy enriched pedagogy lens in a high-quality PE context.



Human Sustainability



Quality movement experiences foster human sustainability and flourishing using physical literacy as the compass.



Planning for a positive user experience

Physical Literacy Enriched Environmental Design (PLEED)

PLEED Principles

1. A level of challenge for all levels of ability
2. A type of challenge for all interests
3. Movement intersection
4. Movement opportunity
5. Affordances in movement contexts
6. 4 domain “neutral” risk approach
7. Connection



1. A level of challenge for all levels of ability

- Developing movement spaces that allow for all individuals to find a level of challenge suitable to them.
- A level of challenge for all levels of ability refers to not only **physical** ability, but also **social**, **creative** and **psychological** abilities.



2. A type of challenge for all interests

- People's interests vary, and if they are unaware of the possibilities they are constrained by awareness.
- Within a movement space, there should be different engagement opportunities that cater to different interests, allowing for all users to participate and have a positive movement experience.



3. Movement intersection



- We often design spaces segregated by function, level of ability, or cultural or gender norms.
- Movement intersection is a design approach to foster proximity of many types of movement, to activate the physical literacy engine.

4. Movement opportunity

- In a movement suppressed culture, the simple addition of convenient access to movement opportunities, usually provides increased movement.
- Giving everyone an equal opportunity to move within the many environments in which they interact, which may include prompts/encouragement to engage in movement opportunities

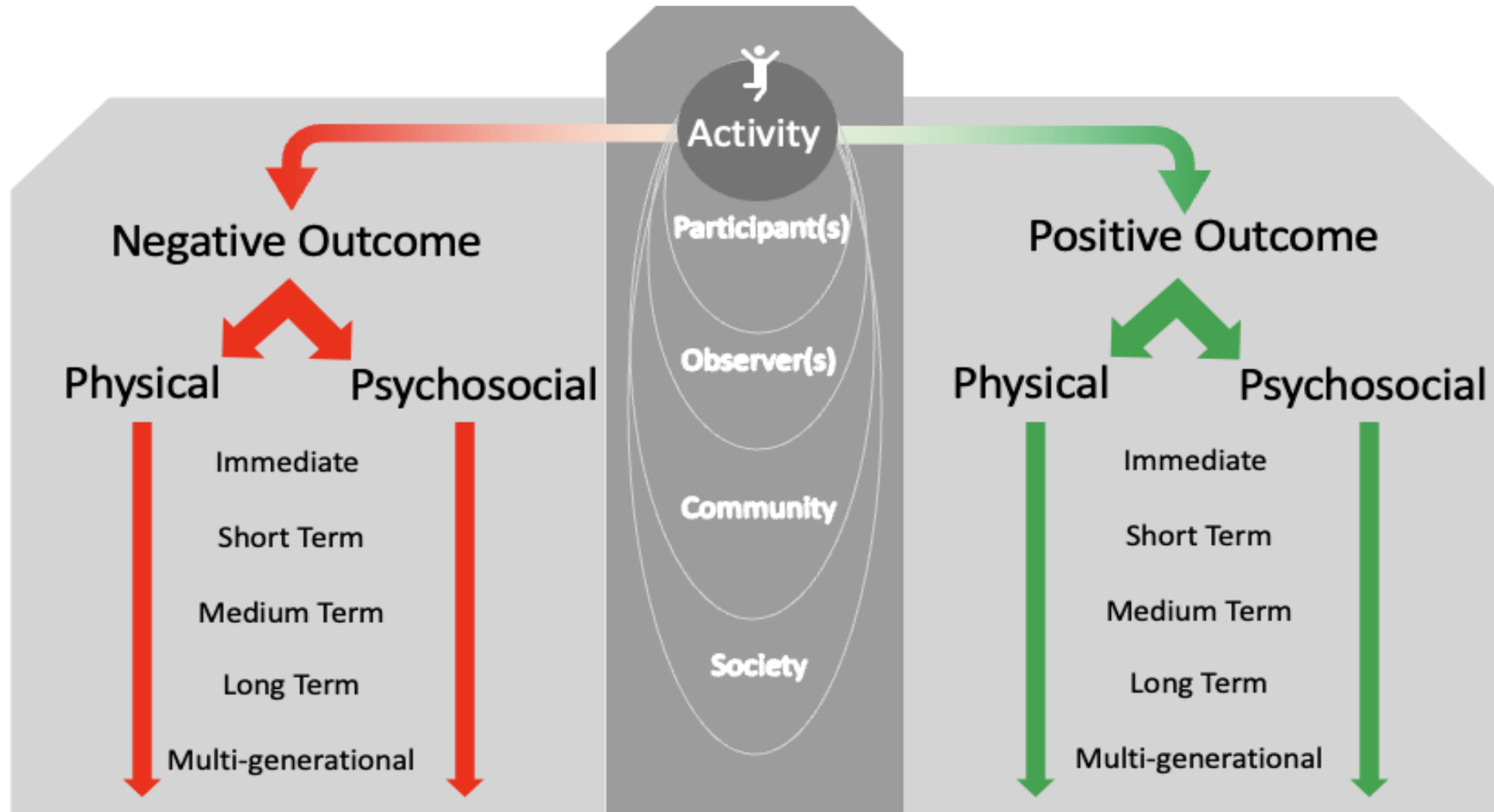


5. Affordances in movement contexts

- Encourage individuals to view spaces with the idea of “how can I use this space” or “what can I use this space for”
- If we set individuals up to view their environment as an affordance, the space can be used in an infinite number of ways, and in a way that each individual chooses.



6. Neutral risk





Read the summary.

https://www.unicef.ca/sites/default/files/imce_uploads/UTILITY%20NAV/TEACHERS/DOCS/GC/The_Convention_on_the_Rights_of_the_Child_abbreviated_version.pdf

Article 27 – Living Standard

The right of every child to a standard of living adequate for the child's **physical**, mental, spiritual, moral and social development.

Article 31- Leisure

The right of the the child to rest and leisure, to **engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts.**

The right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and **equal** opportunities for cultural, artistic, recreational and leisure activity.

Article 29 - Education Goals

The development of the child's personality, talents and mental and **physical** abilities to their fullest potential;

The development of respect for human rights and fundamental freedoms;

The preparation of the child for responsible life in a free society, in the spirit of understanding, peace, tolerance, equality of sexes, and friendship among all peoples, ethnic, national and religious groups and persons of indigenous origin;

The development of respect for the natural environment.

Article 12: The Voice of the Child

Nothing for us without us!

Listening to **The Voice of the Child**

Read the full paper.

<https://www.frontiersin.org/articles/10.3389/fspor.2023.1125072/full>

7845 student's voices, aged 6 to 13

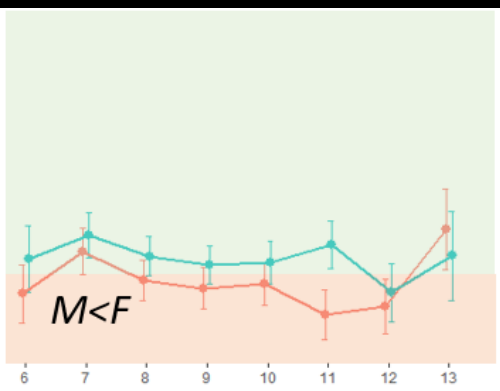
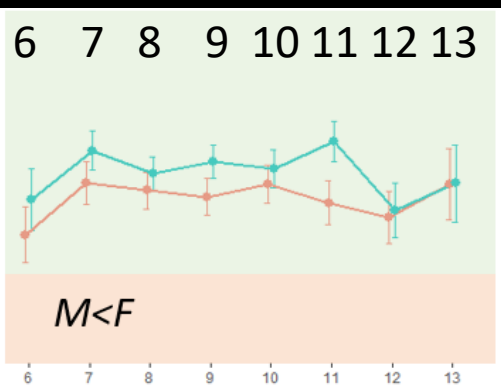
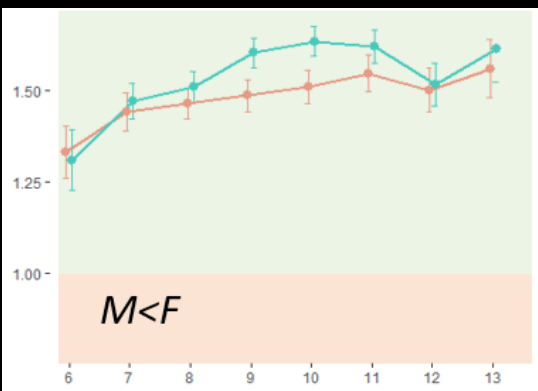
3 Contexts: School, Family, Friends

3 Literacies: Movement, Read/Write, Math



AGE

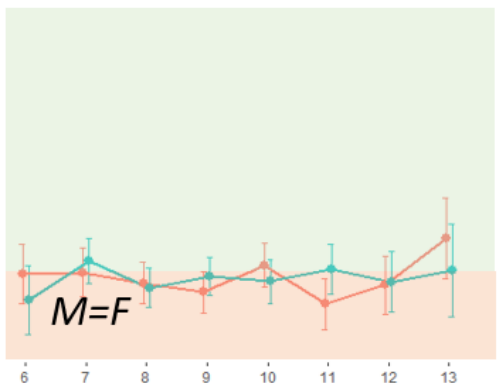
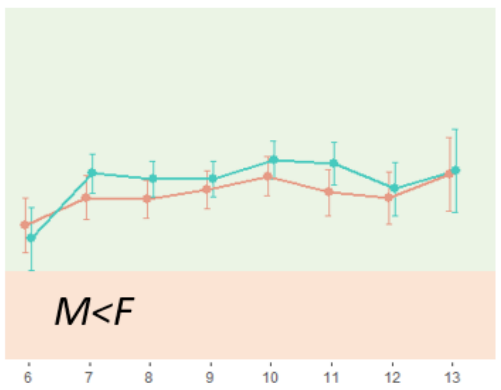
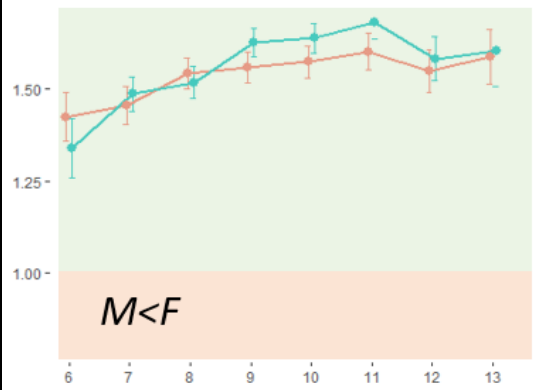
Literacy
(Reading/Writing)



Strongly Valued

Devalued

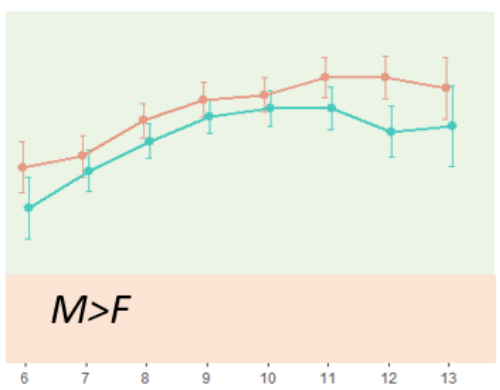
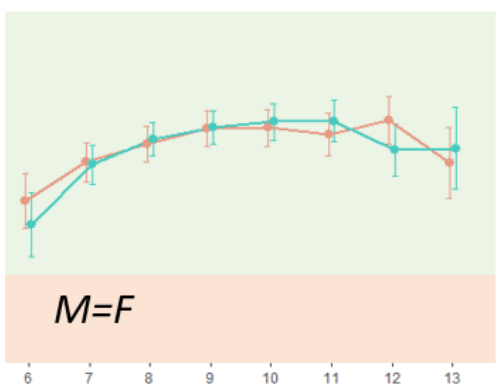
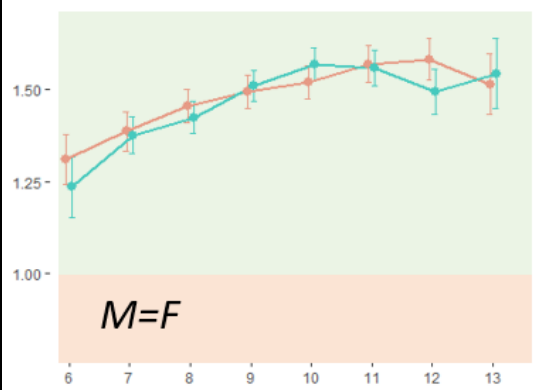
Numeracy
(Math)



Strongly Valued

Devalued

Physical Literacy
(Movement)



Strongly Valued

Devalued

SCHOOL

FAMILY

FRIENDS