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Y Drindod Dewi Sant  
**University of Wales**  
Trinity Saint David

*Trawsnewid Addysg; Trawsnewid Bywydau*  
*Transforming Education; Transforming Lives*

# The impact of SKIP- Cymru (Successful Kinaesthetic Instruction for Pre-schoolers- Wales) on Foundation Phase Children in Wales

Amanda John



[www.uwtsd.ac.uk](http://www.uwtsd.ac.uk)

# The Foundation Phase

- Introduced in 2008
- Age 3 to 7
- Play based approach
- 7 Areas of learning
- Holistic approach
- Child and adult led
- Indoor and outdoor learning



# No PE?



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# *Physical Literacy*

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

*Whitehead, M. 2016.*



## Education 3-13

International Journal of Primary, Elementary and Early Years Education

ISSN: 0300-4279 (Print) 1475-7575 (Online) Journal homepage: <http://www.tandfonline.com/loi/rett20>

## The Foundation Phase in Wales – a play-based curriculum that supports the development of physical literacy

N. Wainwright, J. Goodway, M. Whitehed, A. Williams & D. Kirk



## Physical Education and Sport Pedagogy

ISSN: 1740-8989 (Print) 1742-5786 (Online) Journal homepage: <http://www.tandfonline.com/loi/cpes20>

## Laying the foundations for physical literacy in Wales: the contribution of the Foundation Phase to the development of physical literacy

Nalda Wainwright, Jackie Goodway, Margaret Whitehead, Andy Williams & David Kirk

# Findings

- Schools were implementing the curriculum with fidelity
- Links between physical competence and their intellectual development
- Independent motivated learners
- Progress in the development of Physical Literacy
- Children were **NOT** developing all aspects of their physical competence (FMS) - limited teacher knowledge and understanding in this area

# Findings

- FP children were developing their locomotor skills
- However, despite having taught sessions and lots of play pupils did **not improve object control skills**
- Teachers did not know **how** to teach these skills



# Why is this an issue?

- FP children are at the phase of motor development where they are developing their FMS, yet this wasn't happening in the FP
- Without this foundation in the early years, an individual is less likely to participate in a variety of physical activity contexts in later life
- A common misconception is that children 'naturally' learn FMS, however they need to be taught, reinforced and practiced in the correct environment

# Why is this an issue?

***Developmental models and research in the field of motor development indicate the importance of motor skill development in early childhood.***

- **Seedfelt (1980)** - Proficiency barrier
- **Clark and Metcalf (2003)** - 'Base camp' of skills for a 'Mountain Range' of Motor Development
- **Stodden et al. (2008)**- proposed synergistic relationships among physical activity, motor competence, perceived motor competence, health-related physical fitness, and obesity
- **Barnett et al. (2009)**- OC skills are associated with and predict physical activity in adolescent
- **Robinson et al. (2015)**- Motor competence and PA behaviors should be established in early life
- **Barnett et al. (2016)** –Importance of Fundamental Motor skills (FMS)
- **Hulteen et al. (2018)** –Foundational movement skills for physical activity across the lifespan

# This has serious implications for child development



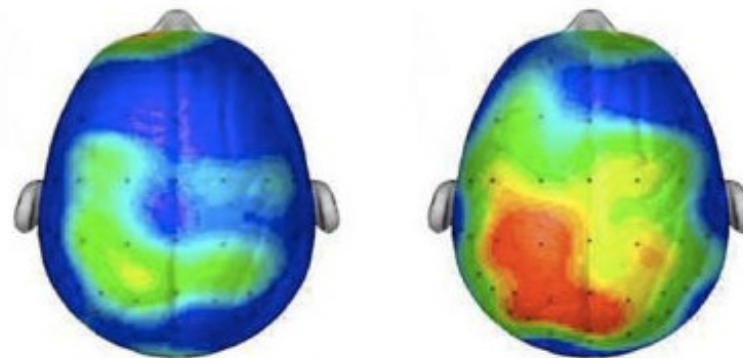
## Sensorimotor integration



# Brain development

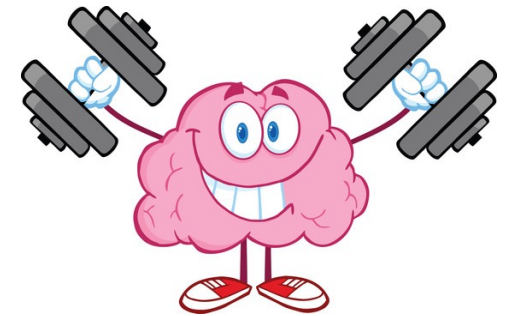
- Children are more likely to be delayed in movement coordination if their early sensory-motor development has been compromised
- Movement is the most important function of the brain- a key stimulus to brain development is movement & physical activity
- Critical period for sensory integration is between the ages of 3 and 7

Composite of 20 student brains taking the same test



After sitting quietly

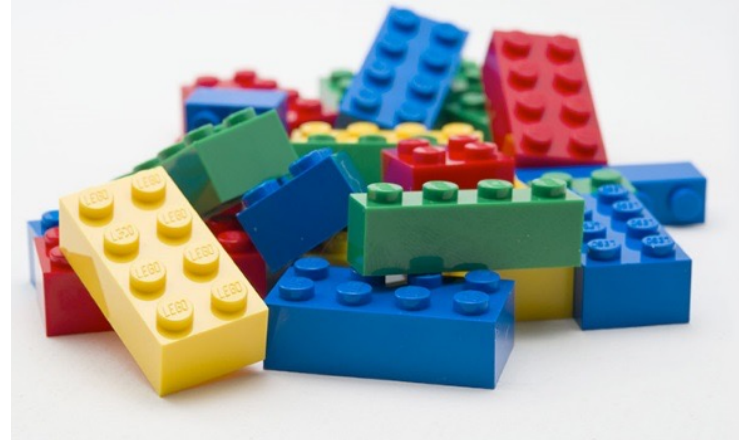
After 20 minute walk



# Early childhood development



- Children do not just ‘magically’ learn how to perform FMS; they must be taught and reinforced.
- FMS are the building blocks to more advanced movement skills.



# Early childhood development

- Development of 'physical competence' in the early childhood years is critical
- Without FMS as a base for physical competence, children are unlikely to develop the **motivation** and **confidence** that will encourage them to engage in movement/ physical activity
- Links between early physical competence and engagement in physical activity in later life
- FP children 'preoperational' phase and egocentric- 'Magic Window'
- Strong research to suggest that children in areas of socio-economic deprivation are developmentally delayed in their FMS

# Project SKIP

(Successful Kinaesthetic Instruction for Pre-schoolers)

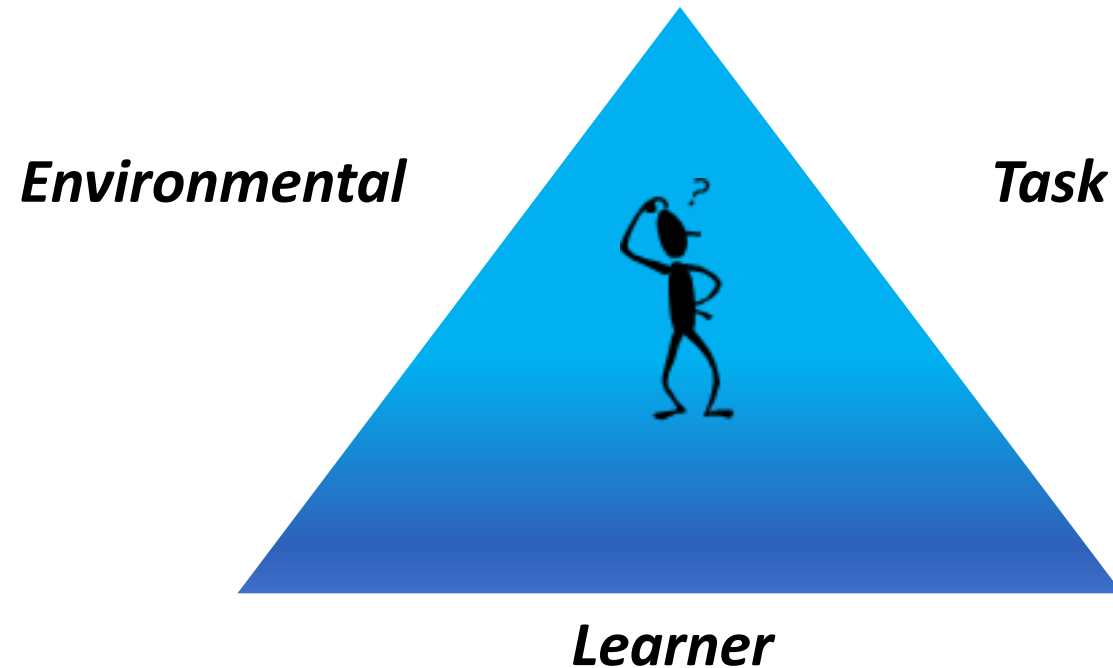


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- Developed by Professor Jackie Goodway - over 20 years research
- Motor skill intervention- developmentally appropriate activities to develop motor competence
- 8-12 weeks/ 2 x 45 minute sessions per week
- Can SKIP '*plug the gap*' and help develop OC skills in the Foundation Phase?

# Theory

## Dynamic Systems Theory and Newell's Constraints theory (DST)



# Aim of the Study and Research Questions

***The aim of the study*** was to examine the impact of an 8-week SKIP intervention on Foundation Phase Children in West Wales

## Research Question 1

Are there pre-test differences by group (*SKIP, Control*) and gender (*Boys, Girls*) for Fundamental Motor Skills (FMS) raw score total, Locomotor (LM) raw score total and Object Control (OC) raw score total?

## Research Question 2

What is the influence of the SKIP intervention on FMS total scores and OC total scores from pre-test to post-test?

## Research Question 3

To what extent did the SKIP group retain intervention effects from post- test to a retention test four weeks later?

# Research Design and Methods

## Participants and Settings

- 3 schools in West Wales
  - School A- Researcher and PE tutor
  - School B and C- School staff and Sports Development
- 48 Participants (5 to 7 year olds)
- 3 SKIP groups (boys=22) (girls=14)
- 1 Control group (boys=5) (girls=7)



# Ethics

- Ethical approval- UWTSD
- Adhered to BERA ethical guidelines for education
- Consent from schools- head teachers, SLT
- Parental consent
- Child assent



# Quasi- Experimental Design

## SKIP Classes



## Control group



# Research design and Methods

**Independent  
variable**



**Dependent  
variable**



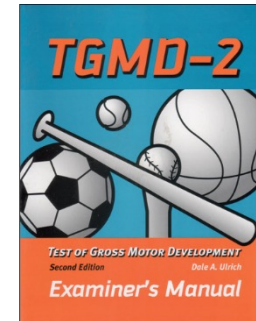
# Research design and Methods

## Intervention- SKIP

- **Dose:** 8 Weeks, 2 x 45 minute sessions per week
- **Content:** 5- 10 minute warm up, 3 stations (10 minutes each), 5 minute cool down

## Instrumentation

- TGMD 3 – standardised test that assesses FMS
- Locomotor- Run, Gallop, Hop, Skip, Jump and Slide
- Object control- One- hand strike, Two hand strike, Dribble, Catch, Kick, Overarm throw and underarm throw





# Results RQ1

Were there pre-test differences by **group (SKIP, Control)** and **gender (Boys, Girls)** for **FMS** raw score total, **LM** raw score total and **OC** raw score total?

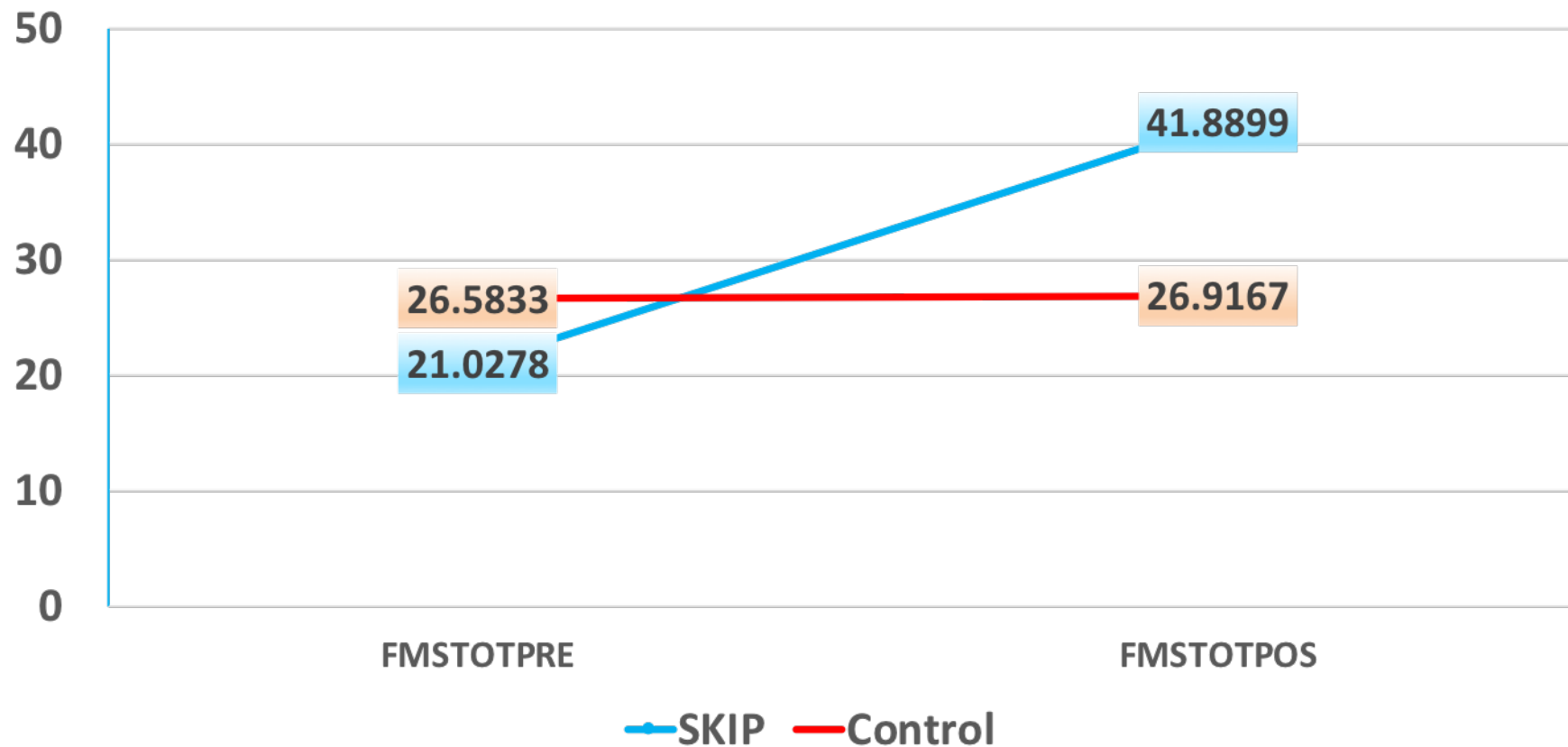
- Group x Gender ANOVA
  - FMS- No difference by group or gender
  - LM- Differences in group. No difference in gender
  - OC- No difference by Group or Gender

# Results RQ2

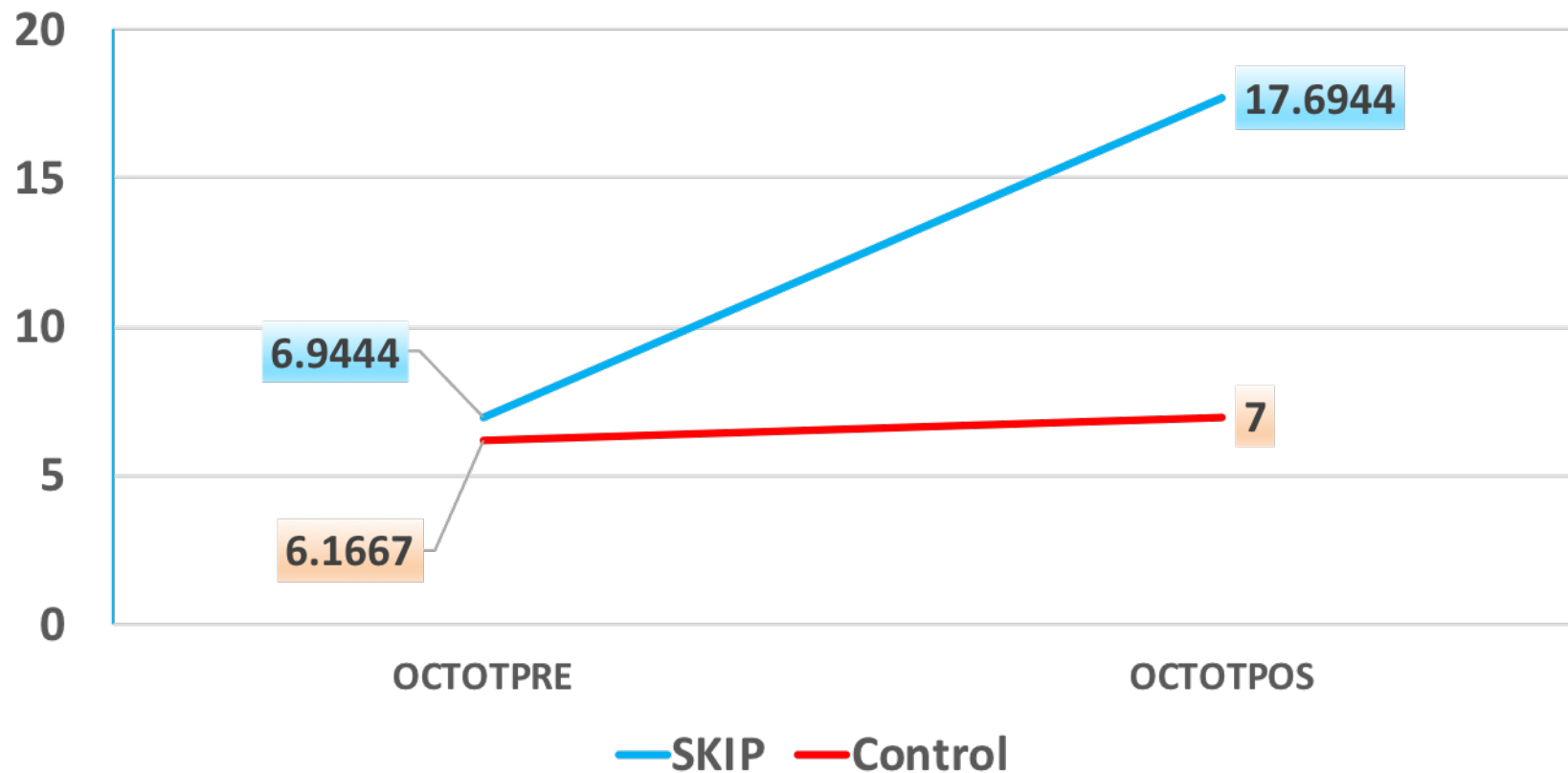
What is the influence of the **SKIP intervention** on **FMS** total scores and **OC** total scores from pre-test to post- test?

- Group x Gender ANOVA with repeated measures and paired sample T-test for pre-test to post- test
  - Significant main effect for time ( $p<.01$ )
  - Significant main effect group x time interaction ( $p<.01$ )

## FMS total pre-test and pos-test



## OC total pre-test and post-test

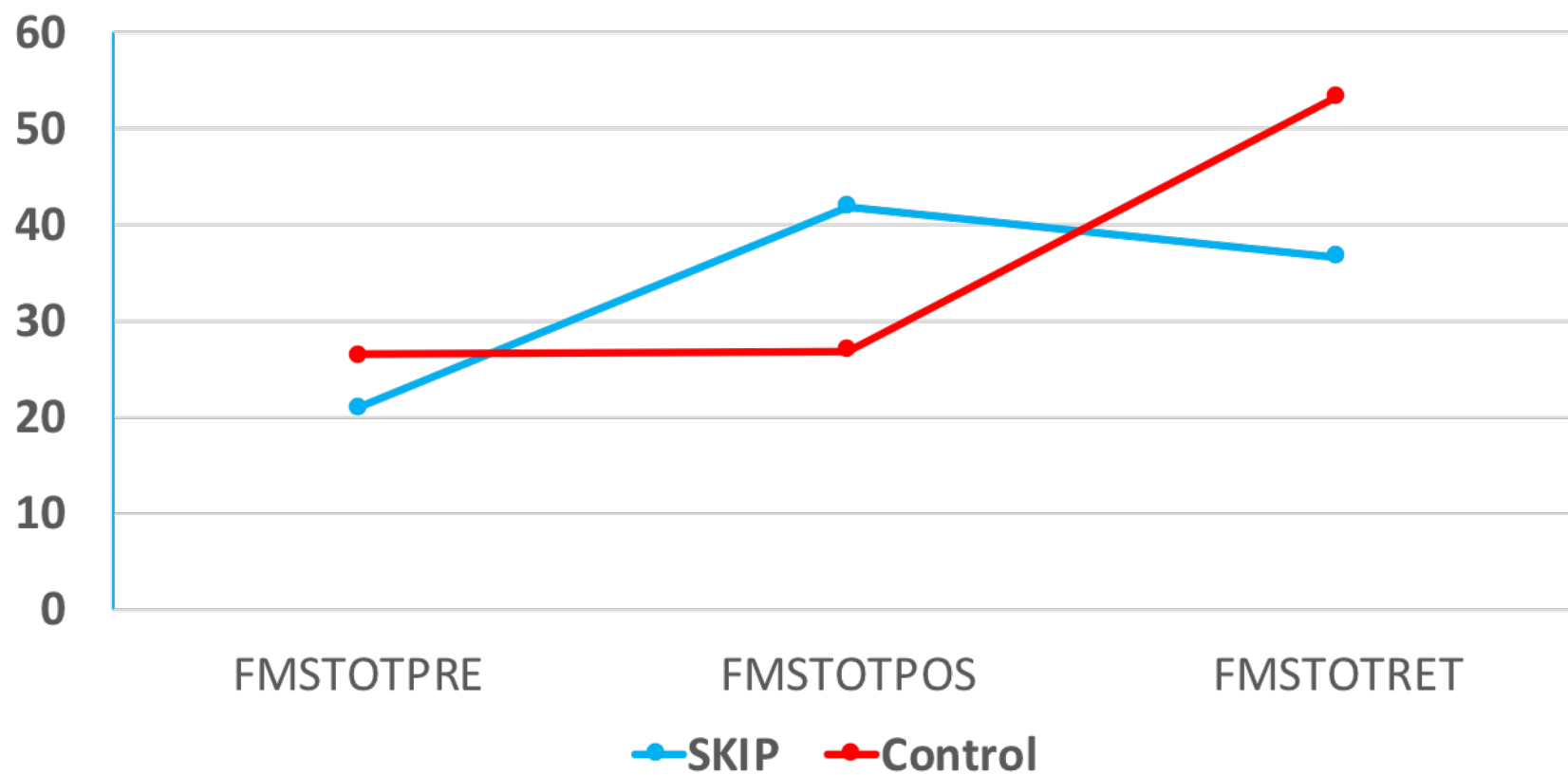


# Results RQ3

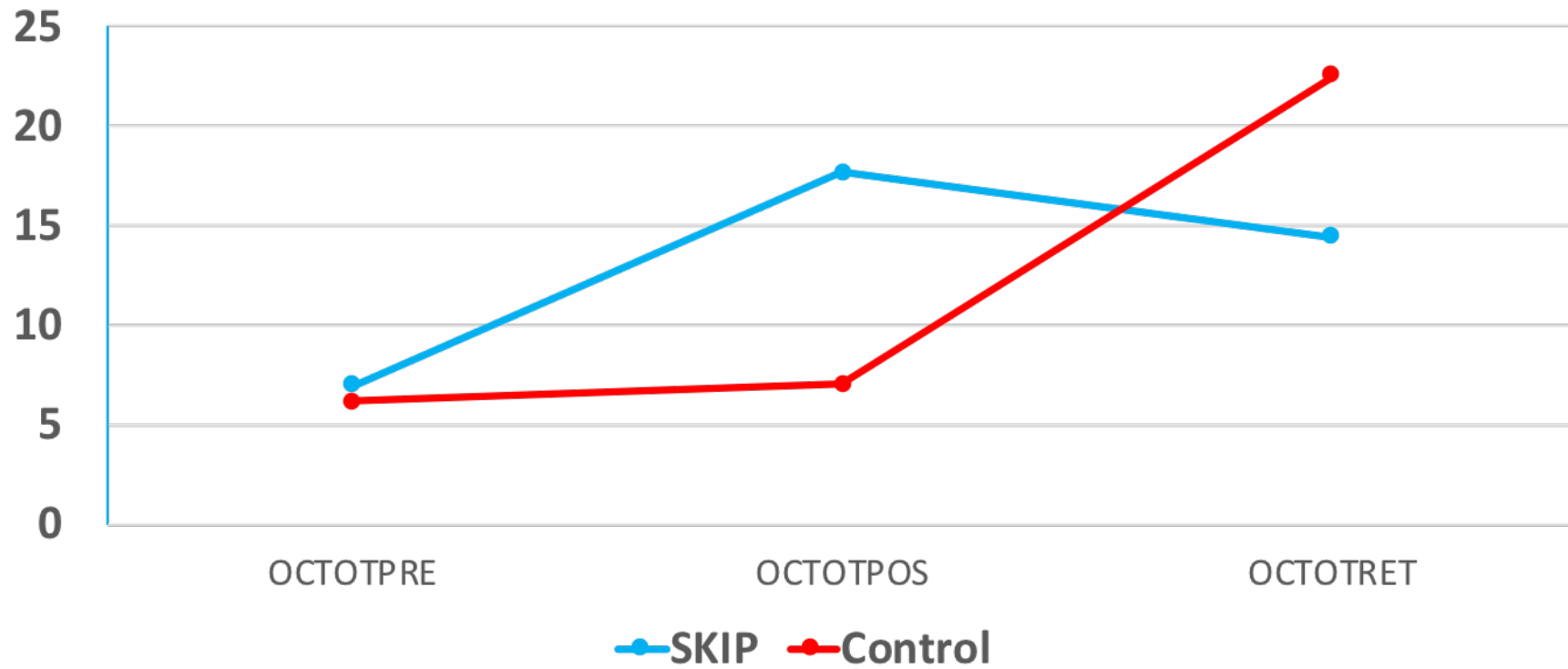
To what extent did the SKIP group retain intervention effects from post- test to a retention test four weeks later?

- Paired sample T-test
  - Significant ( $p<.01$ ) difference from post-test to retention
- **Control group received SKIP**
  - Significant ( $p<.01$ ) difference in FMS (.94), OC (.89) and LM (.90)

## FMS Scores



## OC Scores pre-test, post-test and retention



# SKIP Cymru



ACADEMI CYMRU AR GYFER  
IECHYD A LLYTHRENNEDD CORFFOROL  
WALES ACADEMY FOR  
HEALTH & PHYSICAL LITERACY



SKIP CYMRU®  
SUCCESSFUL KINAESTHETIC INSTRUCTION FOR PRE-SCHOOLS

- Advocacy with leadership
- Training day for Foundation Phase staff
- Mentoring
- Parental engagement sessions and parent bags
- SKIP-Cymru developed to fit a playful pedagogy
- Not resource driven
- 2 x 30- 45 minute sessions per week (5 to 10 min warm up/ cool down, 3 stations/ gardens 10 min each)



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# Future Research

- The effectiveness of SKIP Cymru as a professional development programme
  - Impact on motor competence and physical activity levels
  - Whether Foundation Phase Teachers able to implement SKIP Cymru with Fidelity after receiving the professional development of SKIP Cymru?