Institution: University of Wales Trinity Saint David		
Unit of Assessment: 23		
Title of case study: SKIP-Cymru: Laying the Foundations for Physical Literacy		
Period when the underpinning research was undertaken: 2014-2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Dr Nalda Wainwright	**Role(s) (e.g. job title):** Director: Wales Academy for Health & Physical Literacy	**Period(s) employed by submitting HEI:** 2004 -present
Period when the claimed impact occurred: 2015-2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

Many children and young people are not sufficiently active to achieve physical and mental health benefits. A body of research has identified the significant role that motor competence plays in attitudes and access to physical activity. Research undertaken at UWTSD's Wales Academy for Health and Physical Literacy (WAHPL) identified a gap in pupils' motor skill development in the Foundation Phase in Wales. To address this WAPHL developed and evaluated a programme of professional development in schools and pre-school settings. Successful Kinaesthetic Instruction for Pre-schoolers in Wales (SKIP-Cymru) has trained 878 teachers, early years practitioners, coaches and parents to be able to improve the physical competence of children in their care. This programme of SKIP-Cymru has gained national recognition as a recommendation in the Health and Social Care Committee report on physical activity and as a best practice case study for the Well-being of Future Generations (Wales) Act 2015 support materials. SKIP-Cymru has been internationally recognised as there is a shift towards recognising the importance of motor competence for long term physical activity and health. In 2019, following publication of research evaluating the success of SKIP-Cymru, the Welsh Government accepted that Fundamental Motor Skills need to be taught at an early age, and that these should be provided for in the new National Curriculum for Wales (Recommendation 5).

2. Underpinning research

Motor competence is a key factor in the levels of physical activity in children. High levels of motor competence and perceived competence are also linked to healthy weight status of children and as such are an important area for intervention. The foundation phase for children aged 3 -7 years in Wales is a play based curriculum that recognises the use of the outdoors as a key aspect of children's learning experience. The UWTSD research was a study of the implementation of the Foundation Phase in Wales and its contribution to the development of physical literacy. It was completed in 2015 led by Dr Nalda **Wainwright**, Director of the Wales Academy for Health and Physical Literacy (WAHPL) at UWTSD, Professor Jackie Goodway, Professor of Kinesiology, The Ohio State University and Honorary Research Fellow WAHPL, Professor Margaret Whitehead Emeritus Professor University of Bedfordshire and Honorary Research Fellow WAHPL, Associate Professor Andy **Williams**, Head of Research, WHAPL, Professor David Kirk, Professor of Education, University of Strathclyde, Honorary Professor of Human Movement Studies at the University of Queensland and Honorary Research Fellow WAHPL. The study examined the nature of the Foundation Phase curriculum which is an active play based curriculum emphasising the use of the outdoors for children's learning **(i) (iv)**. The Foundation Phase curriculum is a framework for learning that does not have subjects in their traditional sense and as such there is no subject of Physical Education. The study identified key features of the curriculum and found that the playful pedagogical approach which is active and used the outdoors as a regular part of children's learning supported many of the attributes of physical literacy **(i) (iii).** However, it also identified that some aspects of pupils' motor skill development were not being developed and to address this has led to the development of a programme of professional development to support pupils motor skill development and lay the foundations for physical literacy **(ii) (iii)**. The research contributed in the following ways:

a) Identifying a gap in the motor development of children in the Foundation Phase in Wales. The study found that children were developing locomotor skills, which are the skills associated with traveling from one place to another such as walking running etc. These skills are phylogenetic and as such will develop given enough opportunities to practice them. The playful nature of the Foundation Phase meant that children were running climbing and travelling in

many aspects of their learning throughout the whole day everyday which enabled their development. However, object control skills such as throwing, catching kicking etc. were not being developed in the Foundation Phase. Object control skills are ontogenetic and as such do not develop naturally through play alone, they need to have appropriate instruction, equipment and environments to enable children to learn them. The implications of children not learning these skills in early childhood are far reaching as studies have shown that children who are more proficient at object control skills in early childhood are more active as adolescents. Developing proficiency in motor skills is also related to perceived physical competence and this relationship is predictive of life long physical activity and health promoting behaviours. This gap in pupils' motor skill development was a concern for the development of physical literacy **(ii) (iii).**

b) The development of a professional development programme to address the gap in pupils' motor skills in the Foundation Phase in Wales. To address the gap in pupils' motor skill development the WAPHL research team developed an action research based programme of professional development was developed for schools in West Wales. Drawing on over 30 years of motor development research and the evidence based programme of Successful Kinaesthetic Instruction for Pre-schoolers (SKIP) in the USA (Goodway and Branta 2003; Goodway Crowe and Ward, 2003) SKIP-Cymru was developed to fit with the pedagogy of the Foundation Phase and engage parents in supporting their children's physical development **(iv) (v).**

3. References to the research

i. **Wainwright, N.,** Goodway, J., Whitehead, M., Williams, A. and Kirk, D. (2016) The Foundation Phase in Wales – A play-based curriculum that supports the development of physical literacy. *Education 3-13* Vol 44(5) pp 513-524

ii. **Wainwright, N.** (2017) Physical Literacy in Wales (part two) – identifying the gap *Physical Education Matters* Autumn Vol 12 (3)

iii. **Wainwright, N.,** Goodway, J., Whitehead, M., Williams, A. and Kirk, D. (2018) Laying the foundations for physical literacy in the Foundation Phase in Wales: The contribution of the Foundation Phase to the development of Physical literacy. *Physical Education and Sport Pedagogy* Vol 24(4) pp 431-444

iv. **Wainwright, N.** (2018) Physical Literacy in Wales (part three) – plugging the gap *Physical Education Matters* Vol 12 (4)

v. **Wainwright, N**., Goodway, J., John, A. Thomas, K., Piper, K., Williams, K. and Gardener, D (2019) Developing a children's motor skills in the Foundation Phase in Wales to support physical literacy, *Education 3-13*.

vi. **Wainwright, N.,** Goodway, J., Whitehead, M., Williams, A. and Kirk, D. (2019) Playful pedagogy for deeper learning: exploring the implementation of the play based Foundation Phase in Wales. *Early Childhood development and care.*

Awards:

vii. Physical Literacy for Schools action research investigating the impact of Successful Kinaesthetic Instruction for Pre Schoolers (SKIP) a regional case study 2017. £55 000 Welsh Government

viii. Physical Literacy Project for Schools: regional development grant 2016 –17. £105 000 Welsh Government

ix. Physical Literacy Project for Schools: regional development grant 2014 -16 £350 000 Welsh Government

Invited Key Note Lectures and round table panel:

x. **Wainwright, N.,** (2017) *Improving physical literacy to survive a perfect storm.* Keynote presentation International Physical Literacy Conference, Toronto 12th April 2017

xi. **Wainwright, N.** (2017) *Laying the foundations for Physical Literacy in early childhood.* Change the Game, Umea Sweden. September 2017 Keynote Presentation

xii. **Goodway, J and Wainwright, N** – The promotion of Physical Education in school, sport and life – Co Chair - Round Table discussion UK SKIP-Cymru, An evidence based

educational approach in Wales, Healthy Active Children, Verona Sept 11 -14 2019 ICOMDR and CIAPSE

4. Details of the impact

Recent analysis **(4)** published by the National Assembly for Wales, Health, Social Care and Sport Committee, *Physical Activity of Children and Young People* (March 2019) report that physical inactivity is considered to be the fourth leading risk factor for mortality, and Wales is facing a national crisis in terms of children's health. The latest figures from the Public Health Wales Child Measurement Programme show an increase in the number of obese four to five year olds over the last two years, and more than one in four children aged four to five are overweight or obese in Wales, 27.1%, compared to 22.6% in England, in this age group. The World Health Organisation (WHO) regards obesity as one of the most serious global public health challenges for the 21st century, and the UK has one of the highest levels of obesity in Western Europe. Physically inactive individuals spend an of 38% more days in hospital, make 5.5% more GP visits, access 13% more specialist services and 12% more nurse visits than active people **(5)**. The Welsh Government has estimated the cost of physical inactivity to Wales as being £650 million per year **(4).** Within this emerging health crisis, this research has been **1)** instrumental in developing parental, school, nursery, coaching and care-provider expertise to develop pupils' motor skills, which is a key factor in enabling children to access physical activity and health promoting behaviours, and **2)** established the evidence base, through the programme, for the Welsh Government to ensure that every child in Wales is enabled to develop the essential Fundamental Motor Skills required at an early age in school, and ensure that current gaps in the foundation phase related to these skills are fully addressed. Impacts have been achieved in the following five pathways:

1. Implementation of a programme of professional development

Following research reported in **(i)** the Welsh Government's Physical Literacy Programme for Schools (PLPS) awarded The Wales Institute for Physical Literacy £350k **(ix)**, and subsequently 160k **(vii, viii)** to develop an approach in the region that could address the issue of pupils' motor development in the Foundation Phase. The PLPS was a targeted initiative, working only with Challenge Cymru schools identified as Wales most challenged schools from disadvantaged backgrounds where children are more likely to have developmental delays in their motor development. Based on prior research developed by Goodway and colleagues, Successful Kinaesthetic Instruction for Pre-schoolers (SKIP) was adopted. However, as SKIP-Cymru needed to fit with the play-based, holistic nature of the Foundation Phase, it was further developed in the Welsh education context to incorporate cross-curricular opportunities to integrate motor development, while a programme of professional development was also developed for SKIP-Cymru delivery in the PLPS schools in the region. As part of the PLPS, SKIP-Cymru had to incorporate key Welsh Government targets of parental engagement and be sustainable. Therefore, the approach that has been developed is a cross-sector collaboration working with regional sports development teams and leisure services to develop a whole school and community approach, resulting in a programme with several key features, including: SKIP-Cymru training day for Foundation Phase staff, combining theory and practice in relation to physical literacy, the importance of movement and motor competence in child development; SKIP-Cymru mentoring where mentors are identified in the regional sports development teams that already worked with schools in the region. The mentors are trained with SKIP-Cymru attending several training days with staff they will be mentoring; parental engagement, as detailed below; not resource-driven to ensure the staff are able to understand how to use a range of resources that are already available. Finally, this is supported through advocacy with leadership teams in schools.

The SKIP-Cymru programme was implemented across 33 schools in the region from 2015 to 2019, and is ongoing at present (4 courses in 2015, 8 courses in 2016, 7 in 2017, 8 in 2018 and 6 in 2019) reaching a total of 878 teachers and early years' practitioners (including a small number of coaches and parents). Workshops were run with staff from Foundation Phase settings and mentors to support the staff back in schools were identified and trained from the regional

sports development team and post graduate students. The training workshops combined theory and practical activities to develop staff knowledge and understanding of motor development in early childhood. A focus on developing staff expertise to be able to assess pupils' stages of development meant that they were then able to set up activities for the children that were developmentally appropriate and targeted the ontogenetic skills that need specific instruction and appropriate equipment. The pupils' motor skills were assessed to ascertain the impact of the training on pupil outcomes and found that pupils had made significant progress in all of their motor skills, as reported in **(vi)** and the programme of professional development (SKIP-Cymru) was able to plug the gap in pupil development that had been apparent in the Foundation Phase.

2. Engaging parents and increasing community awareness

An aspect of the SKIP-Cymru programme was setting up parental engagement sessions supported by parent bags. Staff who had attended SKIP-Cymru training set up parental engagement sessions where parents were invited in to play the activities with their children and learn about the importance of movement for their children. Parent bags were also sent home with the children in a rotation for them to play more of the activities at home. A book in the bags allowed families to record what they had done and share ideas with other parents. The use of mentors in the community sports development teams, local authority and public health, has created a sustainable collaborative model which promotes the awareness of the need for quality movement in early childhood across multiple sectors and extends community reach. Drawing on the SKIP-Cymru work with parents and pre-school settings Dr Wainwright has authored a family engagement programme for the Football Association of Wales Trust **(8)**. Footie Families is targeted at families with young pre-school age children and trains coaches to support parents to play developmentally appropriate activities with their children which will build a broad range of skills and movement vocabulary. A 3 year funded PhD scholarship is now in place to research and develop this project in partnership with the FAW Trust across Wales**.**

3. Impacting pupils' motor skills

Research to evaluate the programme was carried out by Dr Wainwright and colleagues at the Wales Academy for Health and Physical Literacy. This formed a case study for the Welsh Government funded Physical Literacy Programme for Schools (PLPS) and showed that training the staff with SKIP-Cymru impacted the pupils' motor skills **(iv)**. The programme was successful at engaging parents and improving outcomes in particular in areas of socio-economic deprivation. We estimate that as more than 800 of the people trained were directly Foundation Phase teachers and pre-school staff who are responsible for teaching a class of pre-school or early years' children then they will impact on average 20 pupils each and as such improve the outcomes for 16,000 children in total. To address the impact of the programme the percentage change in TGMD-3 raw scores were calculated for each pupils' total score, the locomotor subset and object control subset. The percentage change was used due to the mixture of ages of the pupils and multiple classes in the programme. Percentage change for pupils' raw scores prior to SKIP-Cymru and post-intervention were calculated. **Total scores:** Pupils who took part in SKIP-Cymru saw an average 35% (SD ± 19%) improvement in their TGMD-3 total raw score compared to 3% (SD ± 25%) (CI 0.27, 0.46) in the control/wait group. **Locomotor scores.** Pupils who took part in SKIP-Cymru saw an average 31% (SD ± 23%) improvement in their TGMD-3 locomotor raw score compared to 0% (SD ± 33%) (CI 0.20, 0.42) in the control/wait group. **Object control skills** Pupils who took part in SKIP-Cymru saw an average 49% (SD ± 27%) improvement in their TGMD-3 locomotor raw score compared to 4% (SD ± 48%) (CI 0.30, 0.59) in the control/wait group.

4. Influencing National Policy

In 2018 Welsh Assembly Health, Social Care and Sport Committee launched an inquiry into the physical activity of children and young people, in response to data from the Public Health Wales Child Measurement Programme, which showed an increase in the number of obese four to five year olds over the last two years, where more than one in four children aged four to five are overweight or obese in Wales (27.1%). Following written and oral evidence **(7)** to the Inquiry into physical activity of children and young people by Dr Nalda Wainwright, the published report **(4)** *Physical Activity of Children and Young People Committee Report* (March 2019). contained a

recommendation for programmes like SKIP-Cymru to be rolled out across Wales. To address this health crisis, the Committee recommend that the Welsh Government takes further action in the new curriculum to ensure that every child in Wales is enabled to develop the essential Fundamental Motor Skills required at an early age in school, and ensure that current gaps in the foundation phase related to these skills are fully addressed, and that Welsh Government should support investment for programmes such as SKIP Cymru to be rolled out across the country to ensure that every school in Wales is able to adequately support children to learn these skills (Recommendation 5). The recommendation was accepted by Welsh Government in the formal repose to the evidence and recommendation **(6),** which was incorporated into the new national Curriculum for Wales, noting that "considerable consideration has been given to children's physical development in the new curriculum. The Health and Well-being Area of Learning and Experience (AoLE) has been developed around progression in learning, with significant consideration given to physical development" and that "the Welsh Government will explore the potential for developing a case study to highlight the work of the SKIP Cymru programme, which can be promoted to Foundation Phase practitioners through the Foundation Phase Excellence Network Zone" Subsequently, In October 2019 SKIP-Cymru was identified as a case study for professional development in the Journey to a Healthier Wales materials supporting the Well Being of Future Generations Act **(5)**, aimed at training staff to be able to work with children and parents to enable them to get children competent in their foundational movement skills.

5. Development of accredited training and free online resources for parents/ carers

Findings from collaborative PhD research with WAHPL and Sports Wales **(xii)** has highlighted the need for more consistency in staff training and mentor training in order ensure fidelity of implementation and as such consistency of impact on pupil outcomes. In order to achieve this the SKIP-Cymru training has been developed into a 20 credit level 4 module that is available as blended learning for Foundation Phase staff and mentors. A level 3 online training programme for pre-school staff ensures that all staff have an opportunity for professional development even in settings that are unable to release staff for training workshops. In response to requests from staff in schools and settings free online resources and activities have been developed for parents to access at home. The programme, MiniMovers has information for parents about the importance of movement for their children, advice and activities that are grouped in developmental sequences based on motor development theory to align with the SKIP-Cymru training **(9).** To date,18 teachers have undertaken the module.

5. Sources to corroborate the impact

1. Early Years Progression Officer, Swansea Council
2. Active Young People Coordinator, Swansea Council
3. Interim Chief Executive Officer, FAW Trust
4. The Health, Social Care and Sport Committee report into the physical activity of children and young people. (March 2019) https://senedd.wales/laid%20documents/cr-ld12369/cr-ld12369-e.pdf
5. Journey to a Healthier Wales materials supporting the Well Being of Future Generations Act. https://futuregenerations.wales/wp-content/uploads/2019/11/FINAL-Healthier-Wales-Topic-2.pdf
6. Welsh Government response: Physical Activity of Children and Young People–HSCS Committee Report–March 2019. https://business.senedd.wales/documents/s88210/Welsh%20Government%20Response%20-%20May%202019.pdf
7. Evidence given to Inquiry into physical activity of children and young people http://senedd.assembly.wales/mgIssueHistoryHome.aspx?IId=19490
8. Football Association Wales Trust, Footie Families https://www.fawtrust.cymru/grassroots/footiefamilies/
9. Mini Movers resource https://physicalliteracy.cymru/minimovers/