

## Walking the Talk: Implementing Physically Active Learning and Whole School Physical Activity

### Conference Programme

10:00	Registration at HVL Campus Bergen	
11:00	Conference welcome, setting the scene for ACTivate. Dr Andy Daly-Smith and Professor Geir Kare Resaland	
11:15	Keynote: What are the key challenges to designing, implementing, and evaluating impactful and sustainable school-based physical activity approaches. <u>Professor John Bartholomew</u> , The University of Texas	
11:45	Introduction to session one	
11:50	S1: Co-design of physically active learning and whole-school approaches to physical activity. Chair: Dr Anna Chalkley	
13:00	Lunch	
	Location: M208	Location: M308
13:40	S2: How do we deliver physically active learning? Chair: Dr Tuija Tammelin	S3: Delivering whole-school approaches to physical activity Chair: Dr Vic Archbold
14:50	Break (change rooms)	
15:00	S4: Effectiveness of physically active learning or whole-school approaches to physical activity Chair: Dr Tuija Tammelin	S5: Understanding the implementation of physically active learning or whole-school approaches to physical activity Chair: Dr Vic Archbold
16:10	Transition to main room	
16:20	Synopsis Dr Amika Singh & Professor John Bartholomew	
19:15	Conference dinner (included in conference fee)	

## Seminar session details

Co-design of physically active learning and whole-school approaches to physical activity.		
Jan - Michael Johansen	Norway	Physical active learning in school - a cooperative action research approach
Jeroen Steeman & Corine Visser	Netherlands	Aligning teacher values and PAL purposes in designing PAL activities
Claus Løgstrup Ottesen & Andreas Bolding Christensen	Denmark	'The puzzle' – a tool for reflection on physically active learning
Lena Radünz	Germany	Learning by Movements on the Number Carpet -- Potentials of a Teaching-Learning-Laboratory to Implement Movements for the Promotion of Basic Mathematical Ideas
Zoe Helme	England	Creating Active Schools: Co-designing a Logic Model for a Complex System

How do we deliver physically active learning?		
Marianne Friis Andersen	Denmark	Including all children in physically active learning in school
Mathias Brekke Mandelid	Norway	Unpacking Physically Active Learning in Education: A movement didaktikk approach in teaching?
Danielle Powell	England	"If I become a teacher, which I'm hoping to, I'm definitely going to use it": Preparing student practitioners to deliver physically active lessons (PAL) in primary schools
Ståle Teslo	Norway	Teachers' sensemaking of physically active learning
Per Helge Seljebotn	Norway	Why is the neurosequential model relevant for physical activity?

### How do we deliver whole-school approaches to physical activity?

Dave Brunet	Belgium	Vital schools coaches, implementing sustainable behaviour change among teachers to get students to sit still for less time and move more in a classroom context.
Chris Webber & Rebecca Antcliffe	England	Creating Active Schools, the Calderdale Way
Beatrix Alguren	Sweden	Whole-school approach activities to enhance children's physical activity – results from 385 schools in Sweden
Andy Daly-Smith	England	Creating Active Schools:Building a national whole-school approach to change physical activity culture in schools
Jacob Have Nielson	Denmark	Decisive factors for movement in Danish schools

### Effectiveness of physically active learning or whole-school approaches to physical activity

Clarice martins	Portugal	Portuguese primary school teachers perceptions of physically active learning according to their years of teaching experience
David Sánchez Oliva	Spain	Physically Active Learning in Secondary Education: the ACTIVE CLASS pilot study
Sabrina Krogh Schmidt	Denmark	Classroom-based physical activity's influence on adolescents' health and well-being - a multi-method study of the Active and Healthy Kids Program exploring health changes and students' and teachers' perspectives in secondary school
Jennifer Liersch	Germany	Movement-based learning support in the classroom
Sindre M. Dyrstad	Norway	Effects and experiences from the Active school study: An evaluation of a school based physical activity program especially focusing on the implementation of physically active learning

Understanding the implementation of physically active learning or whole-school approaches to physical activity

Rosemarie Martin	Ireland	Implementing movement integration across the whole school: findings from the moving to learn Ireland programme
Jade Morris	England	Initial insights into the local impact and implementation of Creating Active Schools (CAS) within Bradford, UK.
Michael S. Reinboth	Norway	What motivates secondary school teachers to use physically active learning in future teaching?
Katharina Ludwig	Germany	Effects of Physical Activity Breaks on the Executive Functions of Students and their Feasibility in Secondary Schools
Louise Stjerne Madsen	Denmark	The role of champions in the facilitation and implementation of a Danish whole-of-school health program
Eirini Pardali	Norway	Pupils' experiences of affordances in school-based physical activity programs in Norway and Estonia

## Abstract booklet

**Presentation title:** Physical active learning in school - a cooperative action research approach

**Presenter name:** Jan - Michael Johansen

**Abstract:**

This presentation aims to present a novel way of producing knowledge about PAL. Based on a project that was initiated in the fall of 2021, the preliminary findings indicate that productive dialogue between teachers and researchers extends knowledge about PAL in contemporary education. In addition, this collaborative approach presents an alternative way to further develop PAL as a teaching method.

Within the field of PAL, limited work has been done to co-create physically active learning opportunities in schools. A large body of research has undermined the importance of teachers' pedagogical practice. As PAL is becoming more widespread in the Norwegian school context, it is relevant to broaden the parameters of interests and to move beyond the theories and methods that have previously defined PAL. This project was initiated based on previous projects as an extension to explore PAL after implementation. The project has, therefore, utilised an overarching, multi-methodological action research design to allow a rich understanding of teachers' enactment of PAL. By combining quantitative and qualitative research methods, the first year of the project allowed a rich understanding of PAL. This understanding was used to enter productive dialogues in collaboration with teachers and to further co-create the project and the enactment of PAL in their pedagogical practice.

This presentation is based on the preliminary findings of the project "PAL and learning environments", initiated by the University of Southeastern Norway alongside the Center for Physically Active Learning at the Western University of Applied Sciences initiated the project.

**Associated links:**

**Presentation title:** Aligning teacher values and PAL purposes in designing PAL activities

**Present name:** Corine Visser & Jeroen Steeman

**Abstract:**

In this presentation we will share a Dutch perspective on designing PAL activities that align with teachers' values. We explore what health-related, pedagogical and curriculum goals are important to teachers, and how to balance these with their purpose of PAL.

The presenters are teacher educators at Windesheim University and during this presentation they will share their experiences with these questions in designing PAL activities with primary school teachers who followed their PAL course.

During the presentation they will also examine how teacher educators can help primary school teachers in designing PAL activities that align with their values. For teacher educators, it can be helpful to understand teachers' values and overall perception of the purpose on PAL. If teachers subsequently learn what outcome certain PAL activities have, it is easier for them to choose PAL activities that fit their values.

Inspired by the theoretical framework of Gert Biesta and his three domains of education, i.e. qualification, socialisation and subjectification, the presenters will analyse the teachers' perspectives in these three domains and show a didactical model for teachers to help them design PAL activities that align with their values and the purposes of PAL.

**Associated links:**

**Presentation title:** 'The puzzle' – a tool for reflection on physically active learning

**Present name:** Claus Løgstrup Ottesen & Andreas Bolding Christensen

**Abstract:**

In this presentation we will introduce 'The puzzle', which is a pedagogical and didactical tool for reflecting on physically active learning (PAL), that we have developed in the Danish national project called "Fagene i bevægelse".

"Fagene i bevægelse" is a Danish national project initiated by the Danish Ministry of Children and Education and has been implemented in schools across Denmark led by teacher educators from all University Colleges in Denmark.

The project group has developed both E-learning and workshops in PAL for teachers in schools, and this presentation will focus on the pedagogical and didactical tool 'the puzzle'. 'The puzzle' is a tool that supports teachers to describe, analyse, and develop PAL activities in a meaningful way, and it is a tool that helps teachers to reflect on their own pedagogical and didactical practice while integrating PAL in the lessons in schools.

Andreas Bolding Christensen, UCL and  
Claus Løgstrup Ottesen, UC SYD

**Associated links:**

[www.fageneibevægelse.dk](http://www.fageneibevægelse.dk)

**Presentation title:** Learning by Movements on the Number Carpet – Potentials of a Teaching-Learning-Laboratory to Implement Movements for the Promotion of Basic Mathematical Ideas

**Present name:** Lena Radünz (University of Wuppertal – Germany)

**Abstract:**

In this short presentation, I would like to give an insight into my current mathematics didactics project on learning by movement on the number carpet, which was carried out in cooperation with pupils in the second grade of a primary school in Wuppertal (Germany). Building on the short speech at the last conference, this presentation focuses on the function of the teaching-learning-laboratory as a framework for the research project. Teaching-learning-laboratories combine three central components for the development of school practice: the support of learners, the education of students, and research, each in a specific context. While research on learning with and learning in movement can already show a good level of knowledge, there is still a large gap in research on the contribution of movement to the promotion of content-related competencies, especially from the perspective of mathematics didactics. Due to the state of research, implementation in school practice is more difficult, yet teaching-learning-laboratories already offer the potential at this stage to accompany necessary research processes through implementation in teacher education as well as school practice. The teaching-learning-laboratory MATHletics uses a variety of case studies to exemplify the need for and benefits of further research, while also demonstrating initial approaches to implementation.

**Associated links:**

**Presentation title:** Creating Active Schools: Co-designing a Logic Model for a Complex System

**Present name:** Zoe Helme

**Abstract:**

This presentation will describe the process to developing the CAS logic model, and the necessity of this for the evaluation of CAS. There will be a description of the theoretical underpinning of the logic model regarding both behavioural and implementation science, alongside the importance of such underpinning and the reasoning as to why specific models and theories were appropriate for CAS (CFIR, ERIC taxonomy and school-adapted taxonomy, COM-B, and evaluation road-map). Finally, the presentation will look into how this is and will continue to guide the evaluation of CAS in Bradford and its uses outside of this.

This talk would focus on the evaluation process of the CAS programme currently being implemented within Bradford. Specifically, it will look into the methodology and measures being used, the response rates, data analysis methods and initial results. This includes three studies, study one: an organisational change and an individual stakeholder behaviour questionnaire used to measure PA provision within the primary schools from the beginning to end of their first year of engagement with CAS. Study two uses ripple effects mapping (REM) to understand the longitudinal effect of schools implementing and engaging with the CAS programme across two years. This is also the largest-scale data collection using REM, known to researchers. Lastly, study 3 uses accelerometry data to measure the overall impact of the CAS programme on physical activity levels in primary school children.

**Associated links:**

**Presentation title:** Including all children in physically active learning in school

**Present name:** Marianne Friis Andersen

**Abstract:**

**Introduction:**

Children with mental and physical disabilities are less active in physically active learning (PAL) in Danish primary and secondary schools. Inclusion in PAL is important for all children. However, including all children in PAL is a difficult task, and teachers and teaching assistants ask for more resources and relevant training.

**Aim**

The purpose of this study was to pilot-test an online competence development program (OCDP). The OCDP is organised as an e-learning course with eight modules. The program is based on didactical and pedagogical approaches with the aim of promoting inclusion of all children regardless of mental and physical abilities in school-based PAL.

**Method**

The OCDP was tested for usability and relevance in the early spring 2022. Fourteen teachers, teaching assistants and students participated in the pilot-test. Each participant tested two modules. Data was collected by using a think-aloud inspired testing approach, systematic observation, and interviews.

**Results and discussion**

E-learning has the potential to boost knowledge and practice for teachers and teaching assistants. The participants appreciate the structure and the content in the modules, and they also emphasise that e-learning has the potential to support teamwork among teachers and teaching assistants. However, e-learning also has several structural limitations. It calls for local facilitation, scaffolding, resources, and time. Results also reveal that e-learning is a complex learning environment that requires a high level of self-discipline from the user. Moreover, the content must be flexible, adjustable, and relevant for teachers and teaching assistants.

**Conclusions**

More knowledge is needed on the development of online learning tools for teachers and teaching assistants. While there are potentials, this study also reveals that knowledge on when, how, and under which conditions e-learning is best implemented is needed.

**Associated links:**

<http://tibis.dk/>

**Presentation title:** Unpacking Physically Active Learning in Education: A movement didaktikk approach in teaching?

**Present name:** Mathias Brekke Mandelid

**Abstract:** This paper explores teachers' educational values and how they shape their judgements about physically active learning (PAL). Twenty one teachers from four primary schools in Norway participated in focus groups. By conceptualising PAL as a didaktikk approach, the findings indicated that teachers engaged with PAL in a way that reflected their professional identity and previous experiences with the curriculum. Teachers valued PAL as a way of getting to know pupils in educational situations that were different from those when sedentary. These insights illustrate how PAL, as a didaktikk approach to teaching, can shift teachers' perceptions of pupils' knowledge, learning, and identity formation in ways that reflect the wider purposes of education. The paper gives support to a classroom discourse that moves beyond the traditional, sedentary one-way transfer of knowledge towards a more collaborative effort for pupils' development.

**Associated links:**

**Presentation title:** "If I become a teacher, which I'm hoping to, I'm definitely going to use it": Preparing student practitioners to deliver physically active lessons (PAL) in primary schools

**Present name:** Danielle Powell

**Abstract:**

Currently, children and young people internationally are not sufficiently active, meaning that they are likely missing out on the associated physical, social, cognitive, and affective benefits. This has prompted the call for schools to take on a larger role in increasing physical activity opportunities across the school day. One such potential opportunity is PAL. However, given the novelty of this concept, it is unlikely that in-service teachers have received PAL specific training during their teacher training programme and those who wish to pursue a career in teaching (e.g., student practitioners) are even less likely to have experienced PAL. This paper therefore aims to explore, from the perspective of student practitioners, the extent to which an undergraduate PAL module enhanced and supported their readiness and preparedness to implement PAL. To achieve this, pre- (n=27) and post (n=16) questionnaires were administered alongside follow up focus groups (n=4, 19 participants) exploring participants understanding of PAL along with their capability, opportunity, and motivation to implement PAL in a UK primary school context, following completion of a PAL module. The quantitative findings suggest that participants reported increased confidence, knowledge, and preparedness to enact PAL. The qualitative findings - reflecting the COM-B model - identify improvements in capability relating to planning skills, adaptability, and competence (physical capability), and knowledge and understanding of PAL (psychological capability). In relation to opportunity, peer teaching and real work experiences (physical opportunity) were identified as key, along with staff and peer support when delivering PAL (social opportunity). Considering COM-B and interaction between capability, opportunity and motivation, student practitioners reported enhanced capability and opportunity likely resulted in increased motivation to implement PAL. The qualitative data also point toward student practitioners wanting further support with behaviour management (psychological capability) and longer school placement experiences (physical opportunity) albeit, this was impacted by COVID restrictions.

**Associated links:**

**Presentation title:** Teachers' sensemaking of PAL

**Present name:** Ståle Teslo

**Abstract:**

This study explores how Norwegian teachers understand and integrate physically active learning (PAL) into their everyday teaching by drawing on the concept of sensemaking. Interviews with 16 teachers on a PAL continuing professional development program were carried out. Findings illustrate how teachers made sense of PAL through the lens of professional identity, using PAL to vary their teaching and include students of varying abilities in learning. The teachers use PAL to pause, replace, and complement traditional teaching. These findings indicate that if PAL is to be introduced systematically into schools, then teacher education programs need to prepare teachers by giving primacy to its educational purposes, with health as a secondary concern.

**Associated links:**

SEFAL: [https://www.schoolsforhealth.org/sites/default/files/editor/norway\\_she\\_juni\\_2019.pdf](https://www.schoolsforhealth.org/sites/default/files/editor/norway_she_juni_2019.pdf)

**Presentation title:** Why is the neurosequential model relevant to physical activity?

**Present name:** Per Helge Seljebotn, Ingrid Kristine Aspli & Elisabeth Vågen Bø

**Abstract:**

**Background**

The link between physical activity and learning has been extensively explored during the last decades, increasing the relevance of physical activity in schools. To a lesser extent has classroom behaviour, disruption, fidgeting, and stress been closely linked to physical activity. A lot of teachers and schools experience daily challenges with children not being able to sit quietly and listen. Is this due to a lack of discipline, or do we also need to ask ourselves; is this ability to sit quietly for long periods of time really beneficial to our brain and, ultimately, our learning?

**What is the neurosequential model?**

The Neurosequential Network defines the neurosequential model as a developmentally-informed, biologically-respectful approach to working with at-risk children. Recently, the model has been found to have substantial implications for the understanding of all children. The model explains how the brain processes information and by which circumstances we learn optimally. Specifically, the model argues that before children can reason and learn, we must accept that regulation and relation are key prerequisites of learning.

**What does the neurosequential model add to our understanding?**

The neurosequential model offers a language and a way of understanding children's behaviour in classrooms and brings the regulatory and relational perspective to physical activity. The model further explains why PAL works and how it works. By introducing and adding the neurosequential model to our mission to increase physical activity in schools, we believe that the gap between interventions to improve mental health and interventions for physical health can be bridged. The neurosequential model provides health professionals and teachers with a common language and a common understanding of children's behaviour and has the potential to gain greater accept and willingness to implement whole school physical activity approaches.

**Associated links:**

**Presentation title:** Vital schools coaches, implementing sustainable behaviour change among teachers to get students to sit still for less time and move more in a classroom context.

**Present name:** Dave Brunet & Gert Muylle

**Abstract:**

Children (even preschoolers!) sit still too long and do not get enough exercise. Campaigns and initiatives should motivate children, their parents and schools to exercise more. But how do you do that in the classroom? How can you develop 'vital' and sustainable actions within the existing exercise policy of the school that stimulate 'less sitting still and more exercise' within the classroom context?

A survey among teachers shows that there is a need for good practice to stimulate 'less sitting still and more movement' in the classroom and the school context. That is why MOEV, the Flemish Institute for Healthy Living and the teacher training college Howest joined forces and launched the practical scientific research 'Vital Schools'. The focus was on vital and sustainable actions.

During the first phase, the project invested in the creation of a support base among teachers, headmasters, pupils and students from the teacher training college. Knowledge about the movement triangle was increased. Participants were informed about sedentary behaviour. Their own movement and sitting behaviour was mapped out and goals were set.

In August 2021, after 2.5 years, the project was concluded. You can find the results on [www.vitalschools.be](http://www.vitalschools.be). All practical examples (primary and secondary education) were developed in co-creation with the actors involved (teachers, pupils and headmasters). The teachers were supported at class level by Gert Muylle (primary schools) or Dave Brunet (secondary schools). The starting point was a menu of choices with three major angles: movement-friendly classroom environment, active work forms and/or movement breaks. From September 2022 onwards, we started with a follow-up study "vital schools coaches".

**Associated links:** [www.vitalschools.be](http://www.vitalschools.be)

**Presentation title:** Implementing Creating Active Schools the Calderdale Way

**Present name:** Chris Webber & Rebecca Antcliffe

**Abstract:**

**Background:** Active Calderdale is a Sport England funded project using a whole systems approach to increase physical activity across a community in the North of England. One element of this project has involved developing and implementing a whole-school approach to physical activity promotion across twenty-four pilot schools.

**Who:** This work was led by a qualified physical education teacher with experience of delivering cross-district school-based actions.

**Process:** Because the 'We Are CAS' online toolkit was unavailable during the implementation period, the project lead drew upon existing knowledge from involvement in the highly successful School Sport Coordinator Programme. This resulted in developing a training resource with Yorkshire Sport Foundation to support school implementation. It also involved creating action plans for schools that included all seven areas of opportunity outlined in the CAS Framework. Actions were bespoke, aligned with school development plans, and assigned to specific staff members.

**Impact:** This approach stimulated interest and perceived value amongst schools, resulting in over-subscription for limited pilot places, and an increase in supported opportunities. The project resulted in a range of physical activity themed school policies and practices being introduced that reach over 7,500 students and their families. The return of investment ratio stands at (£1 : £5.72), and the scheme has been embedded within the local council's Public Health strategy, Education Recovery Plan, and upcoming Healthy Schools Award.

**Future:** To encourage sustainability beyond Active Calderdale's financial and human resource support, several strategies have been planned.

**Associated links:**

**Presentation title:** Whole-school approach activities to enhance children's physical activity – results from 385 schools in Sweden

**Present name:** Beatrix Alguren

**Abstract:**

Generation Pep is a foundation initiated by the Crown Princess Couple of Sweden with the vision that all children and young people should have the possibility and the motivation to live an active and healthy life. They provide among others a digital online support system called PepSkola that can be used free of charge of all schools in Sweden in order to create more active and healthy school days. The tool has been developed together with schools and researchers, and is supported by the teaching curriculum. During my talk, I will present results from 385 registered schools about their activities implemented, regarding seven different domains: active travel to and from schools, school environment and equipment for physical activity, physical activity opportunities during recess and recreation time, activity breaks during lessons, embed active classrooms in school curricula, as well as physical activity before and after school.

**Associated links:**

**Presentation title:** Creating Active Schools:Building a national whole-school approach to change physical activity culture in schools

**Present name:** Andy Daly-Smith

**Abstract:**

The Creating Active Schools framework was co-developed in June 2019 by 50 national and international stakeholders. Since conception, the framework has been adopted by practice to lead a whole-school physical activity approach across various localities within England. The presentation will overview the Creating Active Schools Delivery model that has currently scaled to work across 18 localities in England and over 200 schools. As part of this journey, you will see the development of the online profiling tool, a central piece of the intervention approach that places professional development for physical activity at the heart of the school community. Those journey of a practice first, research second approach will be shared with lessons for the audience on how to draw both parties together (and lets not forget policy) to take a evidence-led approach to practice. Ultimately, the CAS system enables schools, localities and governments to use data to drive decision making around policy and practise for physical activity in schools.

The presentation will finish with an overview of the planned wider rollout of CAS from 2023 and how this will be evaluated on a national scale.

**Associated links:**

CAS Framework paper: <https://ijbnpa.biomedcentral.com/articles/10.1186/s12966-020-0917-z>

CAS website:

<https://www.creatingactiveschools.org/>

ISPAH eight best investments:

<https://www.ispah.org/creating-a-solution-that-transforms-physical-activity-culture-in-schools/>

More schools work taking place in Bradford, UK: <https://youtu.be/LLGTtzar8Fo>

**Presentation title:** Decisive factors for movement in Danish schools

**Present name:** Jacob Have Nielsen

**Abstract:**

What is needed to succeed with implementation of movement as a natural part of the school day? This question has often been asked to different stakeholders in the Danish school system.

Responses naturally reflect very subjective opinions reflecting which sector of the system the person represents. Based on a systemic approach, the Practice Center for School Sport and Movement conducted a Delphi study inviting stakeholders from all sectors of the system in order to identify important factors based on dialogue and common understanding across sectors. 57 practitioners representing all sectors in the Danish school system from national politicians to pupils participated in the process of identifying decisive factors for movement in Danish schools.

449 inputs were identified from three different sources. 1) Literature review, 2) Experiences from experts working with promoting implementation of movement in Danish schools and 3) Experiences from practitioners collected via surveys distributed through Social Media channels. The 449 input resulted in 169 factors which the expert panel rated individually in an online survey. Based on the rating 136 factors qualified for further discussion. The 136 factors were distributed in 12 areas reflecting the sectors of the school system, and panellists were asked to rank factors within an area from 'most important' to 'least important' in a pyramid model leaving room for ranking more factors in the middle positions. Panellists wrote arguments for factors placed as most and least important, which served as feedback supporting the dialogue in the two following workshops where they in groups across sectors discussed and prioritised factors within each area as 'decisive', 'important, but not decisive', 'may be of importance' or 'not important'.

Results are not breaking news, but are, very importantly, qualified through the dialogue between practitioners across the school system. The most evident result from the study was that the school system is complex. Many factors are of importance and these are present within all sectors of the school system. Thus all parts of the system must take responsibility and engage in order to succeed. The panel identified common understanding of movement as a didactical tool which supports variation in school day activities. A common understanding across the whole system is a foundation for communication about the topic and will support meaningfulness and acceptance among teachers. Furthermore the panel pointed at priority in terms of time to create culture, structures which support culture and resource persons or teams who support colleagues in development of competencies. Finally the panel identified implementation in teacher education as well as stronger leadership at national and municipality levels as the two most impactful steps to take right now in order to support successful implementation of movement in Danish schools.

**Associated links:**

[www.pibs.dk](http://www.pibs.dk)

**Presentation title:** Portuguese primary school teachers perceptions of physically active learning

according to thor years of teaching experience

**Present name:** Clarice Martins

**Aim:** To explore primary school teachers' perceptions of PAL benefits, delivery, and implementation in Portuguese primary schools, according to years of teaching experience.

**Methods:** Primary school teachers ( $N=119$ ;  $45.35 \pm 7.45$  years-old; 98% female) from 48 schools participated in the study, and were allocated in two groups (less than 20, and 20 or more years of experience). Participants answered an online survey composed by questions to assess teachers' perceptions of PAL benefits; commitment and delivery; and facilitators and barriers to implementation. Descriptive statistics were used and the Chi-square test was used to evaluate the association between the independent (years of experience) and the dependent variables. The five most prevalent facilitators and barriers were reported. Analyses were conducted using SPSS (version 28.0) and significance was set at 95%. **Results:** A large proportion of teachers from both groups agreed with the benefits of PAL on children's academic, cognitive, and motor performance related constructs. No association was seen between years of experience and perception of PAL benefits. Associations between years of experience and perception of suitability of PAL application in Mathematics and Sciences curricular components were seen, with teachers with less years of teaching experience agreeing most. The great majority of the teachers also agreed that the curricular component Artistic and Motor Expressions is the most suitable to deliver contents using PAL (95.9 and 87.07% for <20 and  $\geq 20$  years of teaching experience, respectively). Children's satisfaction during PAL classes was reported as the main facilitator for implementation, and difficulty in controlling the class was the main barrier in both groups. **Conclusion:** This study showed similar teachers' perceptions of PAL benefits, barriers, and facilitators, independent of their teaching experience, though perception of adequacy to deliver PAL in specific curricular components differ according to teachers' years of experience. Future initiatives should consider developing training to support teachers.

Clarice Martins, Jorge Mota,, José Santos, Andrew Daily-Smith, Anna E. Chalkley, Victoria Archbold, Tuija H. Tammelin, Jesper von Seelen, Maria Paula Silva

**Associated links:**

**Presentation title:** Physically Active Learning in Secondary Schools: The ACTIVE CLASS pilot study

**Present name:** David Sánchez Oliva

**Abstract:**

Physical inactivity has been highlighted as one of the main determinants of childhood obesity, being considered for the WHO as the fourth risk factor with respect to mortality worldwide. Specifically, during school days, students spend most of their time in sedentary behaviors. Therefore, the educational context is an interesting framework to increase physical activity (PA) levels.

The ACTIVECLASS study is a Randomised Controlled Trial aimed at evaluating the effects of a physically active learning intervention on health, academic and cognitive indicators in secondary school students. This work present the results found on the Pilot Study, composed by a 4-week intervention with a 50-min physically active class per week in math subject. The sample was composed by 74 adolescents (33 boys), aged between 12 and 15 years old ( $M = 12.59$  years;  $SD = .637$ ), corresponding to Year 1 in Secondary School, grouped into control ( $n = 36$ ) and experimental ( $n = 41$ ) group. Using repeated measures anova, we analysed the effects of the intervention on health, educational and cognitive indicators.

Alberto Grao-Cruces, Daniel Camiletti-Moirón, Fátima Martín-Acosta, María González-Pérez, Enrique Cano-Cañada & David Sánchez-Oliva

**Associated links:**

[www.activeclass.es](http://www.activeclass.es)

[www.eumoveproject.eu/](http://www.eumoveproject.eu/)

**Presentation title:** Classroom-based physical activity as a means to promote health, well-being and learning in school: A study on health changes and students' and

teachers' perspectives in secondary school

**Present name:** Sabrina Krogh Schmidt

**Abstract:**

**Aim:** The aim of this study was to explore how students' health and well-being are influenced when classroom-based physical activity is implemented into curriculum teaching. The study examines how this affects physical activity levels, physical fitness and well-being, and explores students' and teachers' experiences of classroom-based physical activity with a focus on psychosocial well-being.

**Method:** The study was conducted in two phases. 1) Changes in student levels were assessed using a quasi-experimental design with pre/post-tests of physical activity levels, BMI and questionnaires on health-related quality of life and vitality (well-being) on 644 students in 8th grade. 2) Student and teacher lived experiences of the classroom-based physical activity were explored through a descriptive phenomenological study using in-depth individual interviews with nine students and six teachers.

**Results:** Nine months after implementing classroom-based physical activity, students at intervention schools had improved their physical fitness and were more physically active in school time than students at control schools. Further, in female students, there was a greater positive difference in health-related quality of life outcomes. The students' shared experiences were that classroom-based physical activity was a valued and meaningful movement activity that improved their psychosocial well-being at school. The teachers' shared experiences were that classroom-based physical activity was relevant, yet more complex than expected, in secondary school settings. This experience resulted in the loss of motivation and resorting to simpler solutions with a potential loss of the coherence of the approach.

**Conclusion:** Classroom-based physical activity can benefit students' health and well-being mostly by counteracting an expected reduction. Especially female students seemed to benefit from the initiative by reporting more stable levels of psychosocial health and well-being. While most students support and welcome classroom-based physical activity some found a competitive focus demanding. Teachers seem to struggle to implement and apply the approach in a regular and meaningful way that supports the implementation of more physical activity and academic learning objectives. Support and focus on teachers' professional development are critical for physically active learning to become a regular part of subject teaching in secondary school.

Schmidt, S. K., Bongaardt, R., & Bratland-Sanda, S.

**Associated links:**

**Presentation title:** Movement-based learning support in the classroom

**Present name:** Jennifer Liersch

**Abstract:** The results of several studies show various positive effects of movement on learning: For example, physical activity breaks in the classroom can increase concentration. But exercise also has the potential to promote general cognitive learning. For instance, cognitively demanding movement has a positive effect on the executive functions and school performance of children (Boriss, 2015). Thus, physical activity breaks that include a cognitive demand can have a positive impact on executive functions and mathematics achievement (Egger et al., 2019). If the cognitive content of such physical activity breaks is designed mathematically, the effects on mathematics performance can be even higher compared to pure physical activity breaks (Mavilidi & Vazou, 2021).

Based on these correlations, we developed support programs for the classroom consisting of cognitively demanding movement games with a subject-didactic orientation which were already presented in Zwolle, April 2022. From September 2021 until June 2022, a study was conducted in a controlled pre/post-design in which different types of these cognitively demanding games were implemented in grade 7 (students from 10 to 14 years) at four schools in North Rhine Westfalia. Subject-oriented content was contrasted with non-subject-oriented content in order to be able to contrast the benefit. The concentration and executive-functional performance of the students were assessed. Furthermore, interviews were conducted with the teachers as well as two group discussions with some students. In addition to general feedback on the implementation of the developed intervention, teachers shared their subjective perceptions of the influences on students and teaching, as well as the opportunities and challenges associated with the content.

The aim of the presentation is to give a short insight into the first results of the computer-based assessment of concentration and executive-functional performance and the feedback from participating teachers and pupils in the field.

**Associated links:**

**Presentation title:** Effects and experiences from the Active school study: An evaluation of a school based physical activity program especially focusing on the implementation of PAL

**Present name:** Sindre M. Dyrstad

**Abstract:** Purpose: To study various effects of increased physical activity in children, and to provide recommendations for implementation of physically active learning.

Methods: Between 2013 and 2018 both quantitative and qualitative studies were performed to evaluate a school based physical activity program consisting of physically active learning (2x45min/week), physically active homework (5x10 min/week) and physically active recess (5x10 min/week). The implementation of physically active learning was especially studied by interviewing 39 school leaders, 30 pupils and 35 teachers. In 2014-15, a cluster randomized controlled trial was performed in nine schools (447 children in 5th grade) to study how physical activity affected aerobic fitness, self-regulation, health-related quality of life and acceptance of physically active learning.

Results: No overall differences in executive functions between intervention- and control group were detected. However, the Active School program successfully increased physical activity for the intervention group and aerobic fitness for the least fit children. Positive effects on children's psychological wellbeing, social support and peers, and school environment were found. Results also showed a tendency that children in intervention schools had a greater gain in cognitive skills relative to the control schools. Physically active learning gained a positive reception, but teachers experienced that inadequate training, lack of headteachers' support and insufficient time for planning and preparing the lessons were challenging barriers to overcome.

Conclusion: Several positive findings related to increased physical activity were found. Physically active learning was considered an appropriate pedagogical method and were highly appreciated among both teachers and children. Headteachers' involvement, creating structures for collaboration and knowledge sharing is critical for sustainable implementation of physically active learning.

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**Associated links to some of the published papers in the project:**

<https://doi.org/10.1016/j.tate.2021.103575>

<https://doi.org/10.1016/j.evalprogplan.2020.101874>

<https://doi.org/10.1186/s12889-019-8021-5>

<https://doi.org/10.1016/j.pmedr.2018.12.009>

<https://doi.org/10.1186/s12889-018-5205-3>

**Presentation title: Moving to Learn Ireland: A Case Study evaluating the implementation of movement integration across the whole school****Present name:** Rosemarie Martin

**Abstract:** The Moving to Learn Ireland movement integration programme was designed to support teachers in teaching academic content through movement within the classroom setting. This study evaluates teacher and student perceptions of participating in the programme. Student physical activity levels were also evaluated. Three teachers and their students ( $n = 58$ ) in one multi-grade school in Ireland participated in the study. A variety of tools such as the PA Self-Efficacy Scales, Questionnaire Assessing School PA Environment, PA Enjoyment Scales, and focus group discussions were used to evaluate students' self-efficacy for physical activity, perceptions of the school environment, and enjoyment of the programme. Accelerometers were used to gather student physical activity data pre- and during the intervention. Teachers' perceptions of the programme were evaluated through lesson reflections, post-intervention questionnaires, and a post-intervention focus group interview. Results indicate that both teachers and students expressed their approval of movement integration as a teaching method. Student class time physical activity levels improved during the programme. Light PA significantly increased by 13 minutes ( $\pm 14.5$ ) during class time per day ( $p < .001$ ) and a significant increase was also identified for change in MVPA during class time ( $2.1 \pm 17.2$  minutes,  $p < .05$ ). The school facilitated students to engage in physical activity. This study highlights the need for a whole-of-school approach to movement integration and the need to provide experiential workshop-type professional development opportunities to teachers, to support their implementation of such programmes.

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**Associated link to the published paper:**<https://doi.org/10.1080/03323315.2021.1899023>**Presentation title: Initial insights into the local impact and implementation of Creating Active Schools (CAS) within Bradford.**

**Present name:** Jade Morris

**Abstract:** "The University of Bradford co-leads the national implementation of Creating Active Schools (CAS) framework is currently being trialled (commencing October 2021) in Bradford schools (~30 schools). We've conducted focus groups with (i) CAS champions - that work with ~10 schools, employed by the city of Bradford Metropolitan District Council) and (ii) school-based stakeholders using CAS (including CAS leads, teachers and senior leadership teams). We've asked the CAS champions and school-based stakeholders

Interviews and focus groups have been transcribed verbatim and qualitative insights are using Braun and Clarke's (2006) thematic synthesis methodology to explore the initial insights into the impact and implementation of CAS.

Using the Consolidated Framework for Implementation Research (CFIR), the focus groups will provide early insights into implementation factors associated with individuals and the inner and outer settings. CFIR provides a menu of constructs, arranged into five domains, that have been associated with effective implementation and can be used in a range of applications. Findings are currently being finalised and we're aiming to share these for the first time at the Conference."

**Associated links:**

CAS Framework paper: <https://ijbnpa.biomedcentral.com/articles/10.1186/s12966-020-0917-z>

CAS website:

<https://www.creatingactiveschools.org/>

ISPAH eight best investments:

<https://www.ispah.org/creating-a-solution-that-transforms-physical-activity-culture-in-schools/>

**Presentation title:** What motivates secondary school teachers to use physically active learning in future teaching?

**Present name:** Michael S. Reinboth

**Abstract:**

Objective: to investigate factors that influence the use of and motivation for the future implementation of physical active learning (FAL) among secondary school teachers.

Method: A total of 148 secondary school teachers (response rate: 34%) completed a survey in which we measured the teachers' perception of subjective vitality, inner motivation and satisfaction, perceived competence, value/usefulness of FAL, motivational regulations for using FAL, as well as perceived sense of belonging and acceptance from the students.

Results: FAL was used in English, Norwegian and mathematics by 13%, 26% and 22% of the respondents respectively. Active breaks from sitting were used weekly by 40% of the respondents. There was a positive correlation between perceived competence, acceptance/belonging from students, and perceived usefulness/value of FAL. A stepwise regression analysis showed that identified regulation for FAL and competence explained 31% of the probability of using FAL in future teaching.

Discussion: In order to increase the proportion of teachers who use FAL regularly in secondary schools, the focus must be on strengthening the teachers' personal attitudes and values as well as their perceived competence to use FAL.

Reinboth, M.S., Schmidt, S., Jonskaas, C., Grønningsæter, H., Karlsen, M.L., Bottolfs, M. and Bratland-Sanda, S.

**Associated links:**

**Presentation title:** Effects of Physical Activity Breaks on the Executive Functions of Students and their Feasibility in Secondary Schools

**Present name:** Katharina Ludwig

**Abstract:** Since the 1990s several approaches in Germany emerged intending to implement more movement into the school day (Laging, 2017). As a key element, these concepts include physical activity breaks, which are characterized by not having a temporal or content-related connection to the learning subject (Riegel, 2014). One of the main goals of physical activity breaks is to increase the student's ability to concentrate (Hildebrandt-Stramann, 2009).

To gain more insights into the effects of physical activity breaks on the cognitive performance of students, their effects on executive functions were investigated in a pre-post control group design involving three different groups: Experimental Group 1: physical activity breaks with additional cognitive demand; Experimental Group 2: physical activity breaks without additional cognitive demand; Control Group: academic lessons without physical activity breaks. Due to the COVID-19 restrictions, the physical activity breaks were implemented for different time periods lasting between six to ten weeks. The students ( $N = 453$ ) were at the age of ten to thirteen. The intervention consisted of self-developed, animated videos, which were limited to a duration of five minutes and were designed to be usable in the classroom without much effort or preparation.

To measure the acute and chronic effects on attention and concentration skills, shifting, inhibition, and updating computer-based tests were carried out. Furthermore, a qualitative approach was added by interviewing teachers and students after the intervention period about the feasibility, the effects, and the implementation of the developed physical activity breaks. The results of the quantitative, as well as the qualitative analyses, will be presented and discussed with a special focus on the opportunities and limits of implementing physical activity breaks in the classroom.

**Associated links:**

**Presentation title:** The role of champions in the facilitation and implementation of a Danish whole-of-school health program

**Present name:** Louise Stjerne Madsen

**Abstract:**

This presentation is about the role of champions in the facilitation and implementation of a whole-of-school health program called “The School Health Program”. The School Health Program (SHP) is a Danish whole-of-school, municipality-wide program running from 2016 to 2021. The primary aim of the SHP was to enhance learning among all students, through an extended focus on health, well-being and physical activity giving students a more active, varied and less sedentary school day. To reach this goal, the SHP contained a number of core program components – one of those was to identify 1-2 local SHP champions at each school.

We completed semi-structured interviews with 26 SHP-champions. Interviews focused on exploring key implementation responsibilities and key barriers and facilitators to implement core program components.

Champions identified coordination, promotion, and support as key implementation responsibilities and tasks. Findings also highlighted organizational and structural factors that, on various levels, impact the work and function of this type of implementation agent. These are, for instance: a supportive school environment; active and supportive leadership; collaboration with another champion; and a clear structure and distribution of roles to fulfill their task.

In this study, we found that champions can be primary agents in the implementation of a whole-of-school program by handling key tasks and responsibilities. However, the study also underlines that the responsibility for this often complex set of implementation tasks cannot solely rest with the champion. We suggest that one important area for future research on school-based programs, making use of champions in the implementation phases, is to test and establish effective ways to prepare and train champions to take on their role in ways that make substantial impact on program outputs and outcomes.

**Associated links:**

**Presentation title:** Pupils' experiences of affordances in school-based physical activity programs in Norway and Estonia

**Present name:** Eirini Pardali

**Abstract:**

**Abstract**

This study aims to examine the pupils' experiences of the active components within school-based physical activity programs in selected Norwegian and Estonian schools and how this relates to the actualized affordances of the school environment. Focus groups were conducted in elementary and lower-secondary schools (10 and 15-year-olds, n=38) in both countries aiming to grasp the pupils' experiences of spaces and activities in the programs. The study draws on Gibson's theory of affordance (1979) that views the relationship between humans and the environment as relational. The findings suggest that in the Norwegian and Estonian schools of the study, the physical activity behaviour of the pupils tends to be promoted and constrained by four main factors: 1) the functional affordances of the active components (i.e., variety of facilities indoors and outdoors, seasonal affordances), 2) the relation between pupils and teachers, 3) the school rules and 4) the pupils' field of free action (i.e., children's voices, togetherness, imaginative play). The children informants in both countries reported their physical activity behaviour to be promoted and constrained by mostly the functional affordances, their relation to teachers, rules and imaginative play. For the adolescent informants, the main promoting and constraining factors were the functional affordances, their relation to teachers, the learning outcome out of physically active learning (PAL), togetherness, and having their voices heard by teachers and school personnel.

**Keywords:** school-based physical activity, affordances, pupils, experiences

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**Associated links:**