



Lipponen Laura

Physically active learning in the Finnish school system: Many names, one approach

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The decrease in students' daily physical activity over the last ten to fifteen years and daily passive habits have led to the need for the school to support physical activity more in order to safeguard students' well-being, functional capacity and health. Physically active learning is a learning approach that incorporates movement and physical activity into the learner's sense-making and learning process. In Finnish research literature, research on physically active learning is not yet directly found, yet synonymous terms and links include action-based learning and physically active school days, thus introducing a research gap. This narrative literature review examines physically active learning in the Finnish school context, focusing on its stakeholders and the surrounding education system.

The different stakeholders that emerge for physically active learning include teachers, the school as an institution, educational policy, the curriculum and the Schools on the Move national initiative. Teachers' perspectives conceptualize physically active learning through lenses of teaching practice, experience, professional growth, sense-making, teaching methods, as well as opportunities and challenges posed by the learning approach. At the policy level, physically active learning emerges through recommendations for frequent use of action-based methods in the classroom, movement breaks and movement integration, developing the structure of the school day to support more physical activity, and physically active ways of working during lesson time and the school day. In practical teacher resources, physically active learning emerges through working methods, subject-specific and general action-based learning activities, as well as movement integration into lessons.

The reviewed research literature situates physically active learning as a learning, teaching and working method that integrates and intertwines the autonomous classroom with the school as an organization. In considering the school as an organization, the research literature links physically active learning to the operational culture of the school and the positionality of the school in the national framework and educational policy in Finland. This may have significance for educational policy makers, municipality representatives, headteachers, as well as in-service teachers for mapping out the current state of physically active learning in Finnish education.

Keywords: physically active learning, action-based learning, movement integration, action-based methods, physically active school days, Finnish school system

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1 Introduction

In Finland, the number of children and young people who fulfil the recommendation for physical activity has decreased (Kokko et al., 2023, p. 9). One third (36%) have reported that they achieved the physical activity recommendation, which is a smaller proportion in comparison to 2018 (38%) (Kokko et al., 2023). Research additionally indicates that students in Finland have been less physically active in the recent years (Husu et al., 2024). On average, children and young people spend 54 percent of the time they are awake either sitting or lying down (Kokko et al., 2023, p. 33). Students spend 47 percent of this daily passive time at school (Tammelin et al., 2015).

These statistics may indicate a potential health risk for current generations of children and young people; furthermore, they constitute a serious question regarding national health (Kokko et al., 2023). Thus, it is pertinent to examine how the school and its surrounding education system position themselves in relation to alleviating these concerns. All children and young people ‘may be reached’ through the school (Lomsdal et al., 2023). As a learning context and environment that all children engage with and spend considerable time in, the school plays a central role in safeguarding and ‘ensuring’ that students engage in sufficient physical activity (Lomsdal et al., 2023; World Health Organization, 2016). As the research clearly indicates that the physical activity of Finnish children and youth has decreased recently, the important task of the school is to increase students’ physical activity during lessons and the school day (Moilanen & Salakka, 2019, p. 17). Physically active learning has been one approach highlighted in international research that may have health benefits for students in the context of ‘physically active academic lessons’(de Greeff et al., 2016a; de Greeff et al., 2016b). This approach may support overall student wellbeing and health through incorporating physical activity into the school day. In the Finnish context, action-based learning has been a topical matter in the recent years. Action-based methods also help to increase the physical activity of students during school days (Savolainen et al., 2018, p. 166).

In this thesis, physically active and action-based learning will be explored more in depth in relation to the Finnish school system. The working definitions for both of these terms will be discussed next. Kataja et al. (2011) conceptualizes action-based teaching methods as all activity that relates to doing and acting, which strive to activate the agency and learning of both the

individual and the group (p. 30). They specify that active agency refers to the cognitive activity that engaging in physical activity produces (Kataja et al., 2011, p. 30). Functionality or action-based activity occurs through movement or through the different senses (Savolainen et al., 2018, p. 168).

Vuorinen and Huovinen (1993) define action-based expression as working methods which require a kind of physical activity that does not fit under pictorial, dramatic or musical expression (p. 179). Movement-based learning and learning through movement is one of the action-based teaching methods (Moilanen & Salakka, 2019, p. 44). Action-based activity is one of the most important ways of concretizing teaching (Vuorinen & Huovinen, 1993, p. 180). Simultaneously, defining or framing action-based expression is challenging due to the opportunity for action-based activation that most working approaches present (Vuorinen & Huovinen, 1993, p. 179). Action-orientedness and active working methods have been found to support students in the learning process (Savolainen et al., 2018, p. 169). The child moves to perceive and perceives in order to move (Viikari et al., 2014, p. 5). Furthermore, Action-based teaching may be conceptualized as any teaching method used in any subject, which aims to achieve the learning content aims (Viikari et al., 2014). Passive sedentary time during the lessons decreases through utilizing action-based methods (Viikari et al., 2014, p. 5). Though research lacks a consensus on its definition, action-based learning is conceptualized as a holistic medium of learning facilitation; it activates cognitive activity through physical activity and collaborative methods (Kataja et al., 2011; Savolainen et al., 2018; Vuorinen & Huovinen, 1993).

In its broad(er) context, physically active learning refers to a learning approach that integrates movement and physical activity into lessons, ‘core educational goals’, and academic content learning (Mandelid, 2023; Routen et al., 2018; Watson et al., 2017). Ottesen & von Seelen (2019) conceptualize physically active learning based on the ‘Movement Integrated into Teaching’ model (p. 6). Based on this model, Ottesen (2019) has adapted five types of physically active learning, which include ‘play activities’, ‘structuring teaching’, ‘embodiment’, ‘situational exercises’, and ‘creative and aesthetic learning activities’ (Ottesen, 2019, as adapted from Ottesen & von Seelen, 2019).

In the Finnish research context, research under the term ‘physically active learning’ is seldom found. More commonly, the field of research that explores this learning approach is action-

based learning, or 'toiminnallinen oppiminen' in Finnish. Physically active learning in the Finnish context is conceptualized in both practical and research contexts as action-based learning. Direct research on physically active learning is still in the starting phases or emerging indirectly through initiatives and programs. Thus, in this literature review, the terms 'action-based learning' and 'physically active learning' will be considered synonymous, as they both make meaning of learning through movement in a similar way in relation to the Finnish education context. Physically active learning (PAL) can be considered an extension of action-based teaching and learning. PAL can be conceptualized to combine action-based approaches with the integration of physical activity into lessons.

In the Finnish educational context, measures to increase students' physical activity during the school day have concentrated on commuting to and from school, as well as recess to promote physical activity (see Aira et al., 2017; Kantomaa et al., 2018). There has not been substantial research on integrating physical activity into lessons, or otherwise known as physically active learning or action-based methods. Thus, a research gap emerges, which this literature review aims to address through examining relevant Finnish and international research on the topic. This review may have significance for educational policy makers, municipality representatives, as well as school leadership and in-service teachers for situating the current state of physically active learning during the school day in Finland.

2 Research methodology and research aim

2.1 Methodological considerations and research process

The literature examined in this literature review has been selected through a combination of the snowballing approach, search term and search string searches in Finnish and English on library databases, as well as free key term searches on search engines. The search terms used to search the literature have included the following terms and their different forms in English and Finnish: ‘physically active learning’, ‘physically active teaching’, ‘physically active lesson’, ‘action-based learning’, ‘action-based lesson’, ‘action-based methods’, ‘physical activity’, ‘school on the move’ and ‘physically active’. These search terms have been combined with the following stakeholder search terms in Boolean operator search strings: ‘teacher’, ‘primary teacher’, ‘educator’, ‘student’, ‘pupil’, ‘learner’, ‘school’, ‘primary school’, ‘elementary school’, ‘classroom’ and ‘school-based’. The search engines used for this literature review have been Google and Google Scholar. The library databases used for this literature were Oula-Finna, EBSCOhost, Journal.fi and ProQuest. The snowballing approach in the context of this thesis refers to manually searching for further relevant literature to the research topic from key focused research literature.

International research literature was selected based on exploring educators’ perspectives on physically active learning, as well as the meaning-making of physically active learning. Finnish research literature was selected based on examining physically active learning from a range of viewpoints and stakeholders’ perspectives. The term ‘educator’ in the context of this thesis refers to teachers in primary and secondary schools, as well as educational professionals in the field. The term ‘teacher’ is used to refer to in-service primary and secondary school teachers.

The purpose of the literature review is to summarize the existing and essential knowledge about the topic based on original research, as well as to make key conclusions to the pre-formulated research questions (Vilkka, 2023, p. 11-12). That is, the aim of the review is a critically examined synthesis or holistic picture of the original research (Vilkka, 2023, p. 12). This literature review focuses on formulating a critically examined synthesis of the existing research using a narrative approach. The narrative review constitutes an “Informal process of reviewing a literature based on incremental expansion of knowledge” (Fan et al., 2022, p. 173). Fan et al. (2022) identifies one strength of the narrative review to be the discovery-oriented research process, which permits modifying the literature search as the theory develops. Simultaneously,

the limitations that this approach poses include the ‘implicit biases’ of the researcher and the scope of the reviewed literature, which may be limited to literature that is widely cited (Fan et al., 2022, p. 173).

The narrative literature review was chosen by the researcher for this thesis, as it enables an adaptive literature search process that can be modified based on the researcher’s knowledge-building and meaning-making process. This review focuses on exploring physically active learning in the Finnish education system, a complex phenomenon with various stakeholders and a variety of perspectives. A narrative approach was seen to best suit the exploration of this research topic, as this literature review focuses on enquiry regarding what is known about a phenomenon and how its concepts are linked to one another (Kangasniemi et al., 2013, p. 294; Vilkka, 2023, p. 20). In other words, the nature of knowledge-building or reviewing the literature in this topic runs parallel to developing theory (see Fan et al., 2022, p. 173).

This literature review was conducted using the Search-Appraisal-Synthesis-Analysis (SALSA) framework (see Grant & Booth, 2009, p. 93-94). The literature was first searched using databases and search terms, after which the results of the searches were evaluated to select relevant literature on the topic. Subsequently, the search proceeded to a manual search phase, where the snowballing approach was used to further identify relevant literature for the review. This manual search process was repeated multiple times for selecting relevant Finnish and international literature. Next, a synthesis of the existing literature was formulated based on the selected literature; this synthesis is ‘typically narrative’ in its nature (Grant & Booth, 2009, p. 94). This synthesis was simultaneously analyzed, as it materialized thematically and conceptually (see Grant & Booth, 2009, p. 94).

The implicit biases of the researcher have been identified as one limitation of the narrative review (see Fan et al., 2022, p. 173). To increase the methodological rigor, validity and transparency of this thesis, I will state my positionality as a researcher. As a researcher, I am interested in the link between learning and movement. I have focused my university studies on physical education and movement integration into the classroom from lenses of holistic learning and student well-being. As a researcher navigating research literature in two different languages, I have utilized the MOT Dictionary and Translator tools for words and short phrases. I have used these tools to reflect and generate language choices on written communication of literature perspectives, such that ideas from research literature are presented as accurately and as coherently with the international research field as possible in this review.

Another limitation of the narrative approach identified by Fan et al. (2022) is the limited scope of the research to ‘emergent cited literature’ (p. 173). To overcome this limitation, the snowballing approach has been utilized to manually search for relevant literature in the bibliographies of original research publications in both Finnish and English. This procedure has permitted the inclusion of potentially less cited literature into the literature review. In addition, a variety of search term combinations have been utilized in the library database searches with Boolean operators to ensure a comprehensive literature search. As a novice researcher, however, I need to disclose my knowledge regarding the database algorithms that determine the search results is still emerging and developing.

2.2 Research aim and research questions

The aim of this narrative literature review is to explore physically active learning in the Finnish education context.

The following research questions will guide this narrative literature review:

- (1) What kinds of perspectives regarding physically active learning emerge from different stakeholders in education?
- (2) How does the literature situate physically active learning as part of the Finnish school system?

3 Teachers' perspectives on physically active learning

In the first section of this chapter, existing international research will be presented and reviewed from years 2017-2025 regarding teachers' perspectives on physically active learning. The second section will review existing Finnish research literature on in-service teachers' views of action-based learning and physical activity during the school day from years 2018-2019.

3.1 International literature

Daly-Smith et al. (2021) found through their systematic literature review an array of factors that impacted the implementation of physically active learning (PAL) for teachers. These aspects included teacher-level characteristics, teacher-level and school level characteristics, as well as school-level and external influences. In the teacher-level characteristics, the researchers identified that PAL teacher training, PAL delivery in the classroom, the benefits of PAL, as well as teachers' beliefs about their own efficacies influenced whether teachers adopted PAL into their pedagogy and instruction. In the overlap between teacher-level and school level influences, the research highlighted resources and 'whole-school approach' to be drivers that teachers viewed to be influential in relation to their 'PAL behavior'. With respect to influences on the school level and beyond, the 'whole-school approach' and external factors beyond the school emerged as elements that teachers felt impacted their adoption and implementation of physically active learning (PAL) (Daly-Smith et al., 2021, p. 10, 12).

Conducive learning environments, 'PAL resources' as well as finances were key themes that emerged from teachers' perspectives on adopting PAL into their teaching (Daly-Smith et al., 2021, p. 16). As a resource, time was identified as a constraining factor that challenged adopting PAL (Daly-Smith et al., 2021, p. 14). Teslo, Thurston, et al. (2023) contradicted these findings, as they found teachers considered PAL beneficial with its focus on 'student learning' during the 'short and valuable' teaching time (p. 5). Moreover, teachers' belief in their personal capability to implement PAL was positively influenced by their classroom management and transition skills (Daly-Smith et al., 2021). Adopting and integrating physically active learning (PAL) into pedagogical action in the classroom may require open-mindedness, a non-judgmental attitude, and willingness to 'trust the process' from the teachers (Daly-Smith et al., 2021, p. 15).

According to teachers' perspectives, integrating physically active learning (PAL) into their teaching practice facilitated learning for pupils in a more versatile, engaging and 'enjoyable' manner (Teslo, Jenssen, et al., 2023, p. 6). In comparison to traditional sedentary ways of teaching, many students benefitted more from PAL as a way of teaching according to teachers' observations and remarks (Teslo, Jenssen, et al., 2023, p. 6). Through physically active learning (PAL), students have access to more ways of displaying their strengths and capabilities in the school context (Teslo, Jenssen, et al., 2023; Teslo, Thurston, et al., 2023). Furthermore, students' response to PAL has been positive; teachers described that "pupils enjoyed PAL" and "even requested more PAL in teaching" (Teslo, Jenssen, et al., 2023, p. 6). Based on teachers' perceptions, integrating physically active learning (PAL) into lessons contributed positively to learners' motivation for engaging in learning as well as learners' enjoyment of lessons (Schmidt et al., 2022, p. 4).

Studies have complemented and elaborated on these findings, reporting that physically active learning (PAL) promoted inclusion in the classroom (Mandelid et al., 2024, p. 348; Teslo, Thurston, et al., 2023, p. 6). Based on teachers' perceptions of physically active learning, students participated in learning more persistently, and some students developed a 'better self-image' through this learning approach (Teslo, Thurston, et al., 2023, p. 7). Moreover, teachers interpreted that PAL provided collaborative learning opportunities, which supported learning especially for students who struggled with academic subjects (Teslo, Thurston, et al., 2023, p. 7). However, teachers expressed hesitance to adopt physically active learning (PAL) into their teaching practice; they were concerned that pupils would not learn as effectively with PAL in comparison to 'traditional teaching methods' (Mandelid et al., 2024, p. 346).

Continuous professional development programs for teachers regarding physically active learning (PAL) have acted as drivers for collaborative learning, professional reflection and versatile teaching practices (Teslo et al., 2023, p. 5). Through professional learning, teachers have realized the potential of outside-the-classroom spaces as learning environments, "sharing PAL activities and experiences with colleagues", growing confidence in themselves as teachers through reflexivity, and reframing teaching as collective endeavor and learning facilitation instead of the narrative of the 'individual teacher' (Teslo et al., 2023, p. 7). Simultaneously, low-intensity movement has been favored by educators in physically active learning (PAL), as it facilitates inclusion of all learners (Teslo, Thurston, et al., 2023, p. 7).

In a professional development program, research found teachers' understanding to become more nuanced regarding physically active learning (PAL); the initial sensemaking of PAL as physical activity in the classroom was re-constructed as integrating learning and movement together in a balanced manner (Teslo, Thurston, et al., 2023, p. 6). In their everyday pedagogy, teachers positioned PAL as an approach that 'diversified' their teaching; PAL was adopted by teachers to 'pause', 'replace', and to 'complement' their conventional teaching practices (Teslo, Thurston, et al., 2023, p. 6). Similarly, secondary school teachers (in Norway) identified that physically active learning has provided "variation to their teaching methods" (Lomsdal et al., 2023, p. 948). Schmidt et al. (2022) elaborates on the benefits teachers noticed regarding varying their teaching practice with PAL. Teachers regarded a physical activity break or physically active learning (PAL) as a beneficial means to "increase students' energy, focus attention on the task at hand, and break the monotony of sitting still for a long time" during longer lessons (Schmidt et al., 2022, p. 4).

Educators further recognized that PAL enabled learning both inside and outside the classroom (Teslo, Thurston, et al., 2023, p. 6). As a whole, PAL was conceptualized "as part of a whole repertoire of teaching strategies and approaches" (Teslo, Thurston, et al., 2023, p. 7). Teslo, Thurston, et al. (2023) found that "teachers' sensemaking of PAL is driven by their professional identity and practice" (p. 8). Schmidt et al. (2022) elaborated on the development of this professional identity and practice, as they "identified classroom-based physical activity in general and PAL specifically as a process of changing teaching practice" (p. 7).

Integrating physically active learning (PAL) into teacher's everyday pedagogy may be supported by a common goal across multiple stakeholders in education, including teacher educators, teachers, and headteachers (Teslo et al., 2023, p. 8). Framing PAL in the context of supporting learning through movement instead of the importance of physical activity and its impacts on health may positively contribute to teachers' adoption of PAL (Teslo, Thurston, et al., 2023). Teachers have understood PAL as a means of facilitating learning through movement (Teslo, Thurston, et al., 2023, p. 5). Their 'sensemaking' has emphasized learning, and PAL has been seen as a means and a vehicle to reach 'academic and social learning objectives' as defined by the curriculum (Teslo, Thurston, et al., 2023, p. 5). Balancing movement and learning has emerged as a question and a challenging issue from teachers' reflections (Teslo, Thurston, et al., 2023, p. 5). These emerging perspectives provide multidimensional viewpoints into discourses on physically active learning and the working practices of the teacher in relation to the wider school system.

3.2 Finnish teachers' perspectives

In this section, Finnish in-service teachers' perspectives will be discussed. Selected research literature in the Finnish context will be reviewed based on in-service teachers' perspectives on movement integration and action-based methods in teaching and learning. The perspectives presented include both the viewpoints of primary and secondary school teachers, as the comprehensive literature search yielded one existing research literature available on Finnish primary school teachers' perspectives. Thus, in order to gain more insight into teachers' perspectives in the system as a whole, also the existing research literature on secondary school teachers' perspectives in Finland is included in this section. The current Finnish research in the field of action-based learning is in its emerging phases, and these publications constituted the current existing research on teachers' perspectives of action-based learning.

Moilanen and Salakka (2019) present teacher accounts of action-based learning and learning through movement, and emerging findings will be presented here based on reviewing the teacher accounts. Savolainen et al. (2018) conducted a qualitative narrative study on in-service teachers' and primary teachers' perspectives regarding the challenges and opportunities presented by action-based teaching, as well as the teacher's role during action-based teaching. A quantitative study by Lehmuskallio & Toskala (2018) examined in-service secondary school physical education teachers' experiences and perspectives on making school days more physically active.

According to Moilanen and Salakka (2019), teachers have perceived that integrating movement into teaching and learning strengthen and lengthen the memory trace. One teacher expressed that learning through movement supports meaning-making in thinking. Professional mercy and flexibility towards one's teacher identity and teaching practices emerged as significant attributes for teachers in implementing action-based teaching and learning (Moilanen & Salakka, 2019). Another theme that emerged from multiple teachers' accounts was student feedback. According to teachers' perspectives, students expressed that action-based methods helped them to concentrate, were fun, and their learning readiness improved; feedback was mostly positive (Moilanen & Salakka, 2019). Multiple teachers expressed that action-based teaching and learning contributed to students' holistic development and the learning atmosphere through engagement with social and group-building skills, group spirit and belonging in the group (Moilanen & Salakka, 2019). From multiple teachers' views, the student as an active agent in the learning process emerged as a common theme. Teachers' discourses considered the

student as an active participant in learning; one teacher expressed that students provided feedback to them for action-based methods implemented in the classroom (Moilanen & Salakka, 2019). The role of action-based methods varied in teachers' pedagogies and teaching practices. Simultaneously, action-based methods and their implementation emerged as a common theme from teachers' accounts; teachers seemed to conceptualize implementation of action-based learning and its role in learning through the lens of their educational philosophy (Moilanen & Salakka, 2019).

Savolainen et al. (2018) found that teachers' narratives focused on the challenges and opportunities presented by action-based learning. Teachers discussed the challenges associated with action-based learning by focusing on matters concerning the teacher (Savolainen et al., 2018, p. 173). The teacher narratives that emerged regarding the opportunities presented by action-based learning focused on the student and the student's learning. Challenging experiences associated with action-based learning were discussed on a more general level, whereas experiences of success often included the specific (academic) subject that the teacher taught (Savolainen et al., 2018, p. 173). The main themes that emerged from teachers' perspectives regarding the challenges of action-based learning were physical factors, as well as psychological and social factors. In the physical factors overarching theme, learning space(s) and materials emerged as challenges that teachers identified regarding action-based learning. In the psychological and social factors theme, stress regarding time management, the lack of support and students' distracted behavior emerged from teachers' narratives (Savolainen et al., 2018, p. 173). Regarding the opportunities offered by action-based teaching, learning and group dynamics emerged as common themes from the teachers' narratives (Savolainen et al., 2018, p. 173). In the learning theme, students' and teachers' enthusiasm, increased motivation and concentration, deep learning, and academically weaker students' experiences of success surfaced from teachers' narratives. In the group dynamics theme, teacher narratives identified collaborative activity, peer-to-peer teaching and sharing knowledge as opportunities presented by action-based teaching (Savolainen et al., 2018, p. 173).

Multidimensional perspectives regarding school-based physical activity surfaced from teachers' viewpoints. School leadership emerged as a positive finding from teachers' perspectives regarding the aspiration to increase school-based physical activity (Lehmuskallio & Toskala, 2018, p. 82). From teachers' responses, support from home regarding school-based physical activity was identified to be scarce (Lehmuskallio & Toskala, 2018, p. 82). In-service physical education teachers viewed that other in-service teachers had more significant

possibilities for increasing students' physical activity during the school day in comparison to their own possibilities (Lehmuskallio & Toskala, 2018, p. 84-85). Almost 60 percent of in-service physical education teachers in secondary schools experienced that the responsibility to promote school-based physical activity was solely delegated to them (Lehmuskallio & Toskala, 2018, p. 85). The engagement of the whole school's staff with the school-based physical activity initiative, investments in learning space(s) and equipment, motivating students to be physically active as well as action-based approaches in teaching emerged from teachers' responses (Lehmuskallio & Toskala, 2018, p. 85). Changing the structure of the school day, with an explicit emphasis on a long recess, emerged from teachers' responses as the most significant measure to promote physical activity during the school day (Lehmuskallio & Toskala, 2018, p. 84; 85).

This section has presented different viewpoints and lenses into teachers' experiences and perspectives of action-based learning in the Finnish school context. From the existing research literature, action-based learning has been viewed by teachers from the perspectives of pedagogical knowledge, learning and teaching practice, opportunities and challenges presented by the learning approach, and school-based physical activity (Lehmuskallio & Toskala, 2018; Moilanen & Salakka, 2019; Savolainen et al., 2018).

4 Physically active learning and the school system

In this chapter, system-related perspectives and dimensions on physically active learning will be reviewed from years 2013-2024 through interweaving perspectives of international and Finnish research literature.

4.1 Physically active and action-based learning at the policy level in Finland: an overview

The daily physical activity recommendation for 7-17-year-olds in Finland is 60 minutes of moderate to intense physical activity every day in a way that is suitable for the young person's individual needs and age (Sääkslahti et al., 2021, p. 11). Furthermore, Sääkslahti et al. (2021) notes that young people should avoid long and substantial periods of passivity or staying still (p. 11). They suggest that schools and educational institutions can support children's and young people's physical activity through consistent use of teaching methods that physically activate learners and enhance learning (Sääkslahti et al., 2021). Examples of such methods include teamwork and action-based working methods (p. 33). Sääkslahti et al. (2021) also identifies breaking up lesson time through recesses or movement breaks as an important practice to support students' physical activity (p. 33). Similarly, Kantomaa et al. (2018) identifies movement breaks as a way to add physical activity into lessons (p. 11). Even short action-based activities during lessons increase physical activity and decrease passivity (Aira et al., 2013). Action-based teaching, breaking up sedentary time during lessons, working while standing during lesson time and active ways of sitting (Tammelin et al., 2015) may promote more physically active school days.

Physical activity can be integrated into lessons through action-based methods; teaching can be fully action-based, or action-based teaching can be one method among other teaching methods (Kantomaa et al., 2018, p. 11). Action-based approaches are not linked to one specific subject; these approaches can rather be utilized in different subjects and can become part of the whole school day (Savolainen et al., 2018, p. 166). Experiential and action-based working methods as well as using different senses and movement increase the experientiality of learning and strengthen motivation (Finnish National Agency for Education, 2016, p. 30).

The Finnish National Core Curriculum refers to action-based learning as 'functional learning' (Finnish National Agency for Education, 2016). In the curriculum, action-based learning is

referred to a total of 48 times with the terms ‘functional learning’, ‘functional working methods’, ‘functional’, and ‘functionality’ (Finnish National Agency for Education, 2016). The term ‘liikunnallisuus’ in Finnish has no direct translation and refers to the combination of movement, physical activity, exercise, sport and holistic physical education in the school context. The closest synonym may be considered ‘sportiveness’. The curriculum refers to the ‘liikunnallisuus’ term and its different forms a total 13 times (Finnish National Agency for Education, 2016). In the Finnish policy context, Sääkslahti et al. (2021) has identified the organization of quality physical education and encouraging teachers to engage in in-service training to be measures that support children and young people’s physical activity (p. 33).

4.2 Integrating physically active learning into the classroom: the teacher and the system

In adopting physically active learning (PAL) into the classroom, teachers’ teaching practices are influenced by “school systems, policies and stakeholders”, which is highlighted by school-wide and societal topical matters (Daly-Smith et al., 2021, p. 15). In their own role, the teacher can increase pupils’ physical activity and movement through action-based teaching methods (Savolainen et al., 2018, p. 169). Daly-Smith et al. (2021) found that integration of physically active learning (PAL) into instruction was impacted positively by parents, based on teachers’ viewpoints (p. 14). Furthermore, teachers pointed out government’s educational policy and school standards as significant factors in determining PAL implementation in the classroom (Daly-Smith et al., 2021, p. 14). National guidelines and the ‘school context’ influenced how teachers constructed their understanding of PAL (Teslo, Thurston, et al., 2023, p. 5). Similarly, Mandelid et al. (2024) found that adopting PAL into practice is “dependent on the curriculum content as well as teachers’ relationships with their pupils” (p. 347). This may show the intricate links of physically active learning between the curriculum, the school and the teacher in the school system.

Daly-Smith et al. (2021) has identified an emerging narrative on the potential of school systems to support teachers’ “capability, opportunity and motivation” to integrate physically active learning (PAL) into their teaching (p. 15). One significant driver that may influence teachers’ adoption of PAL is professional training that is accessible to all educators and supports educators in developing PAL classroom management skills (Daly-Smith et al., 2021, p. 15-16). Conducive materials and learning spaces for PAL emerge as significant areas that the school system can influence, which in turn may influence teachers’ willingness to adopt PAL (Daly-Smith et al., 2021). Another sphere of influence for the school system is widespread and

‘targeted communication’ to educators regarding the research and advantages of physically active learning (Daly-Smith et al., 2021, p. 15). Concurring with communication as a direction of further development, the staff’s commitment, students’ participation and support from home for physically active school days may be enabled by better communication (Lehmuskallio and Toskala, 2018, p. 85). This may interestingly suggest that targeted communication to different stakeholders in the school community may promote the transformation of the classroom culture(s) and learning towards more physically active engagement and working practices.

The narrative of the individual physically active learning (PAL) teacher emerged from reviewing the existing literature:

“The work environment, colleagues, and school leaders influenced the teachers’ experience of adopting and implementing PAL. Where to seek support and help was not clear and teachers wondered who was responsible for supporting them, since several pointed out that the whole responsibility was placed on them individually. In general, the teachers wished for more support and leadership from school management, in an endeavor to make the implementation of PAL a shared project. Several teachers found that school leaders’ support declined over time” (Schmidt et al., 2022, p. 6).

The abovementioned finding by Schmidt et al. (2022) brings interesting perspectives into the discourse of (shared) responsibility of physically active learning in the school system. Ultimately, the individual narrative may scrutinize whose role in the system it is to integrate physically active learning (PAL) into the prevailing educational paradigm. Educating teachers to adopt PAL into their teaching practice may benefit from a process-oriented approach that centers on critically examining teachers’ existing teaching practice and harnessing their experiential knowledge in order to re-construct teaching practice that incorporates PAL (Teslo et al., 2023, p. 8). That is, a suitable goal may be to broaden teacher education “beyond the acquisition of contextual PAL skills and knowledge” (Teslo et al., 2023, p. 8).

4.3 The school as a system and an organization

The school as an organization emerged as a stakeholder in physically active learning, especially in terms of the school culture and working practices. Kämppe et al. (2018) points out that physical activity during the school day is linked to the operating culture of the school (p. 89). From reviewing the literature, numerical indicators emerged regarding the implementation of

action-based learning at the school level. 51 percent of primary schools estimated that action-based methods are utilized in the lessons of different (academic) subjects (Kämppi et al., 2018, p. 93). At the school level, establishing practical guidelines that break up sedentary time during lessons was reported by 27 percent of primary schools, which emerged as significantly rare (Kämppi et al., 2018, p. 93). Half of in-service primary and special education teachers utilized action-based methods during most or all lessons; 65 percent of in-service primary teachers broke up long periods of sedentary time during most or all lessons (Kämppi et al., 2018, p. 93). These indicators suggest that working practices in schools may be underpinned by an autonomous school culture, which places more emphasis on the autonomy and expertise of the teacher to implement physically active learning, instead of collective whole school guidelines and approaches.

From research, practical suggestions emerge regarding how the school system can support physically active learning (PAL) at different levels. At the school level, Kantomaa et al. (2018) emphasizes that it is good to remove restrictions and prohibitions that unnecessarily limit the child from moving freely at school (p. 11). Earlier research concurs with this: Vuorinen and Huovinen (1993) point out the most certain way to create disturbance in classroom work peace is to prohibit young people from expressing themselves physically (p. 181). Intersecting with different levels of the school system, Schmidt et al. (2022) proposes that integrating physically active learning into teaching can be enhanced by “a collaborative creative competence group at school level, across schools or at a national level, which develops curriculum-specific and grade-specific PAL activities” (p. 8-9).

The national and local levels of influence for physically active learning in the Finnish school system emerged from examining the Schools on the Move- initiative. Examining through an international lens, the Finnish Schools on the Move- initiative differs from the school-based physical activity promotion programs of other countries (Kämppi et al., 2018, p. 89). In Finland, the guiding principle of action is activity and measures that emerge from the context and needs of each individual school (Kämppi et al., 2018, p. 89). Future directions in terms of the national Schools on the Move- initiative include measures that take the local context of the school into account. Isoaho & Summanen (2019) suggest continuing the development of the structure of the school day, such that it supports physical activity during the school day in a manner that is conducive to the operating environment of each municipality (p. 98). Further aims include that more and more lessons of different academic subjects incorporate action-based learning and periods of breaking up sedentary time into lessons (Isoaho & Summanen, 2019, p. 98). The

researchers suggest actively spreading effective working practices that contribute to changing the current structure of the school day (Isoaho & Summanen, 2019, p. 98), which may enable students to be more physically active. Through a widely networked program that follows a bottom-up approach and engages schools as the operating environment, school operational cultures and the structure of school days can be changed to encourage movement and to decrease sedentary time (Isoaho & Summanen, 2019, p. 92). On the whole, a national guidance framework lens emerged from the Schools on the Move- initiative evaluation, enabling autonomy at the local and school levels regarding the implementation of physically active learning and its related measures.

From the school system perspective, development of the school as an organization and long-term changes emerged as a theme from the reviewed literature. In its development, the school should be viewed as a collective whole: the operating groups are seen as dynamic, and they are considered cross-disciplinary and multiprofessional interaction networks (Lehmuskallio & Toskala, 2018, p. 85). Students and important stakeholders should be included in the transformation process, whereupon the school can act as a collective learning community (Lehmuskallio & Toskala, p. 85). Isoaho & Summanen (2019) suggest that changing the structure of the school day and implementing teaching of many subjects through physically active approaches demands development measures in various school-related sectors. Collective planning in the school community, in-service training for staff, and the development of commuting arrangements to school are required in order to achieve long-term change (Isoaho & Summanen, 2019, p. 82).

5 Action-based or physically active learning in the Finnish context: theory to practice

From reviewing the literature, multiple viewpoints emerged regarding the practical applications of action-based learning to the classroom context. Action-based teaching methods can be utilized to check homework, to spark interest in a new topic, to practice already learned material, and to concretize the studied material (Kantomaa et al., 2018). Kataja et al. (2011) identifies action-based methods to include learning through mental imagery, experiential learning, adventure, adventure education, drama, solution-oriented methods, narrative methods, sport and physical education, as well as play. Savolainen et al. (2018) identifies action-based methods to encompass groupwork, play and drama, which strive to foster the student's active agency, interaction skills and experientiality (p. 166). Activating action-based experiences is additionally possible through investing in physical objects in the classroom; such equipment can include bouncy balls, adjoining tables for groupwork, or adjustable desks, so that students can stand while they work (Savolainen et al., 2018).

Practical materials and teacher resources on action-based learning in the Finnish context focus on breaking up sedentary time during lessons through movement breaks (Syväoja et al., 2021), or incorporating action-based teaching into learning activities that develop group dynamics (Kataja et al., 2011). Syväoja et al. (2021) takes differentiation and required learning equipment into account in the movement break activities, and the content of the activities focuses on physical activity. Kataja et al. (2011), on the other hand, approaches learning activities from the viewpoint of developing holistic learning experiences in group settings and facilitating social learning through action-based methods. The contents of the learning activities emphasize social, interpersonal and collaborative learning for a versatile range of groups, including early childhood education, primary education, secondary education and adult education (Kataja et al., 2011). These action-based methods and activities contain concepts and contents that are implicitly linked to learning objectives of different subjects in the curriculum. However, these objectives or connections are not explicitly stated. The objectives stated include holistic learning goals such as 'collaboration', 'joy of the group', 'communication', 'concentration', and 'imagination' (Kataja et al., 2011, p. 92-107).

Viikari et al. (2014) aims to offer models for implementing action-based teaching (p. 5). They provide practical ideas on action-based learning in different subjects, movement breaks, and increasing action-based activity through modifying the learning environment (Viikari et al.,

2014). Action-based methods include activities that correspond to the academic subject contents of mathematics, mother tongue and environmental studies in primary school; the activities can be adapted across multiple grade levels (Viikari et al., 2014, p. 10, 10-17). The movement breaks aim to break up sedentary time and have no pedagogical or didactic aims (Viikari et al., 2014). These breaks presented can be conceptualized in two categories: movement break activities and movement break classroom routines (Viikari et al., 2014, p. 18-20). Modifying the learning environment presents two angles for structurally increasing physical activity: arranging tasks around different parts of the learning space, as well as movement during transition and waiting periods during the school day (Viikari et al., 2014, p. 21-22).

Moilanen & Salakka (2019) conceptualize integrating movement into learning for lower and upper secondary school in two approaches: implicit and explicit movement during lessons of academic subjects. In the explicit movement approach, teachers explain to students how they plan to incorporate movement into lessons and why this is important (p. 59). Teachers also involve students to create movement break exercises, or different action-based learning approaches (p. 59-60). They may additionally organize campaigns that strive to consciously limit sedentary time during lessons (p. 60). In the implicit movement approach, teachers do not want to emphasize to the students that they strive to break up sedentary time during lessons frequently (Moilanen & Salakka, 2019, p. 59), so they integrate movement into lessons implicitly as part of the hidden curriculum. The mix of these two approaches is also utilized by some educators, and a group of educators have implicitly and unconsciously integrated movement into their teaching over the years without realizing it (Moilanen & Salakka, 2019, p. 60).

Moreover, Moilanen & Salakka (2019) present action-based activities that integrate movement into teaching. These activities may be conceptualized in three categories: general activities, technology-based activities and subject-specific activities. In general activities, Moilanen & Salakka (2019) provide practical learning activities that may be adapted to the context and classroom of each academic subject. These activities may further be perceived as movement break activities, movement embedded into the structure of the lesson, and action-based learning activities relating to the learning objectives of the lesson. In technology-based activities, Moilanen & Salakka (2019) offer practical action-based activities and methods for teaching, which are further subdivided into teaching videos (by students), applications for teaching natural sciences, and applications for teaching different (academic) subjects. In subject-specific

movement integration activities, different practical activities for movement integration are included for biology, ethics, special education, philosophy, physics and chemistry, history and civics, languages, home economics, visual art, handicrafts, geography and geology, mathematics, music, student counselling, health science, religion, mother tongue and literature and multidisciplinary units (Moilanen & Salakka, 2019).

As a whole, the available resources that support action-based learning and methods seem to concentrate on providing general activities that may be applied to the specific learning context(s), as well as specific activities that educators may directly implement and adapt into their teaching (Kataja et al., 2011; Moilanen & Salakka, 2019; Syväoja et al., 2021; Viikari et al., 2014). The research literature reviewed on practical materials additionally conceptualizes action-based learning in practice as different approaches to integrating movement into learning and the school day (Moilanen & Salakka, 2019; Syväoja et al., 2021; Viikari et al., 2014). From the reviewed literature, emerging perspectives have concretized what action-based teaching and learning may mean in practice, when it may be appropriate to implement, and what method(s) as well as learning equipment may support this approach (Kantomaa et al., 2018; Kataja et al., 2011; Moilanen & Salakka, 2019; Savolainen et al., 2018; Syväoja et al., 2021; Viikari et al., 2014).

6 Discussion

Holistically, the following finding emerges after reviewing the selected research literature: physically active learning in the Finnish context is discussed with various terms and names, yet they all constitute one holistic approach. Physical activity during the school day, breaking up sedentary time during classes, as well as action-based teaching and learning methods have emerged from the Finnish research literature. The Schools on the Move- national initiative, as well as educational policy contain emerging ideas on physically active learning on the national and local levels. Simultaneously, ideas for the school level are proposed, yet the implementation of these ideas remains on the shoulders of the teachers and the school leadership. While there are emerging ideas on physically active learning, physically active learning may not yet be implemented consistently at the practical level in schools nationwide.

All in all, the research literature situates physically active learning as an emerging working approach that weaves together the autonomous classroom, school culture and school as part of the national framework. On the practical level in Finland, however, there is very little research available on the practical implementation of physically active or action-based learning in the classroom. In other words, physically active learning emerges as visible on the policy level yet is currently quite invisible on the practical level in the research context and research field. The responsibility for the practical implementation seems to be placed on the shoulders of the school and the individual teacher. International and Finnish research literature concur with this, as teachers have highlighted the responsibility to deliver physically active learning or to promote physically active school days has been placed on them individually (see Lehmuskallio & Toskala, 2018, p. 85; Schmidt et al., 2022, p. 6).

One criticism in the Finnish education system regarding the implementation of physically active learning is the autonomous role of the schools. While the autonomy to implement physically active learning based on the context and the needs of the school (see Kämppi et al., 2018) may provide versatile opportunities for implementation, the implementation relies on the expertise of the in-service teacher and the school leadership. This may cause discrepancies between schools and municipalities. Moreover, the scarcity of whole school guidelines (see Kämppi et al., 2018) that promote physical activity may interestingly bring the autonomy of the classroom into question. This poses the following questions: To what extent does the context and operational culture of the Finnish school system limit effectively implementing change? To

what extent does autonomy in the school system rely on the individual educational professional to affect change regarding physically active learning?

Teacher materials and resources in the Finnish context for action-based learning are based on movement breaks during lessons, or learning activities that may implicitly incorporate learning objectives from different subjects into the learning activity itself (Kataja et al., 2011; Syväoja et al., 2021). Though the movement breaks themselves may not constitute action-based teaching by themselves, the materials may be adapted to fit action-based and physically active learning approaches. This adaption and its responsibility, however, may be placed on the teacher. That is, the adaption needed relies on the skills, expertise and workload of the individual teacher or a team of teachers. Across local levels, this expertise and workload may vary, and thus more systematic resources are needed for any teacher in the education system to implement action-based teaching. A resource development team on a national level (see Schmidt et al., 2022) may enable action-based and physically active learning to better reach all teachers and students across municipalities in Finland.

International literature seems to conceptualize physically active learning as a holistic practice for the teacher to adopt (Mandelid et al., 2024). Physically active learning is constructed as an approach that enables the student to become a more active agent in their learning through more activating and accessible teaching methods (Mandelid et al., 2024; Teslo, Jenssen, et al., 2023; Teslo, Thurston, et al., 2023). These emerging perspectives conceptualize learning from the teacher's lens. Though student agency emerges in these viewpoints through the lens of teaching, the consideration of physically active learning through the student lens seems quite absent in the reviewed international research literature. Simultaneously, Finnish research literature seems to conceptualize action-based learning and methods as part of a more holistic approach to support the learner's learning and well-being during lessons and the school day (Isoaho & Summanen, 2019; Savolainen et al., 2018). Learning through movement is conceptualized through increasing conceptual understanding and concretizing teaching.

In examining the Finnish school system as a research context, school-based physical activity and physically active learning seem to be conceptualized very holistically with embedded meanings. In the research field, dialogue seems to be in the emerging phases, yet in the practical field, there are various, multifaceted and multiple realities of action-based or physically active learning. An idea or a process related to physically active learning approaches in school may contain various embedded meanings that depend on the circulating discourses of school-based

physical activity. In framing the scope of this literature review, the lack of synthesis in terminology was visible in both the Finnish and international research fields. In application to the school system in Finland, this present circumstance may require co-construction of perspectives and knowledge between the practical, policy and research fields to generate common understanding that drives meaningful change. This dialogue and knowledge co-creation bridges multiple everyday lived experiences in schools with the national frameworks and research that may create the frames of reference for these lived experiences. The construction and re-construction of these discourses may constitute one component of shared educational realities in the Finnish school context and in physically active learning. Thus, the following questions surface: How can the Finnish school system co-construct coherent discourses and understandings of physically active learning? How can the system and its stakeholders enable sufficient autonomy in the everyday school life while effectively supporting a shared reality committed to student well-being through national frameworks of physically active learning?

Methodologically, one consideration that may increase the methodological validity of this narrative review could be utilizing Scopus in order to ensure a more representative literature search on the topic that contains emergent cited literature (see Fan et al., 2022) as well as relevant less cited literature. At the same time, the snowballing approach and a variety of search strings with key terms were utilized in the literature search for this review, which permitted a versatile selection of relevant literature to review. It is additionally significant to mention that this literature review focused on expanding understanding of physically active learning in the Finnish context based on existing literature. By extension, the very nature of this literature review did not require a representative literature, but rather a focused literature on the research context and relevant literature on the topic (see Vilkkä, 2023, p. 20).

7 Conclusion

In this thesis and narrative review, physically active learning has been explored in relation to the Finnish education system. The versatile viewpoints that emerged from research literature have included different stakeholders in education where research is available. In the Finnish context, these stakeholders have included teachers, educational policy, national initiatives, and teacher resource materials. Physically active learning has emerged from teachers' perspectives through lenses of teaching practice, experience, professional growth, sense-making, teaching methods, as well as opportunities and challenges posed by the learning approach. Active ways of working during the lesson time and the school day, movement breaks and movement integration, frequent use of action-based methods in the classroom, and developing the structure of the school day to support more physical activity are emerging perspectives in the Finnish educational policy and national initiative contexts. From educator resource materials, emerging perspectives have encompassed movement integration into lessons, working methods that support physically active learning, and subject-specific as well as general action-based learning activities.

Furthermore, this thesis has focused on situating physically active learning in relation to the Finnish education system and its stakeholders. The research literature situates physically active learning as a learning, teaching, and working approach that interweaves the autonomous classroom with the Finnish school context. In its consideration of the school context, the research literature links physically active learning to the operational culture of the school, the positionality of the school in the national framework and educational policy in Finland.

Directions for future research include students' experiences and sense-making of physically active learning, learning spaces in relation to physically active learning, as well as the school, its operational culture and context in relation to physically active learning in Finland. The role of the student has not been present sufficiently and directly in research, and thus one future direction of research may be to explore students' perspectives and lived experiences of physically active or action-based learning. Another future direction of research may be to explore learning environments in relation to action-based learning, or the school as an organization and the school culture in relation to physically active learning. Moreover, the operating environments for physically active learning, especially the local environment and the classroom, need further research in the Finnish context. The local level of municipalities in

Finland necessitates further inquiry, as working practices may vary across localities. A case study focusing on one municipality and its implementation of physically active learning within the school framework may provide insight of educational practices at the local and school levels. Exploring the integration of physically active learning (PAL) into the municipality and its schools as organizations may enable better understanding on how “context shapes the enactment of PAL” (Teslo et al., 2023, p. 9). This kind of future research may provide insight, synthesis and links between the policy making, administrative and classroom working practices of physically active learning in the education system in Finland.

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