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The Role of Active Games in Developing Physical Activity and Motor Competence Among Primary School Children: An Integrative Review

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Abstract: Background: Active games are the most common pedagogical means of raising physical activity in primary school, yet two literatures describe them differently: Western research measures activity and motor competence as outcomes, whereas the post-Soviet methodological tradition specifies game content in detail without quantifying the activity it produces. Aim: To integrate the two literatures. Method: A theory-driven integrative review built on the developmental model of motor competence, competence motivation theory, self-determination theory and the socio-ecological model. Results: The literature establishes that fundamental movement skills predict later activity, that skill-focused and lesson-redesign interventions raise in-school activity while effects on total daily activity are small, and that perceived competence and need satisfaction mediate persistence. A four-stage framework treats the active game as a dose of movement that produces skill, which produces perceived competence, which sustains habitual activity. Conclusions: The framework yields testable hypotheses and implies that game selection should be matched to the specific aim being pursued.

Keywords: Primary school children; physical activity; motor competence; fundamental movement skills; active games; perceived competence; self-determination; socio-ecological model.

Introduction: Most children do not reach the recommended average of 60 minutes of moderate-to-vigorous physical activity per day (Bull et al., 2020), and insufficient activity among school-aged populations is a global pattern rather than a local one (Guthold et al., 2020). Because activity tracks with moderate stability from childhood into adulthood (Telama et al., 2005), the primary school years are a point of leverage rather than one stage among many.

The pedagogical means used at this age is, almost universally, the active game. In the post-Soviet tradition the active game is a developed methodological object: games are classified by age, movement content and organisational form, and placed within the structure of the lesson (Zhukov, 2004; Stepanenkova, 2006), on a theoretical base in which play is the leading activity of the developing child (Vygotskiy, 1966; El'konin, 1978). In English-language research the same practice appears indirectly, as the content of lessons, recess and classroom breaks whose measured effect on activity is reported. Since the two literatures rarely meet, this review asks what mechanisms connect game participation to habitual activity, what the measured effects are, and where the two traditions complement each other.

LITERATURE REVIEW

Motor competence develops through identifiable stages across the primary years (Gallahue et al., 2012), and its level is consequential: childhood motor skill proficiency predicts adolescent physical activity (Barnett et al., 2009), and skill proficiency is associated with a range of health indicators (Lubans et al., 2010).

Stodden et al. (2008) formalised the relationship as reciprocal and age-dependent, with competence driving activity in early childhood and activity driving competence later, the loop running either upward or downward. Interventions targeting skills are effective on skill outcomes (Logan et al., 2012), so the first link in the chain is modifiable.

The second strand concerns why children persist. Harter (1978) argued that successful mastery attempts raise perceived competence, which motivates further attempts; self-determination theory locates the same effect in the satisfaction of competence, autonomy and relatedness needs (Ryan & Deci, 2000); and self-efficacy beliefs govern persistence when a task becomes difficult (Bandura, 1997). Physical activity play has also been argued to be a distinct developmental phenomenon with its own functions, not merely a diluted form of exercise (Pellegrini & Smith, 1998).

The third strand is the measured effect of school provision. Redesigning the physical education lesson raised activity and fitness over two years (Sallis et al., 1997); recess interventions raise activity (Parrish et al., 2013), and recess activity levels themselves have been characterised (Ridgers et al., 2006); short classroom activity breaks show favourable activity and learning outcomes (Erwin et al., 2012; Watson et al., 2017) and can raise academic motivation (Vazou et al., 2012). A Cochrane review found school-based programmes beneficial on several outcomes (Dobbins et al., 2013), while a meta-analysis restricted to objectively measured outcomes found the effect on total daily activity small (Metcalf et al., 2012). The broader educational benefits of school physical education have been reviewed separately (Bailey, 2006), alongside effects on cognition (Hillman et al., 2008; Donnelly et al., 2016) and mental health (Biddle & Asare, 2011).

METHODOLOGY

This is a theory-driven integrative review, not a systematic one: unregistered, without PRISMA procedures or pooled effect estimates. Sources were selected for theoretical centrality, relevance to primary-school populations, and coverage of the Russian-language methodology of active games, then coded and mapped onto the sequence running from game provision through motor competence and perceived competence to habitual activity.

AN INTEGRATIVE FRAMEWORK

The first stage is the game as a dose of movement. What a game delivers is not its name but its structure: the organisational form determines how long a child actually moves, since frontal and station formats minimise queuing whereas relays build waiting into the design, and the intensity profile determines how much of that movement falls in the moderate-to-vigorous band to which the recommendation refers (Bull et al., 2020). The usable summary measure is therefore the motor density of the session, which standard observation protocols make recordable (McKenzie et al., 1992), with free activity in the school grounds captured by complementary observation systems (McKenzie et al., 2000). This is precisely where the post-Soviet tradition contributes: it specifies what to put inside the dose, having classified games by movement content and by position in the lesson (Zhukov, 2004; Stepanenkova, 2006), and having developed criteria for the coordination abilities the game is to train (Lyakh, 2006; Kholodov & Kuznetsov, 2003; Matveev, 1991).

The second stage is motor competence. Games rehearse locomotor and manipulative patterns in a context that demands their variable application rather than their isolated repetition, and competence so acquired is the component with predictive value for later activity (Barnett et al., 2009; Stodden et al., 2008). Interventions can move it (Logan et al., 2012), but only if game content is selected for the skills it actually rehearses, which is a methodological decision, not a by-product of playing.

The third stage is perceived competence and motivation. A game that every child can succeed in supplies the mastery experience on which perceived competence is built (Harter, 1978; Bandura, 1997), and games afford choice and peer contact, so they can satisfy autonomy and relatedness alongside competence (Ryan & Deci, 2000). The corollary is that elimination rules, which remove the least skilled children from play first, work against both the dose and the motivation: the children who most need movement receive least of it.

The fourth stage is habitual activity. Here the framework must be modest. School-based provision reliably raises activity within school time, but its effect

on total daily activity measured objectively is small (Metcalf et al., 2012), partly because children compensate outside school and partly because lessons occupy a small share of the day. Activity nonetheless tracks into later life (Telama et al., 2005), so the realistic claim is that the school shapes the trajectory rather than the daily total.

A context layer runs through all four stages. Activity is determined simultaneously at individual, family, school and neighbourhood levels (Bronfenbrenner, 1979; Sallis et al., 2008): timetable, recess arrangements, playground space and equipment, and teacher choices set the ceiling on what any game can deliver. The stages are not strictly sequential, and a feedback loop closes the framework, as competent and motivated children seek out more play, which further develops competence.

DISCUSSION

Much of the apparent inconsistency between the two literatures dissolves once the stages are separated. A study reporting that games improved physical qualities and a study reporting that a school programme barely moved daily activity are not in conflict: they measure different stages. It also follows that fitness test batteries cannot establish that activity rose, and that activity measures cannot establish that skills improved; the two must be measured separately and interpreted separately.

Implications for Uzbekistan remain an agenda, since no nationally representative objectively measured prevalence data exist. Education legislation obliges the system to protect pupils' health (Law of the Republic of Uzbekistan "On Education", 2020), the sport sector has been placed on a renewed legal basis (Law of the Republic of Uzbekistan "On Physical Culture and Sport", 2026), and a healthy lifestyle and mass sport are the subject of a dedicated presidential decree (Decree of the President of the Republic of Uzbekistan No. PF-6099, 2020). Local studies report that active games improve physical qualities (Arzieva, 2025; Mirjamolov, 2026), the experience of using them in primary classes has been examined (Musurmonov et al., 2024), and criteria for organising team games have been proposed (Karimova, 2026); what is missing is measurement of activity itself.

LIMITATIONS AND RESEARCH AGENDA

As a narrative review of selected sources, this article cannot claim exhaustive coverage. Most of the evidence on the first and fourth stages comes from high-income settings with different school organisation, and the Russian-language methodological literature, though rich in content, rarely reports measured activity, which leaves the first stage described more fully than it is evidenced. Needed next are cluster-randomised designs in primary schools, objectively measured activity alongside skill assessment, and observation of motor density as a process measure rather than an outcome.

CONCLUSION

Integrating the measurement-oriented literature with the post-Soviet methodology of active games, this review proposed a four-stage framework in which the game acts as a dose of movement that produces motor competence, which produces perceived competence, which sustains habitual activity, all of it bounded by the school context. Offered as testable hypotheses, the framework implies that game selection should be matched to the stage being targeted, and that elimination-based formats are counterproductive on both the activity and the motivational pathway.

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