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PHYSICAL LITERACY ASSESSMENT. A LITERATURE REVIEW

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Abstract:
Physical literacy (PL) has become one of the main goals of physical education, extracurricular physical activity and the promotion of sport worldwide. In the National Guidelines (2012), teaching motor competencies is oriented to promote the factors that makeup PL. The paper aims to present a review of the main protocols and tests for the assessment of motor skills-abilities used in primary schools in order to analyze the structure and identify advantages and limitations. Assessing the teaching process and children's motor skills is possible through various protocols, allowing systematic data to be acquired, learning milestones to be monitored, and motor development to be followed. The use of motor assessment protocols is a determinant of evidence-based physical education teaching.

Keywords: motor competencies; motor development; physical education; physical literacy; motor assessment protocols

1. Introduction

Physical Literacy (PL) is a term that has gained popularity and increasing importance in recent years worldwide. It has contributed to shaping educational research pathways, internal and external school projects, as well as connections and interrelations with extracurricular sports and other educational contexts.

Physical Literacy has been described as a gateway to lifelong participation in physical activity across various educational contexts, including schools, sports, leisure, and healthcare for the prevention and management of non-communicable diseases (Cairney et al., 2019).

Edwards et al. (2017) highlight the need to develop advanced tools and methodologies for measuring physical literacy, overcoming the limitations of traditional

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and linear approaches, which prove inadequate for capturing the multidimensional complexity of this concept. The authors emphasize the discrepancies between definitions and operationalization methods, suggesting that greater alignment between philosophical foundations and methodological practices (across different educational contexts) could significantly advance research.

To this end, they propose adopting a holistic and integrated approach that incorporates both qualitative and quantitative methodologies. This approach aims to comprehensively analyze not only physical competencies but also affective and cognitive domains (Edwards et al., 2017; Martins et al., 2020).

The assessment of Physical Literacy factors through different approaches and tools is linked to teaching methodologies but also expresses behaviors and habits acquired by children outside of school.

2. Physical Literacy and the Educational Process in Primary School

The process of assessment and evaluation in primary schools requires methods and tests that enable the analysis of the prerequisites for learning, the teaching process undertaken, and the outcomes achieved from a perspective that considers the whole person. In Europe, we are in a phase of sharing models and organizational approaches across different contexts, and evaluation methods still require further study (Carl et al., 2023).

Physical literacy refers to a process of evolution and development of motivation, a sense of personal self-efficacy, motor competence, and knowledge, which enable individuals to consciously adopt and maintain a physically active lifestyle throughout different life stages (Whitehead, 2013).

A student with a high level of physical literacy can perform their motor repertoire with mastery and creativity across a wide variety of educational contexts. Starting from the definition provided by Whitehead (2013), subsequent definitions and interpretations, seemingly overlapping, have highlighted both the individual components motor, cognitive, emotional-affective, and social that constitute Physical Literacy (PL) and the contexts in which it is developed.

Consequently, the relationship with methodologies for evaluating each individual factor and their interconnections assumes significant educational value.

Physical literacy, therefore, is a multidimensional concept that, starting from body-movement experiences, promotes students' understanding of the lifelong benefits of physical activity. It involves acquiring and mastering fundamental motor skills, understanding the principles of physical efficiency, learning the rules of games and sports, and developing the ability to make informed decisions about physical activities in various contexts.

In a period where the study of various technologies is often the focus for determining their actual educational contribution, it is essential not to overlook physical literacy in the educational process of children and young people.

Physical literacy goes beyond learning sports skills or developing physical fitness; it is framed as a genuine process of education through and about physical activities,

starting from early childhood and primary education. From this perspective, motor experiences involving corporeality serve as mediating arenas for educational processes and teaching interventions. These experiences are essential and indispensable within both disciplinary and cross-disciplinary learning processes.

This highlights an educational approach that values the unity of the individual, where the foundational factors of motor literacy align closely with those of motor competence (Carl et al., 2023; Castoldi, 2015; Colella, 2011).

A motor competence reflects the reciprocal interaction of skills, knowledge, and attitudes based on an individual's motor, cognitive, emotional, and social abilities in relation to the contexts in which it is realized (Pellerey, 2000; Colella, 2011).

Physical literacy can, therefore, be considered a process of acquiring and developing motor competencies through which individuals express their repertoire of motor skills and abilities, their knowledge and motivations, their level of perceived self-efficacy, and their interaction within the socio-cultural context (Martins et al., 2020; O'Sullivan et al., 2020).

It is worth noting that in primary school, physical education represents an essential opportunity for all children to acquire motor skills and achieve appropriate motor development. This increases the likelihood of regular participation in physical and sports activities.

It is widely recognized that children's motor behavior, both at school and during leisure time, is influenced by their repertoire of motor skills and the degree of development of the underlying and related motor abilities. Indeed, higher levels of motor abilities during childhood and adolescence are crucial for successful participation in a variety of physical activities, including those outside school settings. This contributes to education in body awareness and movement, promoting an active lifestyle throughout life.

The process of assessing children's motor competencies allows for monitoring motor development as well as cognitive, emotional, and social interconnections. It reflects the teaching and methodological choices that underpin the quality of instruction. There is a need to analyze and utilize various protocols that provide teachers and students with valid and reliable data, ideally collected during curricular teaching. This data should address the foundations of learning, identify potential gaps, and outline developmental directions for the educational process in relation to the core themes of the National Guidelines.

In many countries, there are more or less structured educational and organizational models of motor literacy in primary schools. These models not only reflect different interpretations of education through physical activities and sports but also address the continuity between school and extracurricular contexts.

Notably, in countries such as England, Canada, and Australia, educational intervention models have been developed focusing on both teaching methodologies and assessment methods and tools. These include the creation of detailed protocols designed to collect diverse and complementary quantitative and qualitative data on the various

factors constituting motor competence. This approach allows for monitoring individual motor repertoires and the development of related abilities (Young et al., 2021).

2. From Models to Methods of Motor Assessment: Process or Performance?

An essential priority for instructional design is the analysis of the reference teaching and assessment models. A model guides the definition of objectives, the selection of content and teaching methodologies, the determination of students' motor competencies at the end of the educational cycle, and the evaluation process (Casey & MacPhail, 2018; Colella, 2022, p. 31).

Studies on teaching physical education in primary schools propose various organizational and instructional models, contributing to redefining educational meanings and analyzing methods and tests to be used for motor assessment (Ortega et al., 2015; Invernizzi et al., 2019; Condello et al., 2021; Rodrigues et al., 2022).

The need to align the teaching approach with a model has stimulated an in-depth investigation into different organizational methods, teaching styles, and strategies, highlighting interconnections among heterogeneous variables.

The model-based approach to physical education is therefore strongly advocated to update the epistemological constraints and formative values of the discipline. It focuses on:

a) the selection and analysis of the motor task;
b) the application of teaching methodologies;
c) the choice of methods and tests for assessment and evaluation (Dyson et al., 2016; Tolgfors et al., 2018; Arufe-Giráldez et al., 2023).

Before presenting the main motor assessment protocols related to primary schools, it is necessary to revisit the primary models and reference methods that currently enliven the debate on the quality of physical education teaching in primary schools.

A key question emerges:

- Is it more important to evaluate the teaching process itself or the initial, intermediate, and final motor performances?

In motor competencies education, systematically monitoring the teaching process requires moving beyond traditional verification and evaluation models based on metric or time-based measurements. Instead, it emphasizes shaping educational pathways that prioritize the personal development of the student through body-motor experiences (Edwards et al., 2017; Grauduszus et al., 2023).

In the formative motor assessment process, not only in schools, teachers often adopt models excessively oriented toward normative approaches and quantitative measures, emphasizing motor performance that is more closely related to physical growth or extracurricular sports practice.

To accurately interpret the effects of teaching, it is essential to systematically integrate the descriptive-criterial model with an assessment model focused on the student. This approach facilitates the monitoring of self-referenced progress through qualitative measures (Tolgfors et al., 2018). The latter, in particular, promotes the learning

journey, enables comparisons between the child's skills and knowledge before and during the teaching intervention, and encourages reflection on the process undertaken, the difficulties encountered, and the support received from peers and/or the teacher in executing motor tasks.

In the educational context of physical education, when selecting assessment methods, it is necessary to analyze the relationships between: a) the normative, quantitative-comparative model; b) the criterial, qualitative non-comparative model; and c) the model focused on the student and individual progress (Tolgfors et al., 2018).

The use of data derived from each assessment model is essential due to the intrinsic nature of the human movement, the factors influencing growth and motor development during the developmental age (Malina, 2004; Young et al., 2021), and the directions of the educational process.

The relationship between these assessment approaches reflects the structure of Physical Literacy. It concerns the interactions between the factors underlying motor competence (motor skills, knowledge, attitudes, as expressed in an educational context) and the methods for collecting data useful for teaching. This includes quantitative measures, referring to the use of objective, comparative tests, and qualitative measures, referring to the use of criterial, non-comparative tests. These criterial skills allow the establishment of relationships with underlying and correlated capacities (Giblin et al., 2014; Edwards et al., 2017; Tolgfors et al., 2018).

The methods may include assessment tests oriented toward either the educational process or the product (Gerlach et al., 2017; Edwards et al., 2017; Grauduszus et al., 2023; Nagy et al., 2023).

Norm-referenced or comparative assessment is predominantly used to evaluate conditional motor abilities by directly or indirectly comparing an individual's performance to that of other students (Morrow et al., 2000; Scheuer et al., 2019).

The assessment is considered criterion-referenced or non-comparative when the child's motor skills and knowledge are compared against one or more pre-established criteria collectively defined by teachers (Colella, 2017). These criteria may include the motor skill itself and one or more areas of knowledge deemed significant for achieving a specific educational objective. This approach, oriented toward the process of motor learning (Young et al., 2021; Nagy et al., 2023), adopts an educational perspective focused on motor competence. Verification and assessment are not expressed as comparisons with the performance of others but rather as the subject's intrinsic ability to perform a specific task in a given context under certain conditions.

During the school years, assessment is particularly aimed at identifying the requirements for learning and executing motor skills, analyzing the motor teaching-learning process, examining the teacher’s methodological choices, and exploring the relationships between motor skills and other underlying or related factors involved in motor experiences (Tolgfors et al., 2018).

Physical literacy, in addition to including the development of fundamental motor skills, encompasses the ability to apply these skills in novel situations and the motivation to explore such opportunities. For example, the PLAYself questionnaire is part of the

PLAY (Physical Literacy Assessment for Youth) toolkit developed under Canada's "Sport for Life" initiative (Canadian Sport for Life, 2016). This self-assessment tool allows children and adolescents to examine their perceived physical literacy, understood as a combination of motor competencies, confidence, and motivation necessary for participating in physical activities across various environmental contexts.

The assessment is organized into several sections: environmental context; self-perception of physical literacy level; relative comparison with other forms of literacy (e.g., literary or numerical); and measurement of fitness level. Each response is scored using a rating system that enables monitoring of individual progress and planning targeted interventions for improvement.

Currently, the CAPL-2 (Longmuir et al., 2018) is the only protocol that provides a comprehensive and detailed assessment of what is defined as Physical Literacy. Specifically, the four main domains evaluated by the CAPL-2 include: Motivation and Confidence, understood as the level of self-esteem and intrinsic inclination of children to engage in physical activities; Physical Competence, assessed through standardized protocols measuring motor skills, aerobic endurance, and muscular strength; Knowledge and Understanding, focusing on awareness of the benefits of physical activity and strategies to develop and enhance motor skills; and finally, Daily Behaviors, analyzed through monitoring of daily physical activity levels using pedometers and structured questionnaires.

3. Motor Assessment Tests that Measure Children's Motor Skills and Abilities

Motor abilities are the functional prerequisites that enable children to perform motor abilities (Logan et al., 2018). Basic motor skills (FMS) such as walking, running, jumping, throwing-catching, etc., and the complex skills characterizing various sports – through numerous and diverse execution variations – play a crucial role in daily motor practice and contribute to personal development.

The learning and development of motor skills during childhood are fundamental for motor literacy, sports initiation, and the practice of physical activities across different ages. They also contribute to cognitive-motor, emotional, and social development and their interconnections, facilitated by appropriate teaching methodologies (Bailey, 2006; Herrmann et al., 2019). The acquisition of execution variations for each motor schema – spatial, temporal, quantitative, and qualitative – and their reciprocal relationships constitute the process that fosters skill learning by correlating with perceptual, coordinative, and conditional factors (Gallahue et al., 2012).

Competency-oriented motor assessment includes various complementary factors that every teacher should periodically evaluate:

a) Motor capacities (conditional, coordinative) using motor tests.
b) Basic motor skills (e.g., running, jumping, throwing, catching) and their execution variations (spatial: forward-backward, above-below, long-short, etc.; temporal: fast-slow, before-after, simultaneously; quantitative: little-much, partial-total; qualitative: strong-soft, heavy-light, smooth-rough; tactical: anticipating, marking,

feinting, etc.) using observation; attitudes: through questionnaires and/or systematic observation; knowledge: using objective tests (e.g., questionnaires, rubrics, diaries) to promote students' awareness of their motor repertoire and literacy.

The tests included in motor assessment protocols allow for evaluating the execution of motor skills to gather information on the degree of evolution and development of underlying motor abilities, perceptual-coordinative development, and potential cognitive-motor development deficits. They also provide direct and indirect feedback on the selection of motor tasks, organizational methods, and proposed teaching methodologies (Young et al., 2021; Nagy et al., 2023).

Motor assessment protocols serve a dual educational and evaluative purpose:

a) They enable individual motor assessment by evaluating the quality of a student's performance on one or more motor tasks;
b) They facilitate group-class assessment by analyzing the quality of motor performance across all tasks, assigning partial scores to each test, and processing the results for each test and the set of tests as a whole.

In the first case, the assessment focuses on specific, criterion-based skills. It is used when the teacher needs to understand how a motor task, which is the subject of teaching and learning, is executed (Has the student learned the proposed task? How was it learned?). In the second case, the tests are structured to provide valid and reliable data not only on the level of motor skill acquisition but also, and more importantly, on the coordinative factors underlying each motor task.

Comparing motor performance with predefined criteria and skills set by the teacher has particular educational significance. It fosters the student's awareness of the motor experience and the outcomes of their motor execution. To promote the development of metacognitive processes, the teacher acts as a learning facilitator by designing motor tasks for students that are both hierarchically structured and open-ended or networked.

In recent decades, evidence-based education (EBE) has gained educational significance, particularly in its application to evaluation methodologies. This perspective emphasizes that instructional decisions – such as defining objectives, content, and intervention methods – should be informed by educational research on the effectiveness of various teaching approaches (Vivanet, 2013).

4. Coordinative Motor Assessment Tests: A Literature Review

To enable the development of concrete measures for promoting physical literacy, a shared definition of measurement and evaluation methods is essential.

Assessment protocols include instructions for performing specific skills and typically provide a demonstration by the teacher, a peer, or a brief video before the student attempts the task.

Indeed, the holistic nature of motor competence is precisely what makes adequate evaluation a methodological challenge due to its complexity. Additionally, it is necessary

to consider the developmental stages and learning processes of children. For this reason, priority should be given to developing evaluation procedures that reflect the integration of various factors rather than focusing solely on isolated or disconnected motor tasks.

In other words, assessment tests should allow for a clear identification not only of the student's level of coordinative development but also of the motor repertoire of the child and the class group.

In the literature (Table 1), since no single assessment protocol is considered comprehensive and universally accepted (Scheuer et al., 2019; Šeflová et al., 2022; Nagy et al., 2023), various protocols are identified for evaluating motor skills.

Table 1: Main Tools for Assessing Coordinative Motor Skills in Primary School

Protocol Name	**Abbreviation**	**Source**
Körperkoordinationstest für Kinder	KTK	Kiphard & Schilling (1974, 2007)
Test of Gross Motor Development, Test of Gross Motor Development (terza edizione)	TGMD-3	Ulrich, D. A. (2016)
Bruininks-Oseretsky Test of Motor Proficiency, (seconda edizione)	BOT-2	Bruininks, R. H., & Bruininks, B. D. (2005)
Test zur Erfassung motorischer Basiskompetenzen	MOBAK	Herrmann et al., (2016) Herrmann & Seelig (2018) Herrmann et al. (2020)
Movement Assessment Battery for Children	MABC-2	Henderson, et al., (2007)
Canadian Agility and Movement Skill Assessment	CAMSA	Longmuir et al. (2017)
Motoriktest für Vier- bis Sechsjährige Kinder	MOT 4-6	Zimmer, R., & Volkamer, M. (1987)

After reviewing various studies in the literature (Longmuir et al., 2017; Scheuer et al., 2019; Šeflová et al., 2022; Nagy et al., 2023), we present below a brief description of the protocols summarized in Table 2:

Table 2: The Structure of Assessment Protocols

Protocol	**Items**	**Time**	**Evaluation**	**Age group**
KTK	4	20 minutes	Quantitative	5-14 years
TGMD-3	13 (full version) 7 (short)	17-22 minutes (full version) 10-13 minutes (short)	Qualitative	3-10 years
BOT-2	53 (full version) 14 (short)	45-60 minutes (full version) 15-20 minutes (short)	Quantitative	4-21 years
MOBAK	8	10-12 minutes	Qualitative	MOBAK 1-2: 6-7 years; MOBAK 3-4: 8-9 years; MOBAK 5-6: 10-11 years.
MABC-2	8	20-30 minutes	Quantitative e Qualitative	3-16 years
CAMSA	7	< 10 minutes	Quantitative e	8-12 years

			Qualitative	
MOT 4-6	18	15-25 minutes	Quantitative e Qualitative	4-6 years

The KTK primarily evaluates general motor control and coordination. It consists of four motor tasks or sub-tests: walking backwards (WB), jumping sideways (JS), one-leg hopping (HH), and lateral movement (MS). This assessment tool can be used for both neurotypical children and children with intellectual disabilities.

The original version of this tool was published in 1974, and a third edition has been available since 2017. The KTK is recommended for both clinical and school contexts. It is standardized and is considered to have excellent reliability. The proposed assessment tasks are simple and require only about 20 minutes to complete.

The main disadvantage of this tool is the lack of recent normative data, except for data from the German population. Additionally, this tool does not include an assessment of object manipulation abilities.

The TGMD-3 (Test of Gross Motor Development-3) aims to assess overall motor development, focusing on the identification, planning, and evaluation of changes in fundamental motor skills. The skills assessed are divided into two sub-tests: the first includes six locomotor tasks (jumping, running, galloping), while the second includes seven tasks related to ball control (hitting, throwing, catching). This tool is also used to identify potential motor development delays in children.

One advantage of using the TGMD-3 in schools is its ease of implementation and the accessibility of the required equipment, which is commonly used in physical education classes.

A notable aspect of the TGMD-3 is its inclusion of qualitative evaluation in the final results. However, it is important to note that the TGMD-3 does not incorporate a specific assessment of motor abilities related to balance.

One key limitation of the TGMD-3 is the presence of cross-cultural differences in the ball-related skill tasks, particularly in one-handed hitting, two-handed hitting, and overhand throwing.

The BOT-2 is an assessment tool designed to measure general motor development and motor performance, divided into specific subcategories. It is also intended for use with special population groups, such as individuals with intellectual disabilities, autism spectrum disorders, and attention-deficit/hyperactivity disorder (ADHD).

The BOT-2 offers both a full module and a short form. The short form includes 14 items from all eight subcategories, with tests evaluating fine motor coordination, manual dexterity, strength, balance, and agility.

It is important to note that the normative data for BOT-2 scores are primarily derived from populations in the United States, Canada, and some European countries, such as Germany, Austria, and Switzerland. Although it is primarily recommended for clinical use, the BOT-2 can also be applied in school settings. However, due to its relatively lengthy administration time, it is not recommended for assessing large groups of subjects simultaneously.

While the BOT-2 has the advantage of being one of the most comprehensive protocols for evaluating overall motor development and identifying potential motor deficits, this same characteristic makes it time-intensive. Children undergoing the assessment are required to engage in prolonged intervals. Moreover, proper use of the protocol requires experience to avoid errors during the evaluation process.

The MOBAK is designed for assessing fundamental motor skills in school settings, both in primary and lower secondary education. It can be used to evaluate individuals, groups, or as a screening tool for an entire class of children. Furthermore, it provides useful guidance for adapting lessons based on the results obtained during the evaluation. The various versions of the MOBAK, tailored to different age groups (Table 2), vary in the structure and complexity of individual tests to meet the developmental needs of each age range. However, the protocol's structure remains consistent, assessing skills in two separate categories: four tests for object control and four for body movement.

This assessment tool is easy to administer, requires readily accessible equipment, and includes straightforward evaluation procedures. A translated manual is available in multiple languages across various European countries.

The M-ABC-2 is designed to assess the development of basic motor skills, focusing primarily on identifying motor disabilities, implementing clinical interventions, evaluating the effectiveness of educational interventions, and serving as an assessment tool in various studies and research. It consists of 24 tasks divided into three areas: manual dexterity, aiming and catching, and balance.

One of the main advantages of the M-ABC-2 is its availability in several European countries and its cultural validity. Another benefit is the short time required for its implementation and the ease of data processing, allowing for the simultaneous assessment of a larger number of participants.

However, the primary drawback of the M-ABC-2 lies in its wide age range, which can lead to a loss of reliability in assessments. Additionally, it does not provide a differentiated evaluation based on gender differences, as it does not distinguish between boys and girls. Another disadvantage is the relatively high cost of the complete kit.

The CAMSA evaluates fundamental motor skills and a child's ability to combine both simple and complex movements in response to environmental variables, accurately reflecting the developmental changes observed in these skills.

Time and motor proficiency scores can be accurately assessed by a properly trained teacher. This tool offers an alternative approach for evaluating motor skills, particularly suited for monitoring changes over time or assessing groups of children within a relatively short period.

The selection of motor tasks included in this protocol was based on the skills that children in this age group are expected to develop during physical education classes at school. The protocol requires children to cover a total distance of 20 meters while completing seven motor skill tasks. These tasks include body movement in space and the control of small equipment, sometimes in combination, presented in the form of a course designed to engage and motivate children during execution.

The main advantage of CAMSA is its very short duration, requiring an estimated five to seven minutes for course setup and an average of 17 seconds to complete the course. Additionally, the selection of equipment and space was made considering the resources typically available in physical education classes.

A potential disadvantage might be related to the age range. Unlike other protocols, CAMSA has a very narrow range, targeting children aged 8 to 12 years. This limitation is due to its objective of ensuring greater reliability in evaluating specific skills.

The MOT 4-6 consists of 18 factors divided into four main performance areas: balance, locomotion, object control, and gross and fine motor skills. The assessment protocol primarily focuses on the developmental status of a child's motor skills. During task execution, various aspects are observed, including motor patterns, motor planning, spatial orientation (up, down, right, left, etc.), reactions to tasks of varying difficulty, and the success or failure in performance.

It should be noted that this tool is used for screening purposes, helping to identify potential discrepancies in a child's psychomotor development. However, it does not provide detailed information on specific underlying disorders.

The assessment protocol is designed to be accessible and user-friendly, specifically tailored for children aged four to six years. Its effectiveness is evident in the favorable element-to-assessment time ratio, making it preferable to the M-ABC for this age group.

The MOBAK, KTK, and TGMD-3 test batteries are designed for monitoring motor skills in both curricular and extracurricular contexts. In contrast, the BOT-2, MOT 4-6, and MABC-2 are primarily intended for diagnosing children at risk of Developmental Coordination Disorder (DCD), such as motor coordination disorders or dyspraxia (Šeflová et al., 2022; Nagy et al., 2023).

The CAMSA, on the other hand, stands out from the other protocols, with the exception of the MOBAK, for its exclusive use in schools. It assesses fundamental motor skills not in isolation but in a combined and dynamic manner. It is recommended to evaluate motor tasks in relation to the time taken to complete them, as it is assumed that children with a higher level of motor literacy make appropriate executive decisions regarding speed and skill balance to achieve optimal performance (Longmuir et al., 2017). The protocols presented have both advantages and limitations for their use in curricular school contexts (Table 3).

In Europe, compared to other continents, there is a preference for quantitative approaches. While qualitative and quantitative measures are acknowledged as complementary, quantitative methods generally ensure a high level of reliability over time and consistency when results are compared across different evaluators (Luz et al., 2017).

Performance-oriented assessments are limited as they do not capture individual differences in motor abilities development. Conversely, process-oriented assessments analyze movement quality, providing valuable data on children's motor development and information processing. However, there can be ambiguity regarding reliability due to the influence of teachers' teaching experience and interpretative models during systematic observation and in scoring various tests.

Table 3: Advantages and Limitations of Motor Assessment Protocols

Coordinative Motor Assessment Protocols in Primary School	
Advantages	**Limitations**
Standardized execution of motor tasks based on uniformity of approach with or without equipment.	The motor tasks – each individual test – are not necessarily related to the curricular teaching proposals actually implemented.
Collection of data related to various motor skills and associated motor abilities (through execution variants).	Duration of the implementation of the entire protocol for the class group relative to the number of available curricular hours
Processing data related to the class group and students from the same school for educational documentation purposes.	Small and large equipment are required.
The ability to analyze one or more motor tasks (indicator-test) independently of the total results.	Lack of spaces and facilities in primary schools
Adaptation of each individual motor task for a child with Special Educational Needs.	The scores assigned to each student and the class group require statistical processing of the data for analysis and interpretation.

Finally, environmental constraints play a significant role in influencing data collection and assessment procedures, including the equipment used, as well as the performance of the students being evaluated. Factors such as interactions with the teacher, ambient noise, observation by peers, and similar conditions can all impact the outcomes.

5. Conclusions

Evidence-based educational interventions (EBE) require diverse methodological approaches that emphasize the quality of the teaching process.

There are two distinct approaches to assessing motor skills during children's growth and development. The first approach organizes various motor tasks and interprets scores based on different age groups, with assessment procedures increasing in complexity according to two age ranges (e.g., in the M-ABC protocol).

The second approach, on the other hand, uses the same motor tasks across all ages but adjusts the execution criteria or scoring to reflect the differences in expected performance as age progresses (e.g., TGMD-2/3). In this second approach, we can also include the student-related evaluation model, in which the results of single tests are compared in different periods or at the end of significant teaching-learning experiences.

Monitoring progress in motor literacy development requires the use of a wide range of valid and reliable assessments to track advancements. However, it is important to note that Physical Literacy encompasses more than just physical fitness. It also includes other factors, such as underlying and related knowledge and attitudes (Longmuir et al., 2017; Barnett et al., 2022).

Motor skills, health-related physical fitness, and a child's self-perceived motor competence interact to influence their level of participation in motor activities.

The PLAYself questionnaire represents a structured and reflective approach to fostering in young people a deeper understanding of their physical and motivational

abilities, supporting the development of habits for active and sustainable participation in physical activities (Canadian Sport for Life, 2016).

It is common for younger children (first and second grade of primary school) to engage in physical activities regardless of their motor competence, whereas older children (third, fourth, and fifth grade) who have not mastered fundamental motor skills are less likely to adopt an active lifestyle.

Consequently, teaching and assessing motor competencies is synonymous with promoting motor literacy, provided that the process is supported by appropriate methodological choices that give meaning and educational direction to the efforts.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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