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INTERVENTIONS FOR THE HEALTH PROMOTION AND MOTOR ACTIVITIES IN PRIMARY SCHOOL. THE SBAM PROJECT! HEALTH, WELLNESS, NUTRITION, MOVEMENT AT SCHOOL

INTERVENTI PER LA PROMOZIONE DELLA SALUTE E DELLE ATTIVITÀ MOTORIE NELLA SCUOLA PRIMARIA. IL PROGETTO SBAM! SALUTE, BENESSERE, ALIMENTAZIONE, MOVIMENTO A SCUOLA

Dario Colella
Foggia University of Study
dario.colella@unifg.it

Domenico Monacis
domenico.monacis@unifg.it

Domenica Cinquepalmi
Regione Puglia- Ufficio Sport per Tutti
d.cinquepalmi@regione.puglia.it

Cristina d'Arando
cristina.darando@unifg.it

Abstract

Physical education in primary school has recently received a significant boost through the implementation of multicomponent and inter-institutional projects providing for the increase in the number of curricular hours and the implementation of various integrated measures aimed at development the time of motor commitment, interdisciplinary and transversal educational relationships.
At the same time, these programs envisaged the teachers training and the development of partnerships with sports associations and local administrations. In Italy, regional programs are being carried out in which curricular physical education plays a central role and it's linked to other educational actions, such as education in correct eating habits and active transport/sustainable mobility. The second edition of the three-year regional project SBAM!, established by the Apulia Region, in collaboration with the Regional School Office, the Didactic Laboratory of Motor Activities of the University of Foggia, the Coni - Regional Committee, aimed at primary school children, has ended and the third edition is being planned.
The following contribution presents a review on the multicomponent projects, carried out in various countries and the main cultural and methodological reference framework, which constitutes the integrating background of the Apulian project, focused on Physical Literacy.

Recentemente in numerosi Paesi l'educazione fisica nella scuola primaria ha ricevuto un notevole impulso attraverso l'attuazione di progetti multicomponente ed inter-istituzionali che hanno previsto un aumento del numero di ore curriculari e l'attuazione di diverse misure, integrate, finalizzate allo sviluppo del tempo d'impegno motorio dei bambini e delle relazioni educative interdisciplinari e trasversali.
Tali progetti, contestualmente, hanno previsto un piano di formazione degli insegnanti e lo sviluppo di partenariati con le Associazioni sportive e le Amministrazioni locali.
In Italia sono in corso di svolgimento, interventi regionali in cui l'educazione fisica curriculare ha un ruolo centrale e di raccordo di altre azioni didattiche, quali l'educazione alle corrette abitudini alimentari e al trasporto attivo / mobilità sostenibile.
In Puglia si è conclusa la seconda edizione del progetto regionale triennale SBAM! istituito dalla Regione Puglia, in collaborazione con l'Ufficio scolastico regionale, il Laboratorio di Didattica delle Attività Motorie dell'Università di Foggia, il Coni – Comitato Regionale, il CIP puglia, rivolto ai bambini delle scuole primarie ed è in programmazione la terza edizione.
Nel seguente contributo si presenta il quadro di riferimento culturale e metodologico, che costituisce lo sfondo

integratore del progetto pugliese, con particolare riferimento alla Physical Literacy ed una review sui progetti multicomponente, svolti in varie Nazioni.

Key words
Health Promotion, Physical Education, Physical Literacy, Primary School, Teaching Styles.
Educazione Fisica, Physical Literacy, Promozione della salute, Scuola primaria, Stili d'insegnamento.

1. Physical education and health promotion in primary school.

The school is the ideal setting for health promotion through curricular and extra-curricular activities, disciplinary, interdisciplinary and transversal educational programs, in which physical education links different experiences and learning.

Motor activities, implemented through a wide variety of contents and organizational methods, provided that they are supported by correct teaching methodologies, represent an opportunity for the development of the child's educational process. The projects and interventions that have been carried out over the last few years in every part of the world, despite similarities and differences, share a global approach to the school *setting* and the intermediate and final monitoring of various factors.

Curricular physical education, motor activities and sport in the developmental age (6-18 years), have entered in the national and international institutional policies, according to programs aimed at promoting education in correct eating habits and measures to contrast overweight and obesity, guiding the emergence of new organizational and educational models for schools (Carson & Webstar, 2020). Furthermore, reduced opportunities to practice structured daily motor activities and in free time, reduce the individual motor repertoire and the preventive and positive effects on health status (Faigenbaum, Rebullido, & MacDonald, 2018).

The recent guidelines for the promotion of motor activities aimed at different ages and special populations (Bull et al., 2020), in addition to presenting global epidemiological data and urging State and Regional Governments to prepare intersectoral programs and actions, provide, also, methodological indications aimed at increasing the time of daily physical activity (PA) through the awareness of the benefits induced by PA (Piggin, 2020).

The reproduction of good practices carried out elsewhere to design at local level it is not enough: the measures and interventions in the different contexts require a careful analysis of the scientific evidence and good practices implemented so far, as well as the process results and outcome.

Numerous studies and good practices have shown that in the school it is possible to carry out an effective preventive action if the didactic actions in the class-groups include integrated educational multicomponent and inter-institutional interventions (physical activity, education in correct eating habits, increase in daily physical activity through the active transport, walking groups or other organizational methods).

Health *promotion* in the school setting can be defined as *any activity undertaken to improve and/or protect the health and well-being of the entire school community*.

It is a broader and more complex process of health education traditionally understood, as it includes policies aimed at acquiring behaviours oriented towards the well-being of the student, the development of a school that promotes health through interventions in the physical and social environment of schools, and links with local partners outside the school, in order to help guide correct individual and collective behaviour (IUHPE, 2011).

More precisely, national and international guidelines and recommendations (Bull et al., 2020; Ministero della salute - Direzione generale della prevenzione sanitaria - Ministero dell'Istruzione dell'Università e della Ricerca - Dipartimento per il sistema educativo di istruzione e

di formazione, 2019; Ministero della salute - Direzione generale della prevenzione sanitaria Ufficio 8, 2019), beside focusing the benefits of physical activities on organic, psychological and social development in developmental age, warn that the time is now ripe to anchor the promotion of children's motor activities to multicomponent policies (curricular physical education-education through sport ; urban planning-transport-daily motor activities-education to correct eating habits), which go beyond the "fight" against sedentary lifestyle and paediatric obesity or the pursuit of sports results.

The Document issued by the Ministries of Health and Education, University and Research, called *Integrated "policy" addresses for the School that Promotes Health* (Ministero della salute - Direzione generale della prevenzione sanitaria - Ministero dell'Istruzione dell'Università e della Ricerca - Dipartimento per il sistema educativo di istruzione e di formazione, 2019) reaffirms the central role of health education in schools, a common thread running through the various curricular areas, involving all pupils and their families, teaching, and non-teaching staff.

In this perspective, education for the body and daily motor activities becomes the curricular area of departure and confluence of interdisciplinary and transversal paths, structured according to educational continuity.

2. The actions of the Apulia Region for the promotion of health through motor activities

As part of the actions aimed at promoting health, the Apulia Region, through the Regional Prevention Plan, has identified among its fundamental tasks that of protecting and improving the health of citizens also through transversal policies, focused on the real awareness of the risks deriving from behaviours unhealthy.

The Plan supported the adoption of projects aimed at promoting health, through a transversal approach, by life cycle, by setting, and across sectors with the involvement of the various levels concerned. The Regional Sports Department has a non-marginal role in health promotion as physical activity, at different ages, can be considered a preventive measure in the context of public health policies. The Regional Program "Guidelines for sport" 2013/2015, prepared pursuant to the L.R. n. 33/2006, had identified among the strategic actions of regional importance, the Inter-Councillor educational program for correct lifestyles called *The SBAM Project! - Health, Wellness, Nutrition, Movement at school*. *SBAM!* arises from the analysis of the data collected by the surveillance systems on the eating habits and physical activity of children which have strengthened the belief, at the regional level, of the need to intervene with actions aimed at reducing sedentary lifestyle, favouring the acquisition / consolidation of correct eating habits, carry out health education interventions aimed at children and families through a coordinated working method at the Inter-Councillor level (**Fig. 1**).

The Inter-Councillor Memorandum of Understanding provided for the establishment of:

1. a Control Room composed of the proposing Assessors (or their Delegates) and the Managers of the related Services (or their Delegates) with planning, monitoring and coordination tasks;
2. a Technical-Scientific Committee, whose members have been indicated by the Control Room, with tasks of evaluating the *best practices* already produced at the regional level, for the purpose of enhancing and re-proposing them on a regional scale and of elaborating specific Inter-Councillor aimed at implementing the objectives indicated in the Program.

The Department of Sport coordinated the actions relating to the start-up phase:

- recognition of the activities and projects in progress at the regional level;
- awareness-raising and communication activities on the contents, organizational methods and aims of the project through various communication tools;
- production and dissemination of didactic / informative materials;
- organization of various recreational-sporting and laboratory-educational events.

The same Councillor has promoted the implementation of systematic interventions of motor

and sports activities in primary schools with the co-presence of graduates in Sciences of motor and sports activities, in collaboration with CONI Apulia (identification and recruitment) and with the University of Foggia (teachers and experts training, monitoring and process results).

The project structure has provided for different interinstitutional and academic bodies, to share projects and actions that have been operational until February 2020.

3. The Project SBAM Structure

SBAM! is the multicomponent project promoted by the Apulia Region, in collaboration with the MIUR - Regional School Office, Coni Apulia, the CIP - Italian Paralympic Committee and the University of Foggia.

It provides for the following integrated measures: *Curricular physical education; Education in correct eating habits; Education for active transport and safe home-school journeys*. All the measures refer to each other and systematically in the curricular teaching process.

The project was conceived to propose an institutional-regional response to the increase in sedentary habits of primary school children and related factors (decline in motor abilities, incorrect eating habits, reduced opportunities to practice daily motor activities, etc.) identifying the school as the ideal setting in which promoting interdisciplinary and transversal educational programs and, therefore, not a single disciplinary educational one, but an integration of practical measures that together could contribute to reducing the sedentary habits of children, increasing awareness of the benefits of daily motor activities and the implicit meanings of experiences *with* the body and *through* the body and movement (Table 1).

The third grades of primary school have been identified to start project activities, an age in which the child gradually develops a gradual awareness of school experiences. The project took place in two editions: the first three-year (during the school years 2013-2014, 2014-2015; 2015-2016) and the second annual (2018-2019).

The first three-year edition involved 17,102 children from the third to the fifth class; the second edition involved 10,330 third grade children.

Given the mandatory interruption, after one month of activity due to the COVID-19 pandemic (2019-2020), the project has been scheduled for the 2020-2021 school year.

In previous editions, the activities have developed through different and integrated organizational and operational levels, to promote physical education in primary school, through the interdisciplinary relationships necessary to address emerging problems (sedentary lifestyle, overweight, incorrect eating habits).

The partners of the Apulia Region are the following: the University of Foggia; the ASL; the Coni Apulia; the CIP Apulia, also through the Provincial Committees; the Regional School Office; the Regional Epidemiological Observatory; the Regional Agency for Regional Mobility.

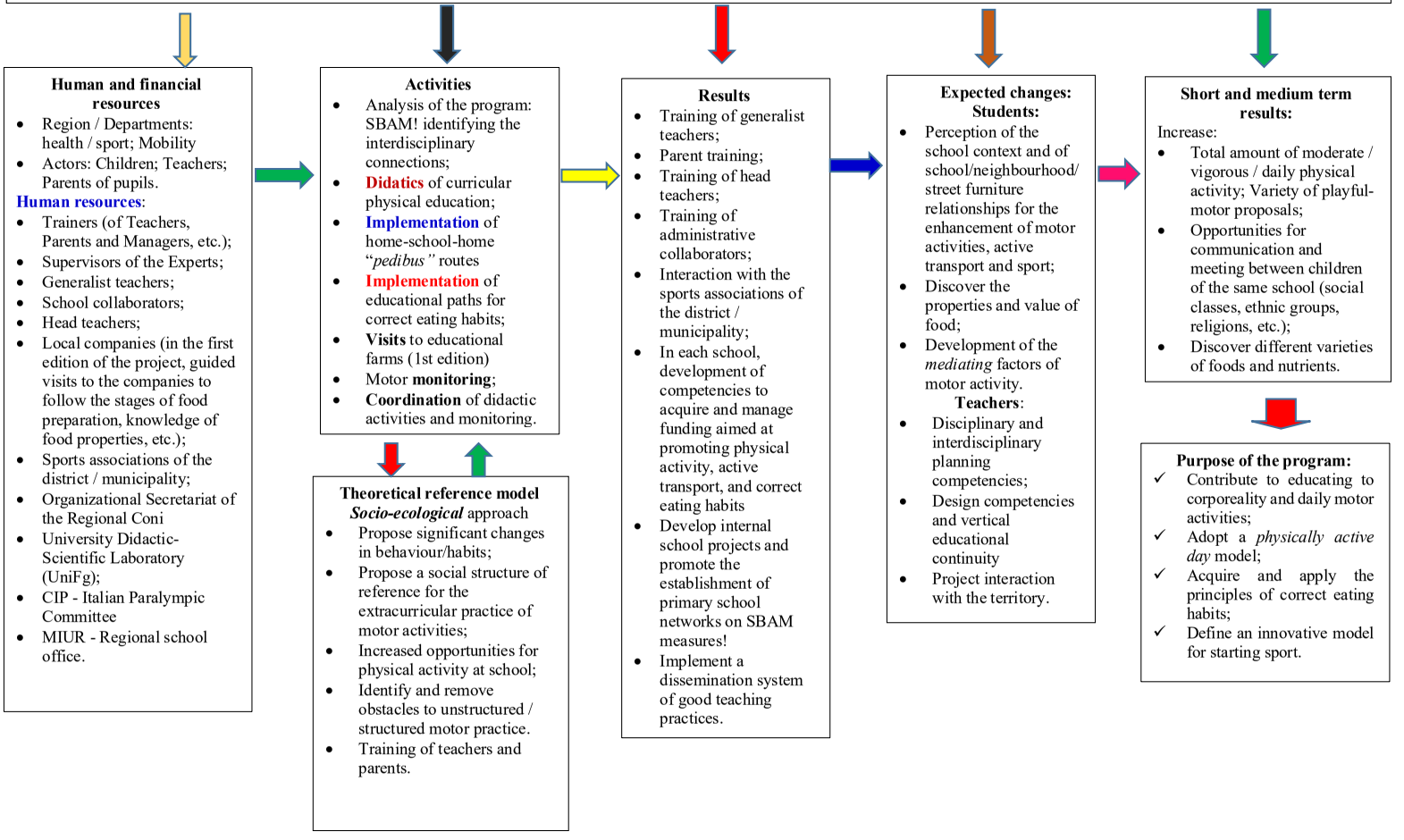
The monitoring of the educational process is an integral part of the didactic planning for competences, an essential psycho-pedagogical and methodological-didactic reference. In this direction, the assessment in physical education *precedes, accompanies, and follows* the curricular paths, carrying out a formative function of pedagogical control of motor learning processes, promoting the continuous improvement of didactic effectiveness, and integrating with that of the other disciplinary areas of the linguistic - expressive - logical-mathematical field.

The data collection, carried out by the University of Foggia, had the purpose of detecting quantitative and qualitative information on motor development and related factors, referring to 8-year-old children of the Apulia Region. The assessment was conducted at the beginning *(t_0)* and at the end of the project *(t_1)*.

The information collected - currently being developed - will help to identify examples of good practices that can be transferred to different educational contexts, considering the variables specific to each curricular area.

Figure.1 - Design of the Regional, Multicomponent and Interinstitutional Project SBAM!

Apulia Region – **University of Foggia / Laboratory of Didactic of Motor Activities** – Coni-Regional Committee - CIP- Paralympic Regional Committee



4. Psycho-pedagogical and methodological framework

The theoretical and organizational models that inspired the design of *SBAM!* concern the socio-ecological approach and self-determination (Raposo et al., 2020), the aims and methodological orientations of Physical Literacy (Martins et al., 2021; Rudd et al., 2020; Cairney et al., 2019a; Cairney et al., 2019b; Edwards et al., 2018); the structure of self-perception (De Meester et al., 2020; Sierra-Díaz et al., 2019; Estevan & Barnett, 2018; Burns, Fu & Podlog, 2017; Robinson et al., 2015).

The development of educational programs is attributable to the following interdependent psycho-pedagogical and methodological factors: physical literacy aimed at promoting health; correlated psychological factors, i.e., self-perception and enjoyment, teaching styles oriented to motor skills learning (Mosston & Ashworth, 2008; Colella, 2019), the interaction between objective methods and self-report for measuring PA, and the final assessment of motor competencies (Edwards et al., 2018).

A short description of each variable is given here below.

Physical Literacy (PL) is a process of acquisition and development of motor competencies, through which children express their repertoire of motor abilities and motor skills, their motivations and personal perceptions of competence, as a way to interact in the socio-cultural context (Martins et al., 2021; O'Sullivan et al., 2020). In the school curriculum, PL is an educational process that enhances motor activity for health promotion and the development of active citizenship throughout acquisition of life skills (Durden-Myers et al., 2018).

In recent years, PL has gained importance in the fields of education, sport, physical activity, leisure, and public health (Rudd et al., 2020; Edwards et al., 2018).

The definitions of PL, however, have been interpreted and implemented in different ways in the various contexts and in the different countries (Shearer et al., 2018).

In this regard, the study by Martins et al. (2021) highlighted the diversity of perspectives (sport, education, and public health) and the related organizational modalities. It emerges that PL is a complex, multidimensional and evolving concept that is defined, interpreted, and translated in many ways around the world and in different sectors (Education, Sport and Public Health, Leisure).

Factors most identified in early studies included motor (fundamental motor skills, motor abilities), psychological (motivation, self-perception), cognitive (e.g., knowledge), behavioural and social factors (interaction with others), interacting with socio-cultural contexts in the *lifelong education* perspective.

Recent research has clearly demonstrated the importance of graduates in Motor Activities and Sports Sciences, for the proposal of quality physical education and for the development of important competencies oriented towards correct lifestyles.

The correlated psychological factors: Self-perception and Enjoyment. The *perception of the physical self or physical self-perception* arises from the children's global perception of him/her-self, which is a hierarchical organization of personal beliefs of the action to be taken, with different levels of concreteness and complexity. These beliefs influence learning and human and social development at different ages a lot (Estevan & Barnett, 2018).

The *self-perception* construct was used in studies according to two meanings: self-efficacy referred to the perceived ability to perform a particular task; self-efficacy referred to the perceived ability to control, prevent or manage the potential difficulties that could arise from the execution of a motor performance (Bardid et al., 2016; Babic et al., 2014).

Self-perception derives from the experience lived in different contexts and from the way in which these experiences are lived by the individual (Kantzas & Venetsanou, 2020; Estevan & Barnett, 2018). Positive motor experiences in which children successfully experience a wide repertoire of activities and executive variants of motor tasks, enrich the individual body *experience*, that is, the experiences concretely carried out through the body and movement.

Physical self-perception is linked to the perception of the body self and to the factors that make up motor competence (Bardid et al., 2016) regarding the ability to mobilize one's cognitive, motor, and social resources to perform a wide repertoire of motor skills, in different contexts and in daily activity (Cairney et al., 2019a; Robinson et al., 2015).

Recent studies (Khodaverdi et al., 2015; Dapp & Roebers, 2019) highlight how self-perception arises from the quality of teaching proposals and is a mediating factor capable of conditioning, accelerating, or inhibiting the relationships between cognitive, motor, emotional and social functions and for the continuation of motor activity.

The self-perception and enjoyment are mediating factors for the learning of motor skills (Lubans et al., 2008). Enjoyment is a positive emotion that promotes the involvement and positive students' academic achievement (Simonton & Garn, 2020). It is a key construct for understanding and explaining the motivation and participation in physical and sport activities (Grasten & Watt, 2017). Enjoyment and intrinsic motivation are closely related: pleasant experiences during motor activity increase intrinsic motivation, develop positive attitudes, and promote awareness of the values of practice in different ages and in different contexts (Robinson et al., 2015).

Although a one-sided approach to physical exercise is mainly oriented towards the prevention of pathologies and dose-response relationships, there is a need to re-consider, in primary school, the *quality* of the didactic proposals and motor responses of children (Ceciliani, 2016) to carry out a didactic program oriented to motor competencies that enhances the interconnections between motor abilities and motor skills, knowledge and attitudes of each student.

Teaching styles and motor competencies. Developing the teaching process, in addition to the choice of activities, the methods of communicating disciplinary content in the gym (or in other environments) are of particular importance to promote different learning methods and direct educational action towards disciplinary and transversal objectives.

An emphasis, sometimes excessive, on the choice of *motor tasks*, organizational methods (games, paths, unstructured recess, circuits, etc.), could lose sight of the ways in which the teacher facilitates the learning of students and encourages motivational factors, intrinsically linked to the cognitive processes that influence motor performance (Colella 2019; Pesce et al. 2018).

It should be noted that it is precisely the choice of teaching styles that elicits different ways of learning and motor responses, with different degrees of awareness, motor commitment and social interaction (Garn & Byra, 2002). In other words, through the teaching styles, in physical education, it is possible to modulate the degree of cognitive, motor, and social involvement of the students, the motor commitment time and the interdisciplinary and transversal interconnections.

The proposal of motor tasks containing executive variants predefined by the teacher, solicits, from the child, sequential and *linear* motor responses (that is, they require strictly correlated-dependent previous acquisitions, requirements for subsequent learning) but with a degree of discovery and problem -individual solving limited and defined by the task.

On the contrary, the proposal of a wide variability of the practice and the solicitation of motor responses and unusual, original, creative executive variants and the reworking of variants and skills already learned, even if in different contexts and situations (Rudd et al., 2020), allows the child to proceed in the learning path in a reticular and autonomous way, not completely linear-sequential, allowing a non-hetero-direct management of space-time-quantitative-qualitative constraints (Moy et al., 2016; Chow, 2013).

The *non-linear* didactic approach can be mediated by the teacher through production styles, to orient the student's learning methods, for *guided discovery, problem solving,* has a strong impact on *self-perception* and *enjoyment*, generating both motor executions functional to the personal repertoire of motor competencies and the prerequisites and interconnections for subsequent learning.

5. Multicomponent and inter-institutional interventions. Review of the literature

Interinstitutional interventions (education, health, sport, leisure) and multicomponent health promotion through motor activities in primary school in different countries, provide for process and outcome monitoring, in order to verify effectiveness and reproducibility, favour the interaction between different Partners, return to schools the data to be used for curricular design. Below, in **Table 1**, is presented a review of multicomponent projects carried out according to the following criteria: a) years 2011-2019; b) context: primary school, c) presentation of the intervention and monitoring; d) multicomponent; e) Geographical area: European and Extra-European countries.

AUTHORS	PROJECT	COUNTRY	SAMPLE	AIMS	INTERVENTIONS	ASSESSMENT	DECLARED RESULTS
Lawlor et al., 2011	*AFLY5*	Bristol City and North Somerset Council, United Kingdom	60 schools; EG=750; CG=750; Age= 8-11 years	Increase physical activity and encourage the consumption of fruit and vegetables in school-age children	Multicomponent project: (a) teachers training; (b) design and implementation of Learning Units; (c) parents training	Accelerometer, self-report.	Assessing effectiveness of the project on public health
Lubans et al., 2012	*SCORES*	New South Wales, Australia	8 schools; n=460; Age=7-10 years	Assess the effects of multicomponent motor literacy intervention in primary schools in low-income communities	Multicomponent project: (a) teachers training; (b) motor activity interventions (c) parents and local sports associations involvement	Accelerometer, TGMD-2, Multistage Fitness Test 20m and psychological related factors	Provide motor practice opportunities for students from low-income social classes, experiment with new strategies for teacher training and orient policies on motor activity.
Donnelly et al., 2013	*A+PAAC*	Kansas, USA	17 schools; EG= 370; CG=317 Age=7-9 years	Assess the impact of motor activity on academic achievement	Practice over 100 minutes of MVPA/week physical activity	Weschler Individual Achievement Test-III, Pacer Test; Accelerometer, Eriksen Flanker test and Spatial n-back task	Propose the A + PAAC program in primary schools to improve both the quality of the teaching process and the children's health
Gilliland et al., 2015	*ACT-i-Pass*	London, Canada	99 schools; n= 3677; Age= 9-11 years	Improve physical activity	Free access to gyms and programs of motor/ sports activities	Self-report: PAQ-C, IPAQ, and interviews	Collection of useful data to plan future interventions for health promotion
Resaland et al., 2015	*ASK*	Sogn e Fjordane, Norwey	57 schools (n=28 ES, n= 29 CS) n= 1145; Age= 10 years	Assess the effects of motor activity on school performance and prevent risk factors for health.	300min of physical activity per week: 90min/week of PE and 45min of motor activity (GS and GC); 165min ASK intervention of motor activity /PE (GS).	Physical fitness test, assessment of executive functions, accelerometer, Eurofit, M-ABC-2; Self-report	Analyze the relationship between physical activity and academic achievement to promote better learning process and improve public health policies
Adab et al., 2015	*WAVES*	West Midlands, United Kingdom	50 schools; n=1000; Age=6-7 years	Assess the effectiveness and cost-effectiveness of a multicomponent program for the obesity prevention in primary schools.	Food education and promotion of motor activity: increase PA in school environment; food education workshops for parents and children	Self-report (PedsQL, Kindscreen-52, Children's Body Image Scale e Child Health Utility 9D); accelerometer	Analyze the long-term results of a school intervention for the prevention of childhood obesity
Lonsdale et al., 2016	*iPLAY*	New South Wales, Australia	20 schools; n= 1600;	Evaluate PA, cardiorespiratory efficiency, motor development associated with cognitive functions and school performance.	Multicomponent project: (a) physical education and sport at school; (b) active breaks; (c) motor tasks to be carried out at home; (d) outdoor activities; (e) partnerships with local educational associations; (f) involvement of parent	Accelerometer, 20 m Multistage fitness test, TGM-D2; AX-Continuous Performance Task, Self-report for psychological factors	Educational and organizational model for the promotion of motor activity in primary school

Wright et al., 2016	*FLEX Study*	Massachusetts, USA	29 schools; n= 4388; Age= 8-10 years;	Assess the impact of two intervention protocols on PA, cognitive functions and school performance	Just Move ™: proposal of short active breaks lasting 5/15 minutes (one per day), integrating MVPA activities; 100 Mile Club®: travel 100 miles during a school year	Accelerometer and physical fitness test	Analyze the effectiveness of protocols to increase levels of physical activity, promote academic achievement and related cognitive function
Cotton et al., 2017	*HAPPY*	New South Wales, Australia	6 primary schools	Increase levels of physical activity and improve the psychological well-being of young people	Multicomponent intervention: (a) environmental modifications and adaptations to promote physical activity; (b) teacher training; (c) peer-to-peer learning strategies to promote social inclusion	Observation of physical activity levels: SOPARC; BOSS and Physical Activity Social Support Scale Survey	Study the correlations between the levels of physical activity, the fun and the behaviors of the students; evaluation of the effectiveness and the sustainability of the projec
Verjans-Janssen et al., 2018	*KEIGAAF*	Eindhoven, Netherlands	11 schools; n = 523; Age = 7-10 years;	Promote the practice of motor activity, active lifestyles and correct eating habits	The Steering Committee develops the general KEIGAAF (top-down) principles and, on the basis of these, the KEIGAAF working groups autonomously implement the intervention in local headquarters (bottom-up).	Self-report, accelerometer, anthropometric assessment, physical fitness test and parents' questionnaire	The combined top-down and bottom-up approach should make effective and sustainable intervention for health promotion in the school context
Taylor et al., 2018	*Skelmersdale (AS:Sk)*	West Lancashire, England	7 schools (n=4 ES, and n=3 CS) n= 232 Age= 9-10 years	Promote the practice of motor activity in the school context	Multicomponent project: (a) active breaks; (b) Daily Mile or 1000 Mile; (c) technology-based interventions; (d) outdoor activities during recess; (e) teacher training; (f) motor activities at home	Accelerometer, anthropometric assessment, 20m multistage shuttle run test; self-report and questionnaires	Assess the effectiveness of interventions on sedentary behaviour and on the variables consider
Sahota et al., 2019	*PunkyFoods Programme*	England	8 schools (ES= 4, CS= 4) n=358 Age= 6-9 years	Promote good eating habits, active lifestyles and daily exercise practice	Multicomponent project: (a) teachers and parents training; (b) Educational courses aimed at promoting motor activity and food education; (c) Increased opportunities to practice motor activity; (d) Support of regional consultants	Questionnaires (Healthy Lifestyle Knowledge Questionnaire; Healthy Food Knowledge Activity Questionnaire), energy expenditure assessment (Synchronised Nutrition and Activity Program), psychological factors (BSPS, DEBQ); anthropometric assessment	Assess the quality and feasibility of multicomponent interventions aimed at reducing risk factors related to childhood obesity

Table 1. Review of Multicomponent project. *EG= experimental group, CG= control group, ES= experimental schools, CS= control schools, PA= physical activity*

5. Towards an Italian model of Physical literacy?

Regional and national projects aimed at improving curricular physical education in primary schools, and the cooperation of external partners for the implementation of complementary measures (active transport, education in correct eating habits), should have the same pedagogical and didactic framework *denominators*, shared, with reference to the cultural and methodological background of physical literacy.

Unfortunately, short-term projects on various topics are not infrequently implemented, which do not provide for intermediate and final monitoring and, also for this reason, do not allow to appreciate the real effects on the curriculum, on children's motor development and on teacher training.

The analysis of the international literature highlights how the last century has proposed a research model based essentially on the *analytical* study of factors related to motor development and learning processes, subsequently generating the need to evolve towards a broader, inclusive model of analysis, and that it appropriately considered the contexts of implementation.

In the motor field, since the early 2000s the interest of researchers has shifted from research on disciplinary contents (motor tasks and related organizational methods) towards the definition of constructs and new psycho-pedagogical and methodological models, to understand the complex network of factors characterizing the learning processes and the educational process of the child.

The term "Physical Literacy" is, at the same time, a multi-year process and motor experience lived by children; it is oriented to integrate motor skills, knowledge, behaviours (meta-cognition) and intrinsic motivation to move (The International Physical Literacy Association, 2014), and, in a more general sense, it promotes the attitude to assume correct lifestyles in different ages (SHAPE, 2015).

This implies the analysis of the interconnections between the learning processes of motor skills, the development of conditional and coordinative abilities and the processes of emotional-affective and social development, valuing individual differences in relation to gender, age, ethnicity, religion, stages development (Edwards et al., 2017). To systematically promote these interconnections, not only the adaptations of motor tasks but also the selection of teaching styles and strategies are crucial.

Recently, in relation to the Physical Literacy process, a theoretical model based on the *dynamic-ecological* approach has been proposed, aimed at enhancing the experiential character of the student-learning-environment relationship, reinforcing, and generating relationships between learning and the context (setting) in which they occur (O'Sullivan et al., 2020).

Several studies identify in the school (context-environment) and, therefore, in the experienced teachers of physical education (mediators), the ideal setting to allow children to become literate in motor field (Farias et al., 2020; Cornish et al. al., 2020), assisting and guiding students during all stages of development up to adolescence, through the personalization of activities and using non-linear didactic strategies (Raposo et al., 2020).

The teacher's behaviour is an essential and unavoidable determinant.

From the perspective of a dynamic-ecological approach, even a modern model of Physical Literacy cannot be detached from another type of literacy, the Digital one. The development and progressive integration of technologies within the curriculum and the school environment make it possible to direct the teaching-learning processes, characterizing and innovating the student-teacher educational relationship (Monacis & Colella, 2019), for example through the *Exergames* (EXG) and Active *Videogames* (AVGs), i.e., videogames based on motor activity (Benzing & Schmidt, 2018). In this way, learning is enriched, mediated, and further enhanced by the use of technologies that do not completely replace traditional teaching, but broaden and add a further emotional and motivational value to stabilize previous learning and generate new ones (enriched teaching). Therefore, physical literacy interventions aimed at the younger segments of the population and which have the characteristics of systematicity, personalization and inclusion, should be structured, coordinated and shared at the institutional level, and then ap-

plied in the individual educational agencies and they operate on the national territory (schools, sports associations, recreational centres, sports training centres, etc.) respecting the following criteria: (a) dynamic-ecological approach; (b) non-linear learnings; (c) innovation and technological mediation; (d) educational continuity, vertical and horizontal.

These assumptions constitute common cultural bases, pedagogical and didactic backgrounds to conceive a real Italian model of physical literacy, in which projects and actions follow the same common thread, albeit with the necessary territorial organizational differences.

Conclusions

The promotion of health in developmental age requires educational contexts in which to implement various actions or measures and physical education in primary school is configured as a central and *connecting* teaching as it involves the person in his or her unit (Klein, & Vogt, 2019).

Recent research reaffirms the unavoidable contribution of motor activities (in different organizational modalities), well supported methodologically in the different implementation contexts, for the prevention of risky behaviours (Hills et al., 2014), the development of motor competencies, learning school (Singh et al, 2019), the acquisition of physical activity patterns in different ages and the understanding of the values related to a physically active lifestyle (Lorås, 2020; Cairney et al., 2019a).

The analysis of the various studies presented here highlighted the need and urgency to design multicomponent interventions for primary school, using different but well-integrated human and professional resources (Errisuriz et al, 2018; Taylor et al., 2018; Tercedor et al., 2017). This involves the analysis of the areas in which play, sport, outdoor education activities, etc. are carried out, the choice of intervention methodologies, i.e., mediation factors, to highlight the preventive and protective effects on non-communicable pathologies (Yuksel et al., 2020), on learning processes and personal growth.

Physical education, therefore, assumes a central role, allowing both the learning of the basic motor skills and their reciprocal relationships, and integration of the main learning of other disciplines (for example mathematics, geography, english, history, science, etc.), structuring strong links between the different curricular area, and generating continuity and significance between learning.

The results of the programs and institutional actions, oriented to health promotion, are visible only in the medium or long term and their evaluation is difficult and complex.

1. To implement the intrinsic purposes of motor activities, measures are urgently needed that proceed in the following directions:
2. training and higher university education of teachers;
3. implementation of an integrated territorial training system, aimed at implementing methodological synergies between different socio-educational partners;
4. dissemination of the results of good teaching practices, aimed at civil society; multi-year and educational continuity projects (preceding-following order of schools).

An inescapable condition is teaching based on evidence, rather than on opinions and habits or on a now widespread and free circulation of short-term projects.

According to *Evidence-based* Practice (EBP or evidence-based practice, in the medical field; EBE - *evidence based education* in the educational sciences) clinical decisions result from the integration between the experience of the Expert and the use of the best scientific evidence available, mediated by the motivations/needs of the student (Vivanet, 2013) and this not only as regards the professional contribution but also the interaction of the methods to be used.

For this purpose, the methodologies of motor activities based on EBP must be an integral part of the university curriculum of Experts in the field of motor activities and sports sciences.

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