

## ***Body Percussion: Active and inclusive teaching oriented to disciplinary knowledge and transversal skills***

Antinea Ambretti\*, Mariapia Mazzella°, Wouter Cools^

### **Abstract**

Body Percussion can be an innovative method to develop various motor and cognitive skills. Can promote inclusion in education without neglecting soft skills. This type of activity favours the inclusion of all, especially disabled pupils who, being able to work as au pairs, can feel part of a group by increasing their self-esteem, with positive effects on group dynamics.

Moreover, the point of view of neuroscience has further strengthened the integration of dualism mind-body according to the unifying perspective of corporeity; in this sense, some research evidence has in fact shown that you learn first and better through the body and movement, as well as through the experience and intentionality that guide the learning itself. The active teaching of Body Percussion is intertwined in a project that focuses on the whole person. The present contribution aims to outline and validate a teaching like Body Percussion, a practical activity that has theoretical foundations in Embodied

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\* Università Telematica Pegaso, e-mail: [antinea.ambretti@unipegaso.it](mailto:antinea.ambretti@unipegaso.it).

° Università di Cassino e del Lazio Meridionale, e-mail: [mariapia.mazzella@unicas.it](mailto:mariapia.mazzella@unicas.it), corresponding author.

^ Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussel, Multidisciplinair Instituut Lerarenopleiding, Brussels Institute for Teacher Education; e-mail: [wouter.cools@vub.be](mailto:wouter.cools@vub.be).

Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, Belgium Research Unit on Movement and Nutrition for Health and Performance, Department of Movement and Sport Sciences, Faculty of Physical Education and Physiotherapy, e-mail: [wouter.cools@vub.be](mailto:wouter.cools@vub.be).

Artevelde University of Applied Sciences, Educational Bachelor of Secondary Education, Hoogpoort 15, 9000 Gent, Belgium, e-mail: [wouter.cools@arteveldehs.be](mailto:wouter.cools@arteveldehs.be).

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Cognition; this can be a creative and effective addition to education, contributing in different ways to the learning of students, which is no longer understood as the organization of organized and pre-existing data but is an active process of building knowledge that is realized both at the individual and intra-individual level.

**Keywords:** body percussion; innovative method; transversal skills, inclusion; embodied cognition; education.

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## 1. Introduction

In today's ever-changing world and in a complex society like ours, advanced and up-to-date skills are required. For this reason, not only disciplinary knowledge, but also transversal skills are of great importance in school teaching today. "Learning is not demonstrated by the accumulation of knowledge, but by the ability to generalize, transfer, and use the knowledge and skills acquired through real-life tasks performed in school, first, and then achievable in real contexts." (Comoglio, 2000). The division and specialization, which characterize the current state of knowledge, generate a sort of "conflict" and sometimes a declared "lack of communication" between the different scientific disciplines. In this context, it is necessary to revise the curricula and reorient the organization of teaching, aiming to overcome the traditional mono-disciplinary approach.

Body Percussion, a practice that involves the body through the production of rhythms and sounds, is fully part of the teaching of the musical discipline, but due to its transdisciplinary nature it can also be introduced into the motor discipline and used in other areas such as linguistics and mathematics.

If, on the one hand, it is essential that the school transmits content, teaches the ability to think, to choose, to decide, it is undoubtedly equally fundamental that the school works on corporeality. Teamwork, such as Body Percussion, is very productive in terms of creativity, cooperation, learning, training and communication and relationships. In the group you learn to listen to the teacher, your classmates and yourself, enhancing your interpersonal and intrapersonal (Gardner, 2012) and emotional (Goleman, 2012) intelligence. Body Percussion can be an innovative method to develop cognitive and motor skills and promote inclusion in education. Its rhythmic and musical dimension is experienced and internalized through the body, stimulating attentional, emotional and concentration aspects useful for the overall learning of the individual.

Numerous studies, also in the Italian context, have underlined the importance of the body and movement in the teaching-learning process (Francesconi & Tarozzi, 2012; Paloma, Ascione & Tafuri, 2016; Ceciliani & Tafuri, 2017; Ceciliani, 2018).

The most recent didactic research guidelines emphasize the role of corporeality in teaching and learning processes, where corporeality is seen as transversal to other subjects of study, such as music. The language of music and expressive artistic languages in general intersect, meet body language, and become a means of expressing and raising awareness of emotions and feelings, managing discomfort and identifying creative solutions to overcome conflictual dynamics and to create inclusion.

Body Percussion can be a creative and effective addition to education, contributing in different ways to students' learning, which is no longer understood as the organization of organized and pre-existing data but is an active process of knowledge construction that is carried out both at the individual and intra-individual level (Sibilio, 2017).

## **2. Body Percussion: a brief history and its potential**

Body Percussion is a technique, of ancient origin, which, using one's own body, allows you to reproduce sounds and rhythms. Its roots date back to prehistoric times. Humans have always used their bodies to produce sounds, such as tapping their feet to mark the rhythm of a dance or clapping their hands to create rhythms for sacred functions. There are records of this technique as early as the fifteenth and sixteenth centuries in Indonesia and Africa, it is said that black slaves deported from West Africa to America, being forbidden to use their drums and any other instrument, accompanied their songs and dances with body sounds. Its diffusion has developed through ancient popular traditions, each with its own specificity, throughout the planet. Therefore, we cannot consider the use of the body as percussion the invention of a particular musical group or someone, but a heritage of humanity, (Michelon, 2011, p. 23).

Over the centuries, Body Percussion has established itself in many cultures around the world as a form of musical expression and communication. However, it is only in recent decades that Body Percussion has gained greater prominence as an art form.

Keith Terry, American percussionist, dancer, and musician has taken his Body Music all over the world. Keith Terry came to Body Percussion playing drums. An accompanist for a group of tap dancers, he was encouraged by them to experiment with new ways of playing and then began to reproduce on his body what he had learned by playing the drums. In 2008 he organized the first

edition of the International Body Music Festival; The next appointment was in Ibiza from 6 to 9 April 2023. Thanks to Keith Terry, the “International Body Music Day” was also established, which is celebrated on the first Sunday of February each year, to “promote this art form and grow the body music community at all levels: local, regional, national and international. Keith Terry’s artistic and didactic activity has paved the way for the development of body music in different areas of application such as, for example, the teaching of mathematics with laboratories and the “Rhythm of Math” manual. In addition, modern musicians such as Bobby McFerrin have shown the potential of body percussion as a suitable solo instrument for creating complex rhythms and sounds. Today, body percussion is taught in schools and music conservatories around the world and is used in various genres of music such as jazz, pop, and folk and rap.

With the advent of social media and online video platforms, Body Percussion has achieved new popularity and continues to evolve as an innovative and creative art form. The different and multiple potentialities in the field of learning are still to be explored as not only an artistic activity to be included in the curriculum of music education, but also a bodily activity to be included in the curricula of physical education and as interdisciplinary, it must be valued for its implications in the development of cognitive skills and for the development of transversal skills.

In this context of thought, there is research on body music, its development, and the opportunities it can offer as an expressive, educational, therapeutic means and, more generally, for the psychophysical well-being of every human being. “An authentic education cannot privilege abstraction, as an instrument of knowledge, over others. It must teach us to contextualize, concretize and globalize. Transdisciplinary education re-evaluates the role of intuition, imagination, sensibility, and the body in the transmission of knowledge” (Freitas et al., 1994). The advantages of using the Body Percussion activity are many: it develops cognitive skills, helps concentration; improves attention; memory; proprioception, control of movements, centring and diaphragmatic breathing, coordination and also develops executive skills, a group of higher cognitive skills involved in the initiation, planning, organization and regulation of behaviours and fundamental, therefore, in the activities of daily living, for school success, at work, for health and quality of life.

This corporal music activity is a way to make music a direct experience for everyone, without distinction of background or social condition, promoting an inclusive approach.

### **3. Body Percussion in the Physical Education curriculum: contribution to motor learning outcomes**

Integrating Body Percussion activities into PE classes not only adds variety and fun to the curriculum, but it can also offer many advantages to young students, improving their overall learning experience and physical and holistic development (Romero Naranjo et al., 2023). Body Percussion classes can offer a range of physical, cognitive, social, and emotional benefits for pupils.

Body Percussion can lead to improved coordination and motor skills as body percussion activities require precise coordination of movements. They help pupils improve their fine motor skills and body awareness. Because these activities involve rhythmic movements that involve different muscle groups, they promote an overall improvement in physical coordination that can improve their ability to control their bodies and perform complex movements with precision. Since Body Percussion activities require precise movements and great coordination, it also improves body awareness in pupils (Hill, 2012).

Related to the development of time perception and rhythmic sense in children, Body Percussion as a movement activity has great potential for children to learn and develop actively. The development of rhythm and coordination resulting from Body Percussion activities, which involve maintaining a constant rhythm and synchronisation, results in an improvement in pupils' sense of musicality and coordination. This can be especially useful for activities that require coordination, such as team sports or dancing (Roden, 2013).

The routine of Body Percussion, using hand clapping, stomping and other movements, can serve as a form of aerobic exercise, promoting cardiovascular health and fitness in students (Leite & Furtado, 2014). Body Percussion can be physically demanding, requiring students to engage various muscle groups and exert energy. Incorporating these activities into physical education classes can contribute to overall fitness, helping students develop strength, endurance, and cardiovascular health. Research has shown that physical education classes play a crucial role in improving cardiorespiratory fitness in children and adolescents (Peralta et al., 2020). By incorporating body percussion activities, students can engage in dynamic movements that elevate the heart rate, helping to improve fitness levels.

Body Percussion also allows for creative expression through movement and sound. It encourages creativity and self-expression among pupils and invites them to explore different ways of using their bodies to create rhythms, sequences, and patterns.

Engaging in body percussion activities can stimulate cognitive functions such as memory, attention, and concentration. Learn and Remembering

rhythms and different patterns can challenge the mind and improve cognitive abilities. According to Lange-Küttner & Küttner (2019), research suggests that rhythmic activities, including those of body percussion, can stimulate cognitive functions such as memory, attention, and problem-solving skills.

For Bugos et al. (2007), rhythmic activities can improve cognitive processing and academic performance.

Many Body Percussion activities involve working in groups or teams to create synchronized rhythms. This fosters teamwork, cooperation, and communication skills as students learn to listen to each other, coordinate their movements, and work toward a common goal. Body Percussion activities often involve group participation, promoting collaboration, fostering teamwork, communication, and social interaction among students (Pike & Standley, 2016). So, working together to create rhythmic patterns encourages peer interaction, socialization, and cooperation.

Engaging in rhythmic activities, such as Body Percussion, can have a calming effect on the mind and body, promoting emotional well-being and reducing stress. It provides an outlet for self-expression and can be a fun and enjoyable way for students to relieve tension and relax. The link between rhythmic activities and stress reduction, as well as emotional regulation, has been widely established. Body Percussion activity has been shown to have a rhythmic nature that can promote relaxation, improve mood, and relieve stress and anxiety (Finn & Fancourt, 2018).

In addition, Body Percussion activities have a positive impact on students' affective responses during physical education classes. In addition, Body Percussion activities can enhance the enjoyment of PE classes for students. Enjoyment of physical education is linked to various factors, including perceived benefits of physical activity and self-efficacy (Barr-Anderson et al., 2008). Body Percussion introduces a fun and interactive element to traditional physical education, which can increase student engagement and enjoyment levels with an impact on improving motivation to class and learn.

“Adventure-based” approaches in physical education have been associated with improvements in students’ self-concept (Gibbons et al., 2018). By integrating body percussion, which involves creativity, coordination, and rhythm, students can experience a sense of accomplishment and self-expression, leading to greater emotional well-being and increased self-esteem and self-efficacy.

Body Percussion activities also have the potential to develop appreciation of various cultural backgrounds and openness to diversity among children. Body Percussion activities often draw from various cultural traditions and musical styles, allowing students to explore and appreciate diversity. The

integration of multicultural elements into physical education lessons promotes cultural awareness and sensitivity.

In addition, Body Percussion activities are inclusive and accessible to pupils of different abilities and fitness levels. Integrating Body Percussion activities into PE classes is a cost-effective and versatile option as it does not require specialized equipment or facilities.

Nonetheless, some limitations of this rhythmic percussive activity must also be considered, in fact many children with autism spectrum disorder may be particularly sensitive to sounds and tactile sensations. Body Percussion, which involves tapping the hands, feet, and other body parts, may be overstimulating or disturbing (Baranek et al., 2006). However, some strategies can be used such as using slower and less intense rhythms, allowing children to participate at a level that is comfortable for them. Gradually increasing the complexity and intensity of the rhythms can help. Music and body rhythm can become a bridge of connection with the outside world for these children. Again, for example, children with intellectual or language disabilities might have difficulty understanding verbal instructions or communicating their needs and preferences during the activity (Downing, 2005) then strategies would involve the use of visual cues, practical demonstrations and visual aids such as cards or videos to facilitate understanding. Offer clear, simple instructions, and check for understanding through questions or nonverbal feedback. Indeed, by combining simple nursery rhymes with body gestures, it is possible to have positive results for improving language.

Therefore, starting from the consideration that in reality, there is not a single means of action or expression that can be optimal for all students (CAST, 2011) and aware of the specific needs of each child, activities can be adapted accordingly. With a sensitive and flexible approach, in this way, Body Percussion can gradually become a powerful tool for the inclusion and development of pupils' motor, cognitive and social skills.

All of this is in line with the goal of promoting holistic development in physical education (Condello et al., 2021) by addressing the physical, cognitive, and emotional aspects of student development. So, it is believed that Body percussion introduced into the PE curriculum can enhance the learning experience, promote creativity and collaboration, improve fitness levels, increase enjoyment, and contribute to students' overall health and emotional well-being.

#### **4. The theoretical basis of Body Percussion: The Embodied Cognition**

In the educational field, the body has always been at the centre of numerous

reflections and experimental studies until the recent birth of a new paradigm, Embodied Cognition, which has shown and emphasized the close relationship between movement, learning enhancement and cognitive functions.

In recent decades, a common ground of confrontation and construction has emerged in the field of education, which has seen the conjugation of apparently contrasting scientific traditions (Sibilio, 2017). A new bio-educational paradigm has developed in didactic research (Frauenfelder et al., 2004), based on the recognition of the relationships between mind, body, environment, artifacts and processes of knowledge (Frauenfeld and Santoianni, 2002; Gay and Hembrooke, 2004; Frauenfelder et al., 2013). This approach represents a post-constructivist line of inquiry (Lesh and Doerr, 2003; Rivoltella, 2013), which explores the connections between organism and environment, as well as between body and cognition, according to the principles of Embodied Cognition (Morin, 1999; Varela et al., 1992; Lakoff and Johnson, 1999; Merleau-Ponty, 1945; Shapiro, 2010; Gomez Paloma, 2017). In this context, the body is recognized as having full dignity in the processes of knowledge, configuring the vision of knowledge as an active process rooted in the body and in the biological dimension of the individual. A new field of research known as didactic corporeity emerges (Sibilio, 2011; Carlomagno et al., 2014), who, through non-verbal expressions in the teaching-learning process, can communicate intentionality, conscious or unconscious, allowing the teacher to face and manage the complexity of the didactic action.

As an active didactic and educational practice of educational action, Body Percussion is a type of activity that can bring positive changes to people, but also to the mentality as it is a processual and dynamic educational process (Mazzella & Ambretti, 2023).

Body Percussion is a musical-motor activity that can be hypothesized to create a link between mind, body, and environment with an impact on learning that is no longer merely traditional or computational but based on the principles of Embodied Cognition.

Embodied Cognition is a growing research program in cognitive science that emphasizes the formative role that the environment plays in the development of cognitive processes. Proponents of embodied cognition (Anderson, 2003) take as their theoretical starting point the idea that cognitive processes are deeply rooted in the body's interactions with the world. Theorists of embodied cognition thus aim to explain the full range of perceptual, cognitive, and motor capacities that we possess as capacities that depend constitutively on aspects of an agent's body.

Thus, human cognition, instead of being centralized, abstract and distinguished into input and output modules, may have deep roots in the



sensorimotor process (Wilson, 2002) and the body may have a pivotal role as a mediator in cognitive processes (Barsalou, 2008; Wilson, 2002).

Embodied Cognition, focusing on the fundamental role of action and perception in shaping cognitive processes, is consistent with the pedagogical approach of learning by doing and provides a scientific basis for defining strategies. Embodied cognition has its roots in the thought of the philosopher Maurice Merleau-Ponty: this author underlines that perception is not a purely mental act but is rooted in the body. Our ability to perceive the world is inseparable from our bodily embodiment. There is no pure mind that perceives the world from the outside; rather, we perceive the world through our bodies. (Merleau-Ponty, 1964). Merleau-Ponty introduces the concept of “body proper”, to indicate that the body is simultaneously subject and object. The body is the subject of experience (in the sense that we perceive through it) and at the same time it is also an object in the world (since it can be perceived and studied). This duality breaks the clear separation between mind and body, defeating Cartesian dualism, reintroduces the body as a skilful subjectivity that aids in the construction of knowledge (Shusterman, 2013). According to this framework, almost all cognitive processes are influenced by physical states, bodily structures (Wilson, 2002), and experiential opportunities.

The affirmation of an Embodied vision of cognition and the recognition of a dynamic dialogue between organism and environment have prompted the construction of new research itineraries, creating the premises for the recognition of the learning, communicative, simulative, and vicarious potential of corporeality in teaching-learning processes (Sibilio and Galdieri, 2022).

Body Percussion is part of this theoretical framework as an activity in which a corporeality in action is implemented, in which the student's body moves in a common space in interaction with the surrounding environment. In this way, it is possible to discover corporeality through physical exercise and musical and rhythmic activity, both in children and in adolescence and adulthood, and this allows to increase the knowledge of oneself and one's learning environment (Palumbo, 2013). “Motor functions are the result of processes of internalization and spatial-temporal structuring, [...] the progressive transformation of corporeality and motor skills follows a line of development that proceeds from a global adaptive dimension to a motor skill understood as an organized system” (Carboni, 2013).

Numerous neuroscience studies support the importance of corporeality in sensorimotor, cognitive, and relational development and as a means of inclusion.

Surveys show that exercise is inherently inclusive and has a positive impact on school performance (Bortolotti and Sorzio, 2014; D’Alonso, 2018). Nelson and Gordon-Larsen (2006) found a correlation between being active during

adolescence and better grades, especially in science subjects. Dwyer et al. (2001) noted a significant link between cognitive and personal success and physical activity among students in Australia. Recent studies have further consolidated this understanding and expanded the perception of the benefits of physical activity on students' cognitive and personal development. For example, a systematic analysis of the relationship between physical activity and cognitive development during early childhood confirmed that increased frequency or duration of activity physical activity leads to significant improvements in various aspects of cognitive development, including executive functions and language (Carson et al., 2015).

The rhythmic-musical dimension that is specific to Body Percussion has also been analyzed in various literature studies which have extensively investigated the cognitive, socio-affective and motor benefits resulting from musical activity. Miendlarzewska and Trost (2014), in a recent meta-analysis, set out to summarize the results of the last twenty years in this area, focusing above all on linguistic and listening skills, on visuo-spatial, logical-mathematical processes and on executive functions. (planning, inhibitory control, supervisory attentional system and working memory). The authors argue that musical training uniquely generates near and far transfer effects, laying the foundation for a variety of skills and thus promoting cognitive development. Studies have highlighted a significant correlation between rhythmic-musical activities and an increase in attention and memory skills. Integrated music training has also been shown to improve children's executive functions (Yue Shen et al., 2019).

## **5. Inclusion and Body Percussion: transdisciplinary language for the development of transversal skills**

The concept of scholastic inclusion entered the Italian pedagogical debate in the 90s. Subsequently, the transition from an approach based on the integration of pupils with disabilities to an inclusive teaching model oriented towards the full educational development of the entire class group takes shape.

The legislative process ranges from Law 118/1971, Law 517/1977 and subsequent Ministerial Circulars to Framework Law 104/1992 and Law 107/2015. Subsequently, there will be Legislative Decree 96/2019 which amends the Implementing Decree Law 107/15 - Legislative Decree 13 April 2017, n.66.

To promote inclusive education and meaningful change in the school context, it is crucial to adopt an engaging and personalized teaching approach, preferably using the body (Gomez Paloma 2015). Corporeality therefore plays the role of “mediator”, as well as a relational fulcrum thanks to which it is

possible to facilitate personal dynamics during the processes of learning cooperation, typical of inclusive teaching (Pastena et al., 2013). The percussionist and musician Keith Terry, with his artistic and didactic activity on body music, has contributed significantly to developing this perspective, facilitating the integration of body music in various areas through highly inclusive workshops.

In this context of thought, there is research on body music, its development, and the opportunities it can offer as an expressive, educational, therapeutic means and, more generally, for the psychophysical well-being of every human being. “An authentic education cannot privilege abstraction, as an instrument of knowledge, over others. It must teach us to contextualize, concretize and globalize. Transdisciplinary education re-evaluates the role of intuition, imagination, sensibility, and the body in the transmission of knowledge” (Freitas et al., 1994).

By recognising the multiplicity and interconnectedness between the various dimensions of reality, trans disciplinary has the ambition to go beyond the boundaries that separate paradigms, rigid institutional norms, and disciplinary labels. “Multidimensionality”, “inclusivity” and “creativity” are the terms that best denote the transdisciplinary approach (Marzocca, 2014)

Trans disciplinary complements disciplinary approaches. It provokes the emergence of new data and new interactions from the encounter between disciplines. It gives us a new vision of nature and reality. Trans disciplinary does not aim at mastering multiple disciplines but aims to open all disciplines to what they share and what lies beyond them. Authentic education cannot value abstraction over other forms of knowledge. It must teach contextual, concrete, and global approaches. Transdisciplinary education re-evaluates the role of intuition, imagination, sensitivity, and the body in the transmission of knowledge (Nicolescu, 2002)

The main contribution of a transdisciplinary approach comes from having highlighted, within a precise theoretical framework, that there are different paths to knowledge, that they are complementary to each other and that there is no hierarchy. Of great relevance, in this regard, is the thought elaborated by Edgar Morin, when he states that to organize knowledge and know the problems of the world, a reform of thought is necessary, and this reform represents a paradigm shift. This is because there is an “ever wider, deeper and more serious inadequacy, on the one hand between our disunited knowledge, divided into watertight compartments, and on the other for situations and problems that are increasingly disciplinary, transversal, multidimensional, transnational, global, planetary” (Morin, 1999).

Today students are asked not only to exercise a set of skills and knowledge related to the different disciplines, but also and above all to integrate them with

knowledge and skills not strictly related to the individual disciplinary areas, testing the effective ability to deal with complex problems by resorting to all their resources, also in terms of attitude, responsibility, and autonomy (Giannoli, 2018).

Body Percussion, integrated into physical education, can promote various transversal skills, including social and civic skills: it requires collaboration, mutual respect and effective communication to create synchronized rhythmic sequences; personal skills: helps develop self-awareness, self-confidence, perseverance and emotional management; motor and coordination skills: improves coordination, rhythm, motor control and body awareness; communication skills: develops non-verbal communication skills, essential for effective communication.

This call is reflected in the key competences for lifelong learning defined in the 2006 Lisbon document, which emphasise the use of knowledge in real-world contexts and promote autonomy and responsibility. The challenge facing the school, therefore, is to innovate the educational action, enhancing the centrality of the student and increasing collaboration with the local context. This is in the overall framework of an increasingly effective and fitting integration between the founding nuclei of teaching and those soft skills considered fundamental for the personal growth of young people. A learning model that connects to the real world with action-oriented activities based on soft skills is becoming increasingly important. European key competences are those that everyone needs for the achievement of personal development, active citizenship, social inclusion and employment and they all have the same priority and must be acquired in formal and informal education environments, primarily in schools. These are:

- communication in the mother tongue;
- communication in foreign languages;
- mathematical competence and basic skills in science and technology;
- digital competence;
- learning how to learn;
- social and civic competences;
- spirit of initiative and entrepreneurship;
- cultural awareness and expression.

To adapt European soft skills to the school environment, it is necessary to simplify and personalise the activities so that they are appropriate for children of all ages, and the Body Percussion activity can convey these skills.

Body Percussion can be used as a tool within educational projects or teaching units to involve a variety of disciplines. Following is presented how it can be integrated into a trans-disciplinary context.

Communication in the mother tongue and in foreign languages: Body Percussion can promote communication between children during activities and promote clear and respectful language; They can introduce key words and simple phrases into foreign languages in a playful way, bringing pupils closer to the different cultures of their classmates.

Mathematical competence and basic skills in science and technology: With Body Percussion, simple mathematical concepts can be used during the activity, such as counting numbers by associating them with bodily gestures. It can allow you to explore the basic principles of movement science and the human body in a playful and practical way.

Digital competence: Body Percussion, thanks to the introduction of simple digital tools, such as videos and online teaching materials, can involve pupils in activities that bring general well-being. This also allows to teach the responsible use of digital devices and promote a balanced approach to technology.

Social and civic learning: Body Percussion is a group activity that requires teamwork, sharing, and empathy towards each other. It promotes mutual respect and understanding of differences through activities that celebrate diversity.

Learning how to learn: Body Percussion allows you to teach children to set goals for personal activities, such as learning small rhythmic cells by improving memory and coordination. It can encourage reflection on their motor skills and breathing during activity and encourage children to identify how they can improve.

Entrepreneurial initiative: can promote personal initiative through simple projects such as organizing a school performance with Body Percussion.

Sensitivity and cultural expression: The teacher can introduce videos from different cultures of Body Percussion, allowing children to experience diversity in a positive way. You can use Body Percussion activities as an opportunity to explore and celebrate cultural traditions related to movement.

In addition, the personalization of these skills for different school levels will ensure that they are accessible, fun, and educational for children and adolescents of all age groups, contributing to their development in an integrated way.

## **6. Conclusion**

The development of motor skills and the regular use of the body are fundamental pillars to ensure healthy physical, mental, and emotional development in young people. These aspects should be considered essential

components that must be integrated from primary school to lower and upper secondary school.

Didactics, as a mode of mediation and interconnection between knowledge, know-how, know-how and know-how to make teachers do (Sibilio, 2002), represented in laboratory form by Body Percussion, is an educational activity aimed at fostering the development of the cognitive, emotional, moral, expressive, relational, and social potential of the individual. Currently, Body Percussion is an activity carried out by music education teachers at various school levels, without any specialisation, but there are also workshops offered to schools by specialized musicians and music therapists, such as Andrea Pedrotti who takes care of Body Percussion projects aimed at teaching and inclusion for schools of all levels and also Body Percussion percussive music workshops organized for children and adolescents by Italian musicians and scholars Ciro Paduano, Riccardo Pinotti, Eliana Danzi, Stefano Baroni and Renzo Canafoglia. The latter author, musician and music therapist has been working with disabilities for years and uses Body Percussion as an Alternative Teaching Methodology in primary and lower secondary schools. We still remember international musicians such as: Fernando Barba (Brazil) musician and pedagogist founder of the Barbatuques group, famous for his work in Body Percussion in Brazil and around the world, Bobby McFerrin (United States) famous singer and improviser, who uses body percussion in his vocal performances, integrating the rhythm of the body into his music. Olivia Froschauer (Austria) music educator and performer, specialized in Body Percussion and music teaching, Cássio Cunha (Brazil), musician and Body Percussion teacher, known for his educational workshops and shows in South America.

Therefore, as we have extensively argued, Body Percussion laboratory activities as an interdisciplinary and transdisciplinary subject play a crucial role in this process and can be fully introduced into physical education curricula.

The study Nemčdek & Wittmannová, (2021) has shown that Body Percussion integrated to the motor could be fundamental in encouraging positive attitudes both towards physical education itself, both in terms of motivation and to stimulate inclusive behaviors. This integrated approach improves motor skills but also increases self-confidence among students, including those with disabilities. School physical education, and in particular the laboratory activities of Body Percussion as an interdisciplinary and transdisciplinary subject, plays a crucial role in this process. In addition to promoting physical health, and all the benefits described above, it promotes the development of soft skills that are critical for success in daily life, the world of work and social integration. This type of training also helps students develop skills such as perseverance, teamwork, discipline, and leadership. This can have

a positive impact on their self-esteem and self-efficacy and emotional well-being.

The bodily rhythm understood, not only in a strictly musical sense, but as a vital pulsation, crosses our lives and connects different knowledge and disciplines. This transversality opens the field of investigation to several disciplines that are concerned with studying its characteristics and possible applications.

Finally, investing more in the dissemination of these rhythmic motor activities by introducing them into the physical education curriculum, not only produces healthier and more active individuals, but can also lead to a more productive and cohesive society, in which young people are able to face physical and mental challenges with confidence and resilience. Therefore, it is crucial that educational institutions and policymakers recognize the importance of these new educational methods and invest in the necessary resources to promote a culture of physical activity associated with music for mental and physical well-being in schools.

In conclusion, Body Percussion in a holistic view of pupil development, not only provides students with a fun and engaging way to explore rhythm and movement, but also a valuable opportunity to develop a wide range of soft skills that are essential to their personal and social success.

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