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Editorial

With great pride, we welcome you to the first issue of the European Psychomotricity Journal, published under the patronage of the European Forum of Psychomotricity (EFP). This journal represents both a milestone and a beginning: a place where research, practice, and dialogue converge to strengthen psychomotricity across Europe and beyond.

It is with deep joy and responsibility that I present to you the first issue of the *European Psychomotricity Journal*, under the patronage of the European Forum of Psychomotricity (EFP). This journal aims to become a reference point for professionals, researchers, and students who dedicate their efforts to advancing psychomotricity in its many forms.

The EFP was founded on the conviction that psychomotricity thrives when we share knowledge across borders, cultures, historic developments and traditions. Over the past decades, we have witnessed an extraordinary development of psychomotricity in education, health, social care, profession and scientific research. Yet, until now, there has been no common European platform that unites these perspectives in a peer-reviewed, accessible, and international publication. This journal seeks to fill that gap.

Our vision is simple but ambitious: to provide a shared space where scientific evidence, professional expertise, reflective practice and the dissemination of national experiences and perspectives can meet. Psychomotricity is a discipline rooted in human movement, but its scope reaches far beyond the body. It touches identity, learning, well-being, and participation. To do justice to this richness, we need dialogue that bridges theory and practice, and that values both innovation and tradition.

This first issue demonstrates the diversity of our field. You will find contributions that explore psychomotor development in childhood, clinical interventions in therapeutic settings, and conceptual discussions that strengthen our theoretical foundations. Together, they reflect the vitality of our community and the relevance of psychomotricity for contemporary challenges in education, health care, and society.

I warmly invite you, the reader, to engage actively with this journal. Read critically, discuss with colleagues, and bring the ideas into your practice and research. The journal will only thrive if it becomes a living platform, shaped by the contributions and voices of the community it serves. We therefore encourage you to consider submitting your own work, whether as research articles, practice reports, or reflective essays.

I wish to express my sincere gratitude to the editorial team, the reviewers, and all contributors who have made this first issue possible. Their commitment reflects the spirit of collaboration that lies at the heart of the EFP. Special thanks also go to the national associations and colleagues who continue to nurture psychomotricity at local, regional, and European levels.

The motto of the European Forum of Psychomotricity is *"Where psychomotricity comes together."* This journal is a concrete embodiment of that ideal. May it serve as a meeting point where knowledge flows, perspectives are exchanged, and the future of psychomotricity is shaped collectively.

On behalf of the European Forum of Psychomotricity, I welcome you to this new chapter in our shared journey.

Pim Hoek

President of the European Forum of Psychomotricity 2022–2025

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Using Psychomotricity for qualitative research: Embodied inspirations from pilot projects with people in situations with language barriers

Martin Vetter*

* University of Education Ludwigsburg

Contact: martin.vetter@ph-ludwigsburg.de

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ABSTRACT

In Psychomotricity, researchers and practitioners provide coping strategies in therapy, education and health that always involve movement and play. When theories and practices of the discipline are used in qualitative research, initial results from pilot studies with pupils are very promising. Current trials with children and young people with language barriers, including so-called movement landscapes in the sports hall and certain forms of human shadow theatre, demonstrate both the practical and research benefits.

Figure 1: *Example from shadow theatre play with students.*

Core of the article: Introducing Psychomotricity as a tool in qualitative research and as a way of expanded understandings

This article aims to explore how movement-based and playful activities, rooted in the field of psychomotricity, can enrich qualitative research. This is in addition to their primary intended effect of supporting people with special needs or those in developmental contexts. The focus here is on considerations, - firstly, whether movement and play events, arranged in the typical tradition of the discipline, can be utilities in research processes to enable or expand access to people. This is about using the knowledge and tools of the discipline: To this end, we are testing how, in research contexts in which language or speech represent a hurdle for people, movement and play scenarios can help to support language or even generate statements and depict latent meaning. The central questions here are therefore:

- When theories and practices from the psychomotor field are taken into account, does the analysis of the data provide additional insights?

- How can psychomotor activities be designed so that the unspeakable becomes visible through movement?
- And: Can research involving exercise and play be designed in such a way that the people who participate also benefit personally?

To find answers to this research questions, in current pilot projects we are focusing in particular on disadvantaged children and young persons. They could presumably benefit from such an approach because they do not (yet) speak the national language well enough for qualitative interviews or because they are handicapped due to (temporary) disabilities in speaking or communicating via language. This article is based on a pilot project with pupils and young people at two locations in the Stuttgart area in Germany. We are still in the deep sea of the pilot project and the data analysis, but we already want to show our current steps and fist results.

The project was inspired both by our own pilot studies and by the work of non-profit organizations such as righttoplay (www.righttoplay.com/en). Sports science and sport have also had notable projects for many years that have inspired us (e.g. Seiberth et al., 2018; West & Griesbeck, 2009), as well as concepts from art and art education (Jörissen et al., 2023). It was also autobiographically inspired by the intrinsic desire to make a contribution in challenging times in which crises and natural disasters are demonstrably increasing or intensifying and refugee migration is increasing. Many people arriving in our countries without speaking our language in the initial phase.

The article is structured as follows: It begins in paragraph 1 with a scoping review on the fact that qualitative research can hardly be accomplished with a few, but important groups in society solely through the channel of language. There are barriers due to limited language skills and limited understanding on both sides regularly, in addition to cultural particularities that must be taken into account. The second paragraph then new perspectives are shown up, which shows representative insights in developments how to overcome these problems in social science itself. The following third paragraph explains the current, important basic features of the subject of Psychomotricity in Germany and its possible contribution to enrich qualitative research. These remarks are important in order to classify the explanations in the fourth paragraph: The aim here is to show examples of how psychomotricity can provide access to people in research contexts on the background of its own theories and practice in general. In the fifth chapter then, I try to clarify the question of how additional meaning in research can be made visible through these approaches. Section 6 briefly presents one of our current pilot projects, to give answers to the above-mentioned research questions. After providing further insights from our research activities in chapter 7, I try to draw a conclusion in section 8, why Psychomotricity tools and practices can enrich qualitative research.

1. A known, existing problem: Limited research access to people with language barriers

What was still valid and sounded logical in 2012, i.e. before large refugee migration movements from African countries, namely that a "unique adequacy requirement" (Garfinkel, 1996, p. 19) , according to which researchers should also acquire comprehensive competence in the field under investigation by learning the language of the interviewees (Kruse, 2015, p. 315; Kruse & Schmieder, 2012; Senft, 2012), is currently hardly feasible due to the diversity of languages and dialects in the course of refugee migration. This requirement formulated at the time may also prevent access to the diversity of people who have made their way to Europe. An attitude of learning 'the' foreign language of humans being involved in research was based on the assumption that, in these contexts, a relatively homogeneous group would be found, at least linguistically. However, this is almost never the case in research contexts that deal with people with a refugee background. And a kind of pre-sorting of the` research subjects´ according to the languages that the researchers speak or understand would be absurd and would not do justice per se to a field approach measured against qualitative standards, e.g. when creating a sample in the sense of saturation sampling (Glaser & Strauss, 1967).

"Can the subaltern speak?": Gayatri Spivak's evocative question and analysis of the speechlessness of the

subaltern in postcoloniality (2008 [1988]) have therefore also left their mark on the field of qualitative research. Qualitative researchers, who often rely on different forms of interviews to illuminate the field and use established techniques and tools, mostly in the tradition of grounded theory methodology (Glaser & Strauss, 1967), have had to deal with the accusation that they have misjudged the effectiveness of typical interview constellations here and there or have not resolved them (J. Berg et al., 2019; Schondelmayer, 2019; Thielen, 2009). For example, the classic interview setting in the research interview often reminded interviewees with a refugee migration background of interrogation situations in their country of origin (Kaygusuz-Schurmann, 2019, pp. 77-78).

Furthermore, in such a setting, the official hearing situation in the asylum procedure in the host country may be unintentionally restaged (J. Berg et al., 2019, p. 289; Holthusen, 2019, p. 303): Studies have shown that interviewers are sometimes read by refugees as part of the established power structures, resulting in meaningless interviews, or even as recipients of special requests for short-term changes to the personal housing or care situation in the initial reception facility for refugees (Fritsche, 2016, p. 172; Kaygusuz-Schurmann, 2019, p. 78; Motzek-Öz, 2019; Schondelmayer, 2019).

In this way, the sources and authors in the field themselves provide significant insights with their often-critical reflections on the research process: On the one hand, they show how important it is to keep in mind the embeddedness of the narratives of those affected as well as the readings, adaptations and abductions of researchers from this data material as a reflective foil that must always be scrutinized. They thus suggest that what is told and recognized should not be attributed to the person or even to cultures, but that the limitations of understanding on the part of the researchers should be acknowledged, questioned or ultimately used to gain knowledge throughout the entire research process from planning until its end.

The reflections also show the limitations when it comes to interviewees or those affected raising individual problems or conditions in the sense of calls for help. For e.g., it is not always clear to refugees in interviews, that it is not a therapeutic or not a counseling-pedagogical setting (for a distinction, see Helfferich, 2011, p. 51; Kruse, 2015, p. 307), but a research-motivated interview situation. The research approach in the sense of asking questions through GTM-guided basic attitudes is therefore often challenged, for example, by limitations imposed by employees of institutions as gatekeepers in the selection of interviewees, by linguistic hurdles in translation (Kruse & Schmieder, 2012; Ucan, 2019), by situations of culturally induced non-understanding (Kruse & Schmieder, 2012), by epistemic and status-related asymmetries (Heritage, 2012; Morek, 2016; Roulston, 2018) by inappropriate interview rooms or settings (Behrensen, 2019; Bethmann, 2020, pp. 55-57), unspoken issues, such as the possibly insufficiently clarified significance of a disability for recruitment as an interviewee by the interviewer (Williams, 2019) and issues of intersectionality (Karačić & Waldschmidt, 2018). Thus, these limitations may also pose methodological and knowledge-generating obstacles to gaining knowledge through qualitative research approaches here and there if these approaches are not adequately reflected upon or perhaps expanded through new suggestions.

2. New perspectives in qualitative research adressing bodility and embodiment

There is convincing evidence that crises and events, including global human crises such as wars, climate change and their consequences, have a physical and embodied impact. The literature on this is obvious (most recently presented in Berry, 2017; Geuter, 2015; Grunwald, 2017; Gugutzer, 2002; Thadden, 2018). This refers to the embodiment or incorporation of life events (Wuttig, 2016, p. 133 ff.). Studies in qualitative social research often deal with precisely these crises and their impact through refugee migration movements. Since the beginning of this century, the body has hardly played a role in qualitative research. Actually, in the last few years, the perspective of embodiment is becoming increasingly important (for an overview, see Arantes & Rieger, 2014). For e.g., Sarah Pink (Pink, 2015) has developed an innovative approach in her work on sensory ethnography, which emphasizes the body

and the senses as central sources for understanding social and cultural practices. From her ethnographic view, Pink argues that research should not be limited to verbal data, such as interviews or text analyses. Instead, she proposes incorporating the multisensory experiences of researchers and participants in order to achieve a deeper understanding of everyday actions and their meaning. By embedding perception—especially seeing, hearing, feeling, and moving—research is expanded in its methodology and the interaction between the body and the environment is placed at the centre.

This approach is particularly relevant for research settings in which language reaches its limits as the primary source of knowledge. She "invites us to think of sensory apprenticeships in a multisensory way as we engage all of our senses and learn through our whole bodies when attending to and embedding ourselves as researchers in the lifeworlds of others" (Leder & Pink, 2022, p. 95).

In her approach, Sarah Pink (2008, 2015, 2022) emphasizes that integrating the body into the collection of research data enables a deeper understanding of social and cultural phenomena. Her focus on multisensory perception and the physical presence of researchers in the field opens up innovative approaches to social realities that cannot be adequately explored through language alone.

Especially when working with children, marginalized groups, or in intercultural contexts, sensory methods can enable researchers to overcome language barriers and generate deeper insights into embodied practices. In addition to Pink's embodied approach and other approaches, which primarily emphasize on the observation and reflection of sensory experiences, the expected, added value of Psychomotricity lies in the conscious design of research settings. Movement and play activities are not only understood as methodological additions, but as fundamental elements that enable the creation of an atmosphere conducive to research. These approaches not only promote the nonverbal expression of participants, but also help to break down barriers between researchers and research subjects.

Further, Psychomotricity provides potential for participatory research approaches, as described by Hella von Unger (2014). Participation is understood not only as a methodological principle, but as a central component of knowledge production, in which participants are actively involved in the research settings and process. This combination of physical interaction, methodological design, and participatory practice so can open up new perspectives on qualitative research and expands the theoretical and practical possibilities for understanding social and cultural phenomena.

3. Psychomotricity: a young subject with skills in using, interpreting and analysing movement in the context of difficult situations

The inclusion of movement and play in qualitative research is not entirely new, although it has often already been worked on with other, more medial focuses (e.g. Azzarito & Kirk, 2013). What they have in common, however, are fundamental considerations of creating or using a non-linguistic approach to gain knowledge, especially with people who (temporarily) find it difficult to find words.

Having the idea in mind, that Psychomotricity can bring in an expertise which primarily deals with movement, perception, play and the human body, the advantage for using the discipline in research contexts with vulnerable groups and individuals becomes a shape: In addition to psychomotor approaches that are based competence-oriented (Schilling, 1990), more functional (Hünnekens & Kiphard, 1960), more sensory-orientated (Doering & Doering, 1990), or more on systemic-constructivist theories (Balgo, 1998, 2004) for the justification and derivation of movement interventions in the field, the so-called "Verstehende Ansatz" (Seewald, 2007) is of particular importance here, best translated as "understanding approach" or "comprehension approach", which views movement as symbolization. It can be used in the sense of an understanding of movement (Seewald, 1992b). This is a very "German" concept in a hermeneutic-phenomenological scientific tradition. The theoretical background is the symbolization ability of the lived body. In contrast to the body as a (measurable) object, the lived

body is understood in the tradition of Edmund Husserl (1912, cited in Danner 2006, 137 ff.) and Helmuth Plessner (2003; Plessner & Heiseler, 1975) as a sensed body that is capable of expression and symbolization. In this article, I neglect the terminology commonly used in the discipline in Germany, which refers to Psychomotricity as the more practical side and Motologie as the more theoretical side (see Vetter, 2021), as it is less significant here.

When it comes to the reception of Psychomotricity in the context of understanding movement situations, these publications by Jürgen Seewald are central in Germany (Seewald, 1992b, 1992c, 1992a, 1997, 2007). Based on the endeavour to formulate an approach which, especially in the context of challenging behavior of children and adults in therapeutic-pedagogical arrangements, comprehensively meets the demand for holism in the design and analysis of movement situations and which also opens up a perspective "as an antithesis to the prevailing empirical-analytical thinking", Seewald dealt with the meaning of motor actions. He sees the roots of this in Merleau-Ponty (1966), who represents a phenomenological approach to perception in such a way that he describes the human being as "condemned to meaning" (Merleau-Ponty, 196, p. 16, cited in Seewald, 1997, p. 5, all translations by the author of this article).

Phenomenological research in general is based on an intensive focus on the immediate phenomena of experience (Danner, 2006). In Germany today, the subject often refers to works by Hermann Schmitz (2011, 2016), Maurice Merleau-Ponty (1966), Gernot Böhme (2019), Robert Gugutzer (2002), Bernhard Waldenfels & Regula Giuliani (2000) and currently also Thomas Fuchs (2013), in order to secure and make comprehensible the subject's current approach to understanding movement. It aims to grasp reality in its appearance by concentrating on what is revealed and excluding prejudices or theoretical preconceptions. This approach is closely based on the philosophy of Edmund Husserl (1912), who formulated phenomenology as “back to the things themselves”. Description plays a central role, the aim is not to provide a causal explanation, but rather to present the phenomena in their diversity as precisely and differentiated as possible.

This description is carried out with an attitude of openness and wonder toward the world. A central principle is epoché, the methodical exclusion of preconceptions. This is not about rejecting or discarding knowledge, but about consciously putting it aside in order to enable an unbiased view of the phenomenon. The aim is to grasp the phenomenon in its own structure and meaning. In addition, subjectivity and inter-subjectivity are central dimensions. While phenomenological research starts from individual consciousness, the social processes are also taken into account—that is, how phenomena are shaped by interaction with other people.

Another principle is phenomenological reduction, in which it is not the objective reality of a phenomenon that is examined, but its meaning as it appears in consciousness. This “reduction” of experiences to their essential structures allows the subjective dimensions of reality to be analysed without falling into pure subjectivity. Phenomenology also emphasizes the intentionality of consciousness, i.e., the fact that all consciousness is always directed toward something. It examines how phenomena acquire meaning through this relationship between subject and object.

The "understanding approach" wants to understand movement as a phenomenon of meaning (Seewald, 1992c, p. 204). "Meaning" is both something experienced and something constructed by the individual, i.e. an "active-passive double process" (Seewald, 1997, p. 9, translation by the author). Through scientific, i.e. methodically reflected understanding, meaning is made transparent and thus becomes significant as a method of psychomotor work. Seewald distinguishes between four levels of understanding: firstly, hermeneutic understanding (= understanding of explicit meaning), deep hermeneutic understanding (= understanding of distorted meaning or apparent nonsense) and (bodily) phenomenological understanding (= understanding of implicit meaning). Above all, however, the fourth dimension, bodily-phenomenological understanding, the bodily-reflective component to a significant extent, in that both participants and group leaders in movement situations reflect on their

bodily impulses, and this is significant here, to use them to gain knowledge.

Psychomotricity thus offers two main things as a possible extension within the framework of qualitative research, namely:

- A special theoretical framework for interpreting the phenomenon that people also show their problems and issues through their bodies and in their physicality: The messages of the body or corporeality can be "read": Human movement and play are also a medium of expression, namely through the body's ability to symbolize (Seewald, 1992b). Meaning can be read out of movement and play; it is a matter of understanding the "meaning" of movement in the hermeneutic, (bodily) phenomenological, depth psychological or dialectical tradition (Seewald, 2007).
- A comprehensive set of practical tools to create situations in which people feel relaxed, want to open up, reflect on themselves or enter into dialog with others. This can be used to facilitate research access to people who are not used to taking part in interviews and opening up. An example of a situation framed in this way in practice is described below.

4. How could psychomotor movement situations facilitate and shape access in qualitative research practice?

A typical example of psychomotor work in practice (carried out in the author's own seminar, based on an example by Wolf 2019, p. 82 ff.), with the Understanding Approach according to Seewald (2007), is suitable for understanding the differences that result from the body-oriented conception of movement occasions, in contrast to usual sports movement. This has to pointed out, because psychomotor units often take place in exercise rooms or sports halls.

Twelve people are taking part in a psychomotor lesson today. The participants know each other briefly from other seminars and from previous movement and play sessions. The lesson begins with a game of tag called "snake stepping", in which the participants pull a gymnastics rope behind them while trying to step on the side of other participants. Everyone has a lot of fun and is out of breath after a few minutes. The group leader now asks half of the participants to sit or lie down on the floor and mark out a feel-good space around them with the exercise ropes. The participants can decide for themselves how big this space should be. The other participants now walk around the room, taking care not to enter the comfort zones. Continuing the game, the group leader now asks the participants who are walking around to provoke the seated or lying participants by occasionally disregarding the designated feel-good space, i.e. by entering it, breaking through it with their hands or even moving it. The participants react very differently to this (...). The roles are swapped again and the game is repeated before everyone meets in a circle to reflect on it. The group leader asks the participants to discuss pleasant and perhaps unpleasant feelings in the game. In addition, he asks the participants to pause for a moment and, if they wish, to express a feeling they feel as unpleasant in a posture or movement. He gives the participants time to feel their own feelings and try out movements. Afterwards, the participants sit together in a circle and the group leader gives them space to find words for their feelings. The participants can also give each other feedback on what the other person's posture triggers in them or what they read from it. Finally, he asks them to freeze the posture they have found in response to a signal. With the consent of the participants, he photographs the participants in their posture so that she can continue working with the photographs in the coming week. (...)

Wolf (2019, p. 82 ff.) shows many other examples of how movement situations in movement spaces can be designed to produce and provoke metaphorical usability, so to speak, in the context of this article. The presumably exploitable also includes the bodility elements, both on the part of the participants and on the part of the researchers. Here are a few examples based on this:

- Keeping your distance, closeness, distance: a wall is built with foam blocks or other materials. This has windows and doors (or not), can be knocked over, built over, rebuilt or used to play hide and seek.

- Social body: Using boxes, benches and large pieces of equipment in a gym, an alley is formed with "street cafés" in which the participants take a seat. They can chat there and behave as they would in a normal street café. Those who wish can walk through the alleyway individually at and take in the scene and the views of the café guests.
- Relationship and contact: Two people hold a gymnastic rope loosely in their hands. The task is to create what should or wants to be created without words.
- Power and powerlessness: movement variations with and without material, in which one partner leads and the other follows (or is led blindfolded).

With movement activities framed in this kind, situations can be created that initially pick people up in a playful, movement-based way in order to open them up to reflection through the situations themselves or afterwards. Ultimately, the relaxed atmosphere, the togetherness in the group, the opportunity to show oneself and express oneself playfully and with movements can then also be used in the progress, for example for subsequent interviews that pick up on things from before, both in terms of the setting and the basic pedagogical-therapeutic approach. This creates newly framed spaces of trust and discourse and also opportunities to use these suggestions to make research more participatory by mitigating the aforementioned asymmetries between researchers and participants.

5. How do psychomotor situations can create additional meaning for research?

In a variation of the above quote, the question is of course not only whether "subalterns" can speak through their bodies and their movements, but also whether this speaking is then also seen and understood (by others), and not only on a level of verbal speaking, but also on an embodied level of understanding. We also want to make direct use of the metaphorical and embodied resonance of movement situations. Movement situations are often metaphorically charged or physically perceptible, even on the part of researchers. Body language and the expression of movement can therefore be easily read by others if they are sensitized to it and practiced in it.

Particularly in contexts of research with people with a refugee background or people with (temporary) language barriers, where the challenge of not speaking the language together or of speaking difficulties and the interview situation influenced by this often arises, and even more so the challenge of analysing the linguistic data material, a psychomotor movement approach can presumably enrich the process of understanding and the search for readings, for example as a supplement in or to interviews.

Derived from this, the current pilot studies in the project team, whose formation was made possible by research funding from the University of Teacher Education Ludwigsburg in Germany (participants within the team in order of chronology of participation in the project: Martin Vetter, Debora Yacoub, Yasmin Habaal, Sinja Trotter and Nina Holz), are more specifically concerned with illuminating movement-based approaches in this sense and further developing them methodologically. In this understanding, movement and play does not only prepare or frame research approaches, but rather produces situations to be reflected bodily upon and analysed: it produces additional data within research.

The scientific background for this is the body phenomenology already mentioned here. In the subject of Psychomotricity itself, this is supported above all again by Jürgen Seewald (1992b, 2013, 2007). He explicitly describes that it is not only about initiating processes in participants, but also about keeping an eye on the physical movements of the group leader themselves in order to gain knowledge. Seewald writes about this:

> “One does not actively search for contexts as in hermeneutic understanding, but rather behaves 'actively' passively. There is a willingness to receive, but what is received is open and can be a surprise. You let things tell you something; so that you can also 'hear' this 'saying', you have to make yourself open and capable of vibrating - like an instrument waiting for a page to be torn". (Seewald, 2007, p. 30, translation by the author).

Seewald always has play and movement situations in mind when he describes pedagogical-therapeutic scenes. Elsewhere, he gives concrete examples of a play situation in an educational-therapeutic context:

> "Let us assume that a child awakens a bodily emotion that we associate with the word 'heaviness' by feeling it. Here we try to determine the nature of the heaviness: Is it a heaviness that crushes and weighs leadenly or rather a heaviness that ensures ground contact and is the opposite of lightness and lift-off. If you can't find any words or images, you can try to express the physical emotion in movement or dance. [...] In any case, the bodily movement is clarified by representing and naming it" (p. 31).

The inclusion of researchers in the interpretation and analysis of statements through movement and play is thus explicitly called for in order to gain knowledge. Although this is already being considered and achieved in qualitative research, it has so far tended to have a cognitive-reflective focus (e.g. at (Bethmann, 2020; Eckert & Cichecki, 2020) and not yet with recourse to body-phenomenological expertise, and certainly not with the concrete expertise of Psychomotricity framed in this way. However, this is precisely where we see good opportunities to expand a qualitative research approach for the target groups described.

6. Insights in a current pilot study: "Move to Express!"

Field visits are currently taking place at a school with a focus on mental development, in residential groups at a youth welfare facility and in a preparatory class. Preparatory classes in schools (Vorbereitungsklasse, short VKL) in the German state of Baden-Württemberg are intended to prepare children and young people with a non-German language of origin for the transition to regular classes through intensive and individual language support. I am only referring to the latter pilot study here. The pilot projects focus on the question of how children feel about arriving in German schools when they are accepted as pupils after arriving in Germany.

What both pilot projects currently underway have in common is that they start in movement rooms or gyms in which the materials and equipment in the rooms are used to create movement landscapes, movement stories or activities in the sense of movement-based self-concept support (Lienert et al., 2010; Vetter, 1998). A permanent installation of a screen for human shadow theatre measuring approx. 4 m wide and 2 m high is also a consistent element of the lessons. For us, the shadow theatre screen combines in an ideal way the possibility of acting experimentally with the body in a protected situation that is nevertheless visible to others. Students from the Master's degree courses in Social Work and Education are also involved. Our research activities are based on the methodology developed for this purpose, which I would like to briefly explain here:

1. Implementing the project: An agreement was reached with a school for an approximately weekly exercise class in the gym for the preparatory class. The preparatory class is predominantly made up of children with a refugee background. The parents of the pupils were informed about this and data protection issues were clarified.
2. Collect data ("All is Data"): Video in the movement lessons, interview protocols, observation protocols with the support of students. Focal points: Participating pupils, students, accompanying teachers.
3. Data backups, initial data preparation: Together with students, tasks are assigned to collect and secure data. This includes video recordings of lessons, observation protocols, self-observations, guided reflections, interview protocols
4. Joint data sessions, develop initial readings: What became visible where: in the institution (here: school), in the group, in individuals (sus. teachers), "periphery", other?
5. Decisions: Which people, topics and data are suitable (with good justification) for further work? Which strands will not be pursued (for the time being)? Focus on sample: teachers, pupils, students?

6. Make method decisions: Which (established) methods are suitable for processing the data?
7. Collect / complete data: e.g., movement-based interviews with pupils
8. Performative installations, "visualizing" the project: What can be exhibited or performed? Who can be a spectator? How can the performative part be used for further data collection?
9. Examination of the possibilities of expanding the research field / sample (e.g., through visitors to the performative installations)
10. Promoting long-term implementation and continuation of the project, securing results, disseminations.

So, for the time being, what are the benefits of a movement-based pilot approach? Our current pilot phase is already revealing interesting points that we would like to explore in greater depth as the project progresses.

a. When theories and practices from the psychomotor field are taken into account, how does the analysis of the data provide additional insights?

As described above, Psychomotricity has a strong affinity with body phenomenological theories. The following situation illustrates how this affinity can be applied in the field of data analysis: in a data session with the project participants, videos from the project's movement lessons at the school were viewed. The main focus of the data session was to identify key points in the video sequences that should be subjected to further, in-depth analysis. Overall, a large amount of video material had been produced, so viewing it was quite a challenge. The team responsible for reviewing the data was faced with the challenge of finding "rich points" (Bock, 2018) in the extensive material. The identification of such rich points is mostly a theoretical work which aims to reduce the huge mass of data. It is the target, to find ground criteria for pulling out important sequences according to the research questions. Initial strategies to accomplish this using standard techniques and heuristics to see first structures in the material, such as those described by Stephanie Bethmann (2020), were a first approach for us then.

Overall, however, the team felt that this theoretical background, which is primarily intended for text-based work, resulted in losses in terms of the depth and breadth of the video material review. The steps of video analysis commonly used in qualitative research (Reichertz & Englert, 2011) also seemed to be insufficiently effective in the project.

Upon further viewing of the videos, one participant in the research team stated that she experienced a so-called “goosebumps moment” in certain situations: there were repeated short sequences in the videos that elicited embodied reactions in her. This topic of embodied reactions to situations in the videos was then given space: other participants also confirmed that there were moments in the recordings in which they were personally and bodily affected in different ways. After a brief discussion, this finding was considered very important for identifying key points in the project: in a current round of video viewing, an attempt will now be made to watch the videos to see whether they trigger an emotional reaction in the researchers watching them, in order to make this reaction useful for the further analysis process: The emotional reaction and the search for a description of it sensu Seewald (2007, see above) is thus used for data reduction in such a way that it serves to determine rich points in the material, which can then be analysed in greater depth.

One such goose bump moment, which all participants in the data session experienced, is briefly described: In a prepared lesson with the VKL in the gym, in which the class teacher sat with the research director on the gym bench at the edge of the hall, the teacher describes him Jamila (all names are changed by the author)., an 11-year-old girl from Syria: Jamila, who has been in the class for four weeks, does in her opinion not open up in any way, neither to other children nor to her as a teacher. She has not spoken a word of German so far, she says. The teacher describes the consideration of initiating a so-called special school admission procedure for Jamila, which would probably mean retraining for Jamila in a special school.

A few minutes later, the following situation happened (and video sequence is created): As part of the seminar, the

students had set up a shadow play screen with the seminar leader during the movement lesson. This installation offered the opportunity to make the shadow of one's own body visible to others without seeing the audience oneself. The screen is installed as one of many stations in the gym to reflect oneself in motion. When Jamila saw the installation, she went behind the shadow screen with the seminar leader without being asked. The seminar leader briefly played circus music to show a few things and movements that can be done behind the screen. The music ended, and Jamila was now alone behind the screen. She looked out briefly from the side to call another girl from the class. “Linda, come! (...) come!” (1"03). She waved her hand to Linda to come to her. Linda came closer, but then turns away and disappears from view. Jamila then began to dance alone behind the screen. Her dance clearly combined oriental movements, similar to Raqs Baladi, with Western elements. Overall, her movements were characterized by hopping, turning, and jumping. The dance lasted a total of 2 minutes. After her performance, she appeared in front of the shadow screen with a broad grin and looked at the now numerous audience members who came to look: students from her class, graduates, the teacher, and the research director. They all seemed to be impressed somehow.

All members of the research team agreed that this was a “rich point" when watching the video some days later: everyone felt emotionally moved. During brainstorming sessions to identify terms that best reflect this emotional response, the following were mentioned: surprise, lightness, feelings of happiness. But, as a contrast, also anxiety: when asked why, one research team member, who herself has family roots in the Middle East, expressed concern that the girl's parents might see this sequence, as she believed it contained elements of sexualized behavior, which are not adequate in this culture.

The inclusion of a psychomotor approach in the sense of the above described methods of the phenomenology of the body shows in this example, that this can open up new possibilities for discovering rich points in qualitative data: Similar to Pink´s approach when analysing material, a psychomotor-phenomenological focus on the body of the researchers, can steer the identification and naming of significant scenes in complementary directions.

b. Can research involving exercise and play be designed in such a way that the people who participate also benefit personally?

Our movement events are designed and offered in such a way that, as described by von Alisch (2019), they can simultaneously function as a research project and as a participatory offer of help in the sense of empowerment. This also enables co-creative research processes in the sense of participatory research (Unger, 2014). Taking up again the fundamental criticism of Spivak (2008) and Kowitz (2022), we would like to improve especially the opportunity for people with language barriers to communicate by allowing them to express themselves through movement in addition to established research methods.

It is worth noting, for example, that our involvement at the school with our movement-based opportunities for the preparation of interviews creates a different framework for our project, in which the school stakeholders see a win-win situation: From their point of view, it is not just researchers who come to ask for time slots to be scheduled for interviews in the school day, but who bring with them a range of movement activities in which children benefit in various ways, according to feedback. The teacher of the preparatory class (VKL) in which we are involved sees the commitment of the researchers as a benefit, as the 90-minute movement lessons give her the freedom to devote herself to the pupils in a different way. She was usually present in the lessons as a spectator and reported to the researchers, sitting with them on a gymnastics bench at the edge of the sports hall, on her perception of the conditions for pupils with a refugee background in the federal state, the conditions of the institution and the possibilities for implementing concepts in this context. There were also opportunities for her to make reference to the pupils, whom she was able to observe during her movement experiments at the same time. It is also interesting to note that, according to her own statement, she experienced some of the children, whom she knew very well from the lessons, completely

differently in the movement lessons. The pupils' preferences also became apparent as they suggested games or even acted out characters and talked about them.

Following the idea of participatory research, there are of course some questions still open: In a parallel project with handicapped children, we used the photographed movement sequences to create a public exhibition in a local church, including a vernissage, for more than six weeks. Visitors had the opportunity to comment on the scenes depicted in the photos on slips of paper provided and place them in an envelope hanging directly below the pictures. We hoped that this design would serve as a kind of community outreach: we wanted people in the local community to participate in the further development of the project. In the school project described here, we are currently still working on good ways to a similar exhibition to invite parents and teachers to develop the project further. The plan is to show the photos and videos of movement sequences to the parents as well. However, this poses the major challenge of cultural encounters: as already mentioned, the children display behaviors and movements in the movement lessons that their parents would probably not approve of. In short, dealing with the publication of photos of girls from Muslim backgrounds playing soccer can be just as problematic as that of boys holding a girl or the woman´s teacher by the hand during the games.

c. How can psychomotor activities be designed so that the unspeakable becomes visible through movement?

We have first experience with of having participants play small pieces behind the shadow screen: they themselves are choreographers, actors and technicians of the performance: they show us their own themes that they have come up with. But here, as an example from our work, we focus on our interviews following the movement lessons. Six interviews had taken place by the time this article was sent. They found the objects from the movement lessons in the interview room, whether it was the shadow theatre screen, balls or other equipment, which seemed to be very confidence-building. During these first low-structured interviews, it was interesting to note that the children did not need any icebreaker situations. The suggestion of first playing a game together and preparing for the interview situation was also gladly taken up.

It was very interesting that the first interviewee, Akram, about 9 years old, refugee migrated in a more than half a year lasing flight with his family via Turkey, Lithuania from Syria to Germany, wanted to play a "bomb explosion game" with us first (we were three researchers in the room: The interviewer, named below as "I", a student and the seminar leader of the main seminar which took place at this school, named as "I2"), for which he explained the rules: one of us has to sit with covered eyes in the middle of the small gym and has to count until 13. The "1" is spoken out loud and marks the beginning of the game, so he explains, then until "12" the person counts in silence. Meanwhile the others have to pass a ball. The "13" has to shouted out loud again. The one who holds the ball at this moment is "exploded" and has lost. He or she then is the next one in the middle who counts.

In the subsequent interview in this room, he often took the opportunity to show the things he could not say, either behind the shadow screen, as a short game or otherwise. Overall, there was a very interesting and relaxed atmosphere in which Akram finally described his family's escape story to Germany. For that he first sat down on the ground beside the shadow screen, ca. 3 meters away from us. While we were talking, he came nearer to us step by step. At the end of the interview, he sat on a gymnastics box at the side of the room in ca. 1,50 distance from us. Akram appears relaxed, his posture is characterized by low muscle tone, and his legs are loose. He laughs a lot during the interview. We get the impression that he is only now able to tell the story of his escape and his wishes at his new home. However, it is certainly a challenge to translate a transcript in German, which is also not (yet) well-spoken in terms of pronunciation, semantics and grammar, into English without losing the meaning that is considered important. Nevertheless, here I give a small impression of a transcript passage about his wishes, nearly at the end of the interview:

Table 1

Transkript passage from the interview with Akram.

Transcript German	Translation
Interviewer (I): Aber sag mal, ihr seid dann aus Litauen hierher-gekommen. Und dann bist du hier in die Schule gekommen? Akram: Ja. I.: Und wie findest du es hier in der Schule? Gehst du gerne hin? Akram: Ja. I: Ja? Okay. Und wenn, wenn du, wenn du jetzt einen Wunsch, wenn du träumen dürftest. Wenn du einen Wunsch frei hättest, was würdest du dir wünschen? Kannst du das sagen? Akram: Hm (...) I: (...) Es ist egal für was. Also für dich oder für deine Familie. Oder für deine. Deine Brüder und Schwestern. Akram: Wir äh vier können schwimmen. I.: Hm? Akram: Wir drei Brüder und Schwester. Wir können schwimmen. Ich will das. Nur das. I: Schwimmen? Akram: Nur mein Bruder (Name) kann bisschen schwimmen. Mein Vater und meine Mutter können auch. I: Okay. Ah, okay. A: Wir vier. Wir vier können schwimmen. D. und ich, und G. Person 3: Aber das wünschst du dir, dass du richtig gut schwimmen kannst? Akram: Ja. Ja. Ich will (unv.), aber ich weiss noch nicht was soll ich werden. Interviewer 2: Wie bitte? Akram: Ich meine, was soll ich werden wenn ich bin groß geworden. I2: Weißt du noch nicht, was du werden möchtest? Du hast noch ein bisschen Zeit. Hast du auch schon eine Idee? (...) Für sie. Du hast was gesehen? Akram (schaut sich im Raum um und steht auf): Das müssen wir machen. Es gibt so einen kleinen Ball zum Trainieren.... (250416 Transcript Akram Pos. 334-353)	I: But tell me, you then came from Latvia here. And then you came in the school here? Akram: Yes I.: And how do you like it here at school? Do you enjoy going there? Akram: Yes. I: Yes? Okay. And if, if you, if you could make a wish, if you could dream. If you had one wish, what would you wish for? Can you say? Akram: Hm (...) I: (...) It doesn't matter what it's for. For you or your family. Or for yours. Your brothers and sisters. Akram: We, uh, four of us can swim. I.: Hm? Akram: We three brothers and sister. We can swim. I want that. Only that. I: Swim? Akram: Only my brother (name) can swim a little. My father and mother can too. I: Okay. Ah, okay. A: The four of us. The four of us can swim. D. and I, and G. Person 3: But you wish you could swim really well? Akram: Yes. Yes. I want to (unv.), but I don't know what I want to be yet. Interviewer 2: Excuse me? Akram: I mean, what should I be when I grow up? I2: You don't know what you want to be yet? You still have a little time. Do you have any ideas? (...) For her. You saw something? Akram (looks around in the room and stands up): We have to do that. There's a little ball for training...

Notes. *Right side: German original. Left side: Translation into English*

His greatest wish, to learn to swim, surprises us a little and makes us aware of our Western influences: we assumed that children his age could already swim. At the end of the interview, however, Akram also expresses his concerns: the eleven-year-old boy is already thinking about what he might want to do for a living. His subsequent reaction shows how much this seems to upset him: immediately after saying this, he gets up to “train” with us using a ball.

The processing of this material (video recordings, transcripts) according to the usual standards of qualitative research is currently being prepared for subsequent publication as part of a (cumulative) dissertation.

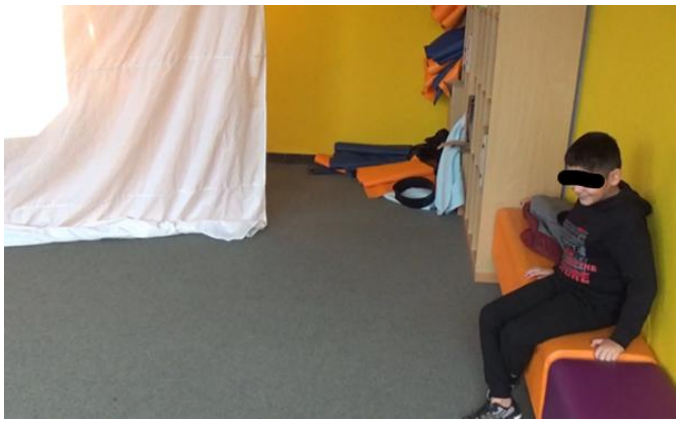

Figure 2: *Akram during the interview situation. On the left side, the shadow theatre screen can be seen.*

7. Research methodological implications and prospects

The psychomotor-based approach described here thus offers new possibilities in various phases of the research process. Last but not least, we are currently working on using established heuristics of analysis, such as metaphor, agency, narrative or positioning analyses (cf. Bethmann, 2020, pp. 80-103), as well as testing our own heuristics, as described, as part of the new approach. For that, Schreier's (2021) remarks on mindfulness-based research are also very helpful: she explicitly focuses on the feelings of the researchers and their significance for decisions in the research process.

Following these initial, exploratory trials, we discussed with the involved university students the possibilities of using these experiences for research. We found it interesting that they were also bubbling over with ideas: In view of the possibilities outlined above and the situation that many of the pupils had speech impairments, practical suggestions were initially made to have drawings made of the game, to continue working with the videos and photos, either with the pupils themselves or their teachers or parents. Initial research questions were also framed in the follow-up: for example, the idea appeared to hang the topic of intersectionality or the "other-race effect" (Taubert et al., 2021) on it: Everyone has the same "skin colour" for spectators of the shadow theatre in front of the shadow screen, regardless of what skin colour the actors actually have behind the screen. Ethnic characteristics and differences in physiognomy also largely disappear. Another suggestion related to the (non-)visibility of physical or mental disabilities behind the screen and subsequent research questions. Initial discussions also focused on reflecting on one's own involvement in these topics. Last but not least, it was possible to address which personal emotions can be identified on the part of the students when they participate in the game.

8. Conclusion: Psychomotor tools and attitudes can enrich qualitative research

As shown in the examples above, movement and play-based psychomotor interventions offer the opportunity to use movement as a means of expression and reflection for qualitative research. This was explained above all using the examples of movement landscapes, human shadow play and subsequent qualitative interviews. We see, in addition, potential for other qualitative pathways, as they are described by Sarah Pink. Even here we see many possibilities: By expressing and tracing feelings, moods or topics without language in movement and play, the understanding attitude in movement offers can be a suitable means of communication, especially with people who are not (yet) able to speak well. This gives them an opportunity to communicate in a different way and to show or exchange themselves through a non-linguistic approach. It also takes a different view of the researchers themselves, in which body-phenomenological elements

can be used in the research process for reflection and to broaden the horizons of understanding.

As already mentioned, it is an offer that can usually take place in exercise, gymnastics or sports rooms as well as outside in nature and is therefore completely different from rooms in which administrative, therapeutic or counselling discussions or previously also research interviews take place. In pilot studies, we were also able to establish that even situations before and after the lesson (in the changing room, when pupils are waiting for the group leader and researcher outside the gymnastics room) certainly have potential, which to our knowledge have never really been perceived as situations in which communication and thus also data can arise (S. Berg & Vetter, 2021).

With all modesty, these examples make it obvious and hopefully comprehensible how and why it makes sense for us to include work from the small discipline of Psychomotricity much more than before in qualitative research in such a way that data can also be obtained from the movement-based arrangements, in various typical steps of the qualitative research process. Conversely, however, the question must be critically asked as to why representatives of the discipline have not themselves made much more use of the possibilities of researching their own discipline using the established methods and techniques of qualitative social research.

The aim of this article was not to position a relatively new profession such as Psychomotricity as the one with solutions to unresolved methodological issues. Rather, it is to be understood as a contribution and proposal from a subject that deals with the challenges described in a completely different way in order to possibly support and enrich established subjects. At the same time, the still young subject of Psychomotricity and its researchers can and would certainly like to benefit from the methodological expertise of other qualitative researchers in the sense of a transdisciplinary exchange!

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Psychomotricity in Italy

Scientific foundations, institutional gaps, and societal perspective towards full recognition

Silvia Cattafesta*, Cinzia Arcari**, Mattia Scapini***

* Sociologist and Psychomotrician, MIP, President of CoNAPP and APPI, and President of the European Forum of Psychomotricity (EFP). Lecturer at CISERPP and AISFI. New University (SLO)
** Psychomotrician, Vice President of CoNAPP and President of FIScOP.
*** Socio-Pedagogical Educator and Psychomotrician, Vice President of CoNAPP and President of ANPRI, Lecturer at IIPR.

Contact: silvia.cattafesta@ciserpp.com

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ABSTRACT

Psychomotricity in Italy exemplifies a discipline in transition, integrating educational, preventive, and therapeutic dimensions while remaining institutionally undefined. This study investigates the scientific underpinnings, professional landscape, and legislative framework of Psychomotricity in Italy. Utilizing national surveys and secondary literature, the authors analyse the professional distribution, training pathways, and sectoral engagement of Italian Psychomotricians. This study employed a mixed-methods approach. A national survey, initially conducted by the authors in 2018 and subsequently expanded in 2024, provided aggregated data on demographics, employment, training, and professional activity. This was complemented by a narrative review of the historical and scientific literature from 1973 to 2024. Descriptive analysis was used to interpret both qualitative and quantitative data, which are presented in the tables. The findings reveal a feminized, regionally skewed profession that is sometimes excluded from public systems of care. Despite its strong theoretical foundations and demonstrable societal relevance, legal ambiguity persists. The authors advocate for unified institutional recognition, aligned with European standards, to safeguard practice and ensure public access.

1. Introduction

At the international level, Psychomotricity is framed as an integrative discipline encompassing physical, emotional, cognitive, and social dimensions, focusing on the unity of the body, mind, and spirit. The European Forum of Psychomotricity (EFP) defines it as a holistic approach in which movement fosters development and relationships, integrating psychology, pedagogy, educational sciences, medicine, and neuroscience to support individuals with motor, cognitive or emotional difficulties (EFP, 2025).

Similarly, the Organisation Internationale de Psychomotricité et de Relaxation (OIPR) defines Psychomotricity as an approach that considers the human being as an indivisible unity, integrating motor, psychic, and social aspects, aiming to support individuals in expressing themselves, adapting to their environment, and achieving personal balance through bodily mediation and relational dynamics (OIPR, 2014).

These international definitions converge on the following essential principles: a holistic vision of human beings, the

central role of bodily mediation, and the discipline's application across health, education, prevention, and rehabilitation domains. They provide a conceptual and professional foundation for national definitions, such as those adopted in Italy, and support the harmonization of training standards and professional recognition across Europe.

In Italy, Psychomotricity has evolved into a scientifically grounded and multidimensional discipline. Since the 1970s, professional associations under the Coordinamento Nazionale delle Associazioni Professionali di Psicomotricisti (CoNAPP)—established by the Associazione Nazionale Psicomotricisti Relazionali Italiani (ANPRI), Associazione Professionale Psicomotricisti Italiani (APPI), and Federazione Italiana Scuole e Operatori della Psicomotricità (FIScOP)—have collectively defined it as a discipline dedicated to promoting health and well-being, aligning with the vision of the World Health Organization (WHO). Its aim is to integrate personal capacities with expressive bodily resources to cultivate a cohesive and functional sense of self, thereby fostering harmonious development through relational dynamics (CoNAPP, 2024).

Although it is extensively practiced in educational, healthcare, and social settings, it lacks full institutional recognition. Italy presents a specific professional landscape in which more psychomotor profiles coexist: "psicomotricista" and neuro- and psycho-motor therapists for childhood (TNPEE). This profession was established in 1997 as a result of institutional dialogue initiated by professional psychomotor associations seeking official recognition of the discipline. However, the outcome was only partially successful; institutions responded by creating a healthcare-specific profession operating exclusively in the field of childhood rehabilitation, as defined by Ministerial Decree No. 56/1997.

This article originates from a broader study that investigates the historical development and current state of Psychomotricity in Italy and illustrates how these aspects contribute to efforts for institutional recognition and a cohesive professional identity. The study explores the following research questions: (1) What historical and institutional factors have influenced the evolution of Psychomotricity in Italy? (2) How is the profession currently organized and distributed across the educational, preventive, and therapeutic sectors? (3) What evidence underscores the necessity of institutional recognition and alignment with European standards?

Achieving this progress necessitates legislative reform and collective professional action. At present, CoNAPP serves as the primary national body striving to achieve this objective. The data and analyses presented here function as evidence-based tools for advocacy, aiming to inform and engage policymakers and stakeholders regarding the discipline's societal significance and institutional requirements.

In this article, the term *Psychomotrician* will be used to refer to professionals active in both educational and clinical contexts across the life span. While "Psychomotor Therapist" is the common English term, the term *Psychomotrician,* introduced by the EFP in 1996, was deliberately adopted to distinguish this role from the TNPEE, a professional profile specific to the Italian healthcare system and not found in other countries. This article documents the historical evolution, current landscape, and future direction of this discipline in Italy. The goal is to present a scientifically robust and socially engaged case for the full institutionalization of Psychomotricity in the Italian context to protect the profession as a guarantee for the end user.

2. Method

This study employs a mixed-methods approach that integrates a literature review with an analysis of original survey data. Each methodological component is tailored to address distinct aspects of the research questions: the narrative review addresses Research Question 1 by reconstructing the historical and epistemological development of Psychomotricity in Italy, while the national surveys address Research Questions 2 and 3, offering empirical evidence on demographics, training, and professional practice pertinent to institutional recognition. The narrative review scrutinized scientific publications, institutional reports, and historical documents produced between 1973 and 2024, with the aim of identifying theoretical, methodological, and professional milestones that have influenced the evolution of the discipline. The

materials were organized chronologically and thematically coded to underscore key paradigmatic shifts and emerging trends in educational, clinical, and social contexts. To augment the analysis with firsthand perspectives, semi-structured interviews were conducted with three senior experts in the Italian Psychomotricity movement. Their testimonies, derived from decades of research, teaching, and advocacy, provide critical insights into the institutional processes shaping the discipline's national development. The interviews were recorded, transcribed, and thematically analysed to ensure methodological rigor and interpretative consistency. National surveys (CoNAPP, 2018, 2024) were conducted by the professional associations ANPRI, APPI, and FIScOP. Their objective was to map the professional landscape of Psychomotricity in Italy and generate quantitative data to support advocacy and policy dialogue. From a methodological standpoint, the survey adopted a cross-sectional study design; however, data collection was executed in two distinct waves, initially in 2018 and subsequently in 2024. The 2024 edition expanded the original dataset, yielding 2,132 valid responses after data cleaning and validation. Participants were required to have completed at least a three-year Psychomotricity program, irrespective of their current professional status, to ensure a representative perspective of the field. Administered via an online platform, the survey offers significant advantages, including rapid dissemination, cost efficiency, and the ability to reach respondents across the entire Italian territory. Data collection was managed through an online platform, facilitating national coverage and the efficient dissemination of the results. However, as with any self-administered voluntary response instrument, potential biases must be considered. Invalid or incomplete submissions were excluded to mitigate self-selection and nonresponse bias. The final dataset, which was aggregated and anonymized, provides a scientifically robust and externally valid foundation for understanding the demographic and professional characteristics of Psychomotricians in Italy. It encompasses key variables on employment, training, professional fields, and association membership, enabling an integrated interpretation of quantitative results with historical evidence derived from the review.

3. Historical framework and development

To better contextualize the objectives of this work, it is useful to understand the main historical developments that have led to the current institutional framework of the profession in Italy. The history of Psychomotricity is characterized by a dynamic interplay between innovation and tradition and between pedagogical and therapeutic orientations. In Italy, the emergence of Psychomotricity was significantly influenced by post-World War II intellectual and clinical exchanges with French pioneers such as Lapierre, Aucouturier, Bergès, and Soubiran. These contributions initially impacted paediatric rehabilitation but quickly extended to educational settings, particularly early childhood and primary schools. During this period, key institutional milestones included the founding of the Associazione Italiana Educazione Psicomotoria (AIEP) in 1974, the establishment of pioneering psychomotor training institutes such as the Centro Studi di Psicomotricità Psicologia e Neuropsichiatria Infantile (CSPPNI) in 1972, the Centro Italiano Studi e Ricerche in Psicologia e Psicomotricità (CISERPP) in 1979, and the Istituto Italiano di Psicologia della Relazione (IIPR) in 1988. Additionally, the World Congress of Psychomotricity was organized in Florence in 1982. These developments were accompanied by increasing theoretical coherence and structured pedagogical models, which contributed to the consolidation of Psychomotricity as an emerging profession (Ambrosini & Wille, 2008; Boscaini, 1987, 2002, 2020, 2023; Boscaini & Russo, 2015; Cattafesta, 2018; Vecchiato, 1998).

Thus, by the 1980s, Psychomotricity had gained substantial traction as an autonomous discipline and was actively seeking institutional recognition. However, a critical and controversial turning point occurred in 1994, when a ministerial decree classified Psychomotricity as a specialization within physiotherapy. This classification was met with significant resistance by the professional community, which firmly advocated for the recognition of the distinct epistemological and methodological framework

of Psychomotricity (Boscaini, 2020, 2023; Boscaini & Russo, 2015; Cattafesta, 2018; CoNAPP, 2022). Subsequently, in 1996, the profession of TNPEE was formally established, leading to the 1997 implementation of Ministerial Decree No. 56/1997. While this decree granted partial institutional recognition, it restricted the professional scope of practice to neurodevelopmental rehabilitation in paediatric contexts, neglecting the broader educational, preventive, and relational domains in which Psychomotricity is applied.

This partial institutionalization contributed to the fragmentation of the profession and created regulatory ambiguities. The absence of a fully recognized legal status has allowed the proliferation of educational and professional models that do not always align with the ethical and technical standards required for competent practice (Boscaini, 2002; CoNAPP, 2024). As a result, Psychomotricity in Italy remains caught between differentiated institutional frameworks and lacks a unified professional identity.

Throughout the 2000s, efforts to secure institutional recognition continued. Although several legislative proposals have been introduced, none have been fully enacted. Nonetheless, the professional identity of Psychomotricians continued to solidify. Key national associations have played an important role in standardizing training pathways and enhancing the visibility of the profession at both national and European levels. The enactment of Law No. 4/2013 and Legislative Decree No. 13/2013 marked an important shift, formally acknowledging the right of Psychomotricians trained in private institutions to exercise their profession, even outside the regulatory system of the health professions.

A further milestone was the establishment of CoNAPP in 2018. As a coalition of leading professional organizations, CoNAPP has coordinated national efforts towards professional recognition, ethical regulation, and training harmonization. Despite these advances, full legal and institutional recognition of Psychomotricity remains an ongoing challenge. Law No. 3/2018 (also known as the “Lorenzin Law”) and the subsequent Ministerial Decree of March 13, 2018, reformed the organizational structure of health professions and confirmed the inclusion of TNPEEs in national professional orders. However, these reforms did not extend recognition to Psychomotricians practicing outside the healthcare domain, leaving the discipline with partial legitimacy.

In addition, the 2025 update of the professional classification codes by the Italian National Institute of Statistics (ISTAT), known as Classificazione delle Attività Economiche (ATECO), introduced a specific code for activities related to Psychomotricity. However, the decision by the revision committee to classify both Psychomotricians and TNPEEs under the same category has further muddled the distinction between these two professional profiles, adding more ambiguity in fiscal and regulatory contexts (ISTAT, 2025).

These developments highlight how the historical trajectory towards the professional recognition of Psychomotricity in Italy has been anything but linear. Two primary factors have contributed to this complexity (CoNAPP, 2022): first, the fragmentation among key stakeholders, including training institutions, professional associations, and practitioners themselves, which has hindered the formation of a unified and coherent voice in institutional dialogue; and second, the semantic ambiguity of the Italian term "salute" (health) (WHO, 1946), which is frequently conflated with "sanità" (healthcare system) (WHO, 2000), thus limiting broader interpretations of well-being beyond the medical domain.

4. Legislative and institutional challenges

A central institutional and professional issue in the Italian context concerns the overlapping yet distinct profiles of Psychomotricians and the TNPEE. The TNPEE is a regulated health profession established by Ministerial Decree No. 56/1997, dedicated to habilitation, rehabilitation, and prevention in childhood (0–18 years), primarily addressing neuropsychiatric, neuro-psychomotor, and psychopathological disorders (Ministerial Decree No. 56/1997). TNPEEs operate within multidisciplinary teams and follow medical prescriptions, using interventions targeted at motor, cognitive, and relational skills. In the context of prevention, their ultimate aim is to promote the social inclusion and school integration of children with disabilities. Training to become a TNPEE involves a three-year university degree within the

Faculty of Medicine and Surgery, culminating in a state licensing examination and registration with the professional board, allowing practice in both public and private sectors.

Unlike the TNPEE, whose work is confined strictly to childhood and is firmly integrated within Italy's healthcare system, the Psychomotrician operates across the lifespan and outside rigidly biomedical or rehabilitative paradigms, focusing instead on the promotion of well-being, personal development, and relational-emotional dynamics.

Although the profession is not yet regulated by a specific law, its legal framework is defined by Law No. 4/2013 and Law No. 13/2013. Law 4/2013 governs professions not organized within professional orders in Italy, formally recognizing private qualifications and enabling professional associations to establish quality standards, ethical codes, and criteria for continuing education. This law serves as the primary legislative reference for professions such as Psychomotricity, which are widely practiced but not yet formally recognized within the national healthcare or education systems. Law 13/2013, on the other hand, established the national system for the certification of competencies acquired in formal, non-formal, and informal learning contexts. It promotes lifelong learning and enables the validation and recognition of skills developed outside traditional academic pathways, such as those gained through professional schools or experiential practice, thereby providing an institutional basis for integrating professionals, such as Psychomotricians, into national qualification frameworks. In terms of education, Psychomotricians in Italy are trained through specialized three-year programs that comply with the European Qualification Framework (EQF), Level 6, EU Directive 89/48/EEC. These programs require a minimum of 2,400 hours and encompass theoretical instruction, practical experience, and personal development training. The core subjects include neurodevelopmental sciences, embodied pedagogy, psychomotor diagnostics, and intersubjective techniques. Lifelong learning is promoted by professional associations and continuing education networks.

This fundamental divergence in scope, legal status, and operational contexts contributes significantly to the professional ambiguity characterizing Psychomotricity in Italy. Clarifying the respective domains and boundaries of these two professions is important to avoid overlap, ensure quality standards, and protect service users. TNPEE, as health professionals, adhere to the bio-psycho-social model of disability proposed by the WHO and use the International Classification of Functioning, Disability and Health – Children and Youth Version (ICF-CY) as a framework for planning interventions (WHO, 2007). Meanwhile, the broader application of Psychomotricians in educational and socio-relational contexts underscores their role as professionals who transcend strictly medical objectives. Therefore, resolving the current regulatory gap demands not only legal recognition of Psychomotricity but also delineation of clear professional boundaries vis-à-vis the TNPEE, ensuring coherence within the national system of health, education, and social services (Cattafesta, 2018).

Multiple legislative efforts (e.g., AC 2360 in 2002) have attempted to formally recognize the profession of Psychomotrician. However, these have consistently failed to result in legally binding legislation. The 2013 and 2018 reforms (See Law 4/2013, Law 13/2013, Law 3/2018) recognized private qualifications and expanded healthcare registries but did not resolve the ambiguous legal status of the profession. In 2025, the ongoing commitment of professional psychomotor associations led to the assignment of the ATECO code 86.99.03 (ISTAT, 2025) to the profession, fully integrating the "Psicomotricista" into the Italian professional landscape for the first time. However, confusion remains, as the TNPEE was also given the same code, preventing end-users from fully understanding the difference between the two professions.

5. Evidence-based overview from national surveys

Expert working groups from professional associations (See CoNAPP) have continued to engage institutional stakeholders in advancing a comprehensive regulatory framework that respects the full complexity and autonomy of Psychomotricity. To this end, recent national surveys (2018, 2024) involving over 2,500 Psychomotricians were conducted to highlight key professional characteristics relevant to the recognition process:

- *Demographic Profile*. The data confirm that the profession is highly feminized (88%) and primarily concentrated in Northern Italy (87%), reflecting broader gender trends in education and healthcare professions.
- *Professional Experience and Distribution*. Approximately 69% of Psychomotricians had more than ten years of professional experience, indicating a mature and stable workforce.
- *Fields of Practice*. Psychomotricians predominantly work in educational (88.4%) and preventive (61.7%) settings; however, they are also increasingly involved in mental health and geriatric care. This broad distribution underscores the relevance of the profession throughout the life course.
- *Employment and Economic Aspects*. Data on weekly working hours and income levels reveal strong professional commitment despite moderate earnings and part-time arrangements, highlighting the need for public-sector integration.

Specifically, it becomes evident that Psychomotricians work with individuals of all ages to address motor, relational, and emotional challenges, as illustrated in Figure 1.

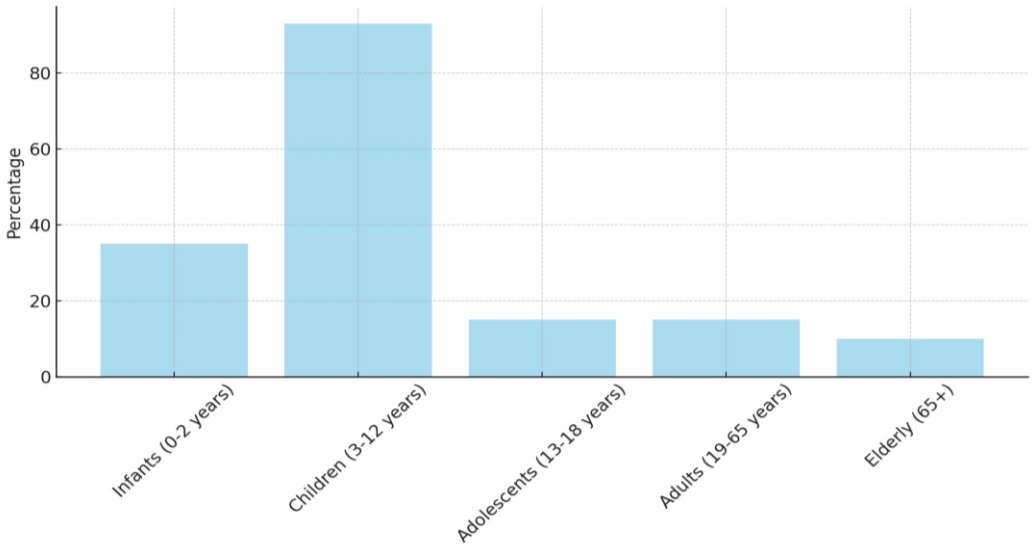

Figure 1. *Service demand by user age group*[1]

Most professionals operate in educational (88.4%) and preventive (61.7%) settings, reflecting their strong commitment to fostering harmonious development and prevention. However, a significant presence also emerged in the fields of health and well-being (36.7%), demonstrating that Psychomotricity serves as an essential tool not only for children but also for adults and the elderly. Specifically, 15% of professionals work in psychiatric contexts, indicating substantial involvement in treating emotional and personality disorders. Additionally, 12% focused on learning disorders and 10.5% on behavioural issues, highlighting the effectiveness of Psychomotricity in supporting individuals with complex needs. Although children between the ages of 3 and 12 years represented the most involved age group (93.4%), the other categories were not overlooked. Interventions targeting early childhood, including infants (34.9%) and adolescents (15.1%), play a crucial role in early prevention and management of developmental transitions. Adults (14.4%) and older adults (9.3%) also benefit from the psychomotor approach, which supports the maintenance of cognitive, physical, and relational abilities, with a specific focus on quality of life and psychosocial support. This data is useful to highlight how Psychomotricians effectively respond to a broader territorial demand than

that currently addressed by the officially recognized professional profile.

The demographic and professional data presented in the following charts provide a detailed portrait of the Psychomotricity profession in Italy and offer important context for understanding its current structure and challenges.

Table 1 confirms a significant gender imbalance: 88% of practicing Psychomotricians are women, reinforcing the highly feminized nature of the field. According to national labour statistics, women represent the overwhelming majority of workers in the education and health-related sectors, with participation rates exceeding 70% in certain domains (ISTAT, 2020). This trend is echoed within the field of Psychomotricity, confirming the affinity of the discipline with roles focused on prevention and personal care, traditionally performed by women. At the institutional level, policymakers' interest may be linked to initiatives and policies concerning gender equality. Figure 2 shows that over half of the professionals (approximately 53%) are between 46 and 60 years of age, indicating a mature workforce with consolidated expertise. This level of professional experience should be formally acknowledged and regulated for the benefit of end users and the quality of care, which must be entrusted to qualified and competent professionals rather than untrained practitioners.

Table 1

Gender distribution of Italian Psychomotricians (N = 2,500)

Gender	Frequency	Percentage
Female	2,200	88%
Male	300	12%

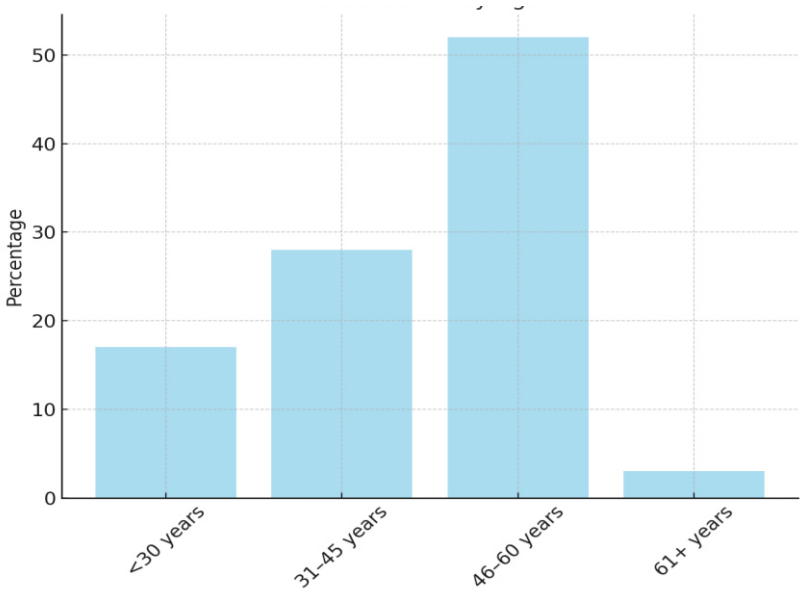

Figure 2. *Age distribution*[1]

Figure 3 highlights that nearly 69% of Psychomotricians have more than ten years of professional experience, which not only reflects long-term stability but also counters the idea that the emergence of the TNPEE profile in 1997 has replaced the broader psychomotor profession. Rather, it demonstrates the continued presence and development of Psychomotricians as a distinct professional identity. This evidence may indicate to institutional bodies that the reorganization of healthcare activities in Italy remains incomplete and requires further reviews.

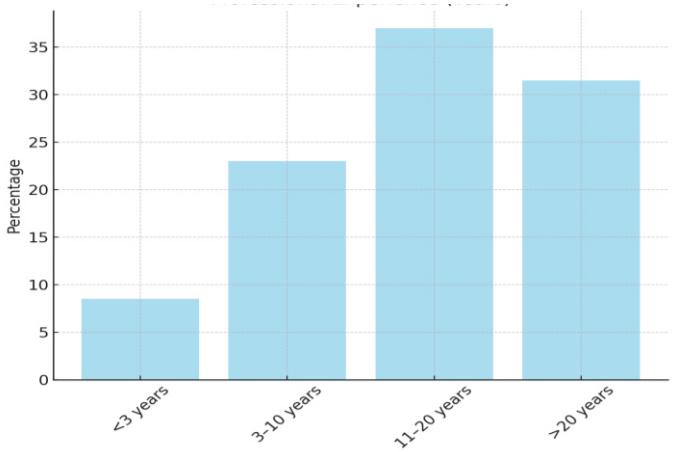

Figure 3. *Years of professional experience* [1]

The geographical data in Figure 4 reveal that 87% of professionals operate in northern Italy, underscoring regional disparities likely driven by unequal access to training opportunities and greater economic resources in northern areas. This highlights the importance of institutional recognition in ensuring equitable service provision and professional access across the national territory.

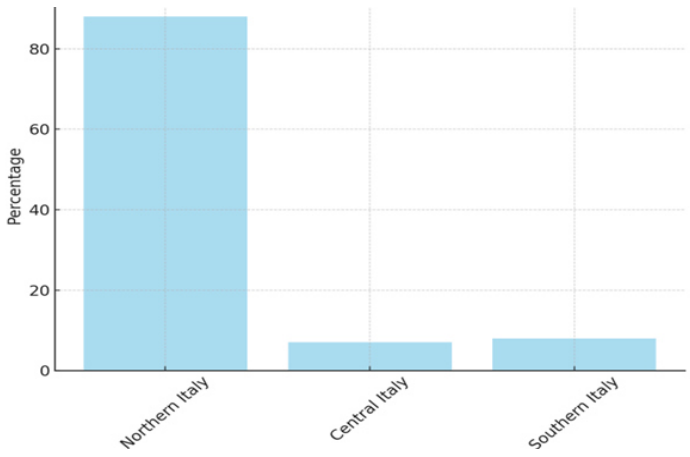

Figure 4. *Geographic distribution of work*[1]

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Figures 5 and 6, showing weekly working hours and income levels, respectively, suggest a strong commitment despite part-time structures and moderate-income brackets. This may reflect limited structural integration within the public sector, as further supported by Figure 7, which indicates that most Psychomotricians work independently or in semi-formal arrangements rather than under permanent contracts. In dialogue with policymakers, this evidence serves to highlight the need for appropriate fiscal, social security, and economic regulations for a profession that is already well-established and actively operating across the national territory.

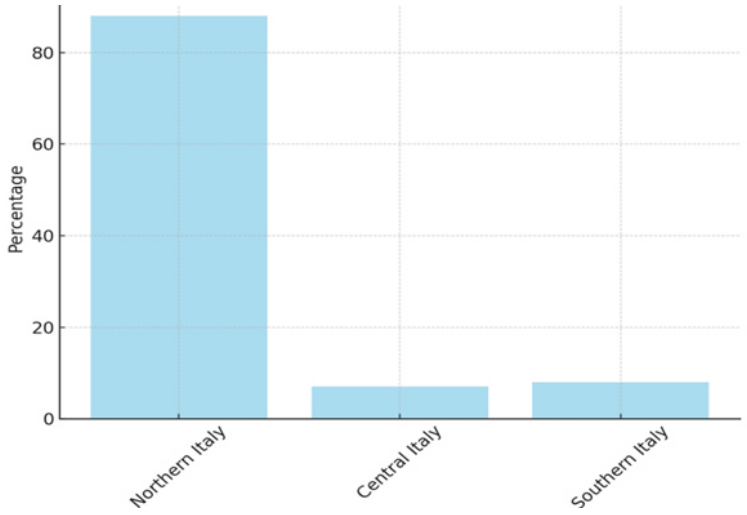

Figure 5. *Weekly working hours*[1]

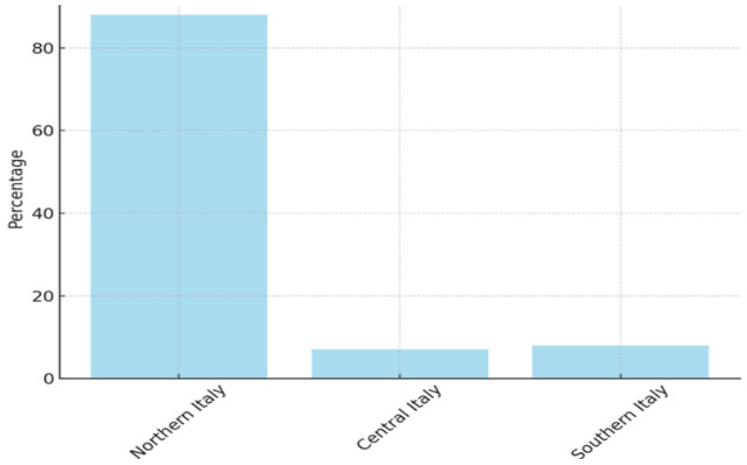

Figure 6. *Income levels*[1]

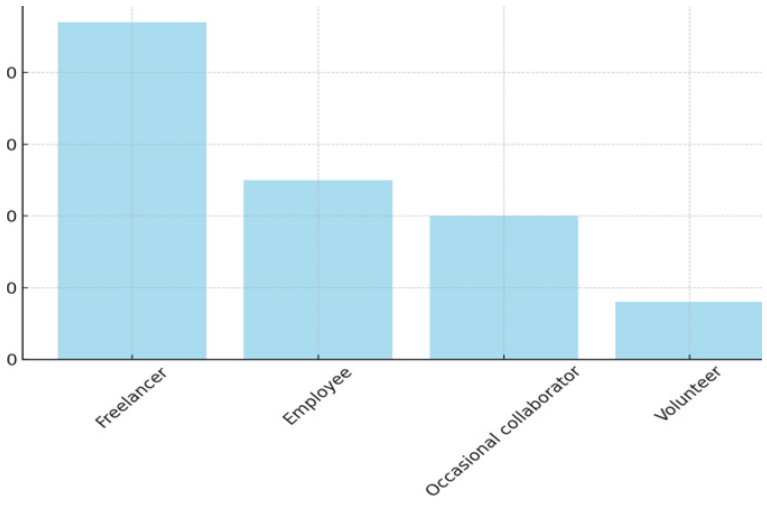

Figure 7. *Type of employment*[1]

Finally, Figure 8 shows continuity in training across decades, demonstrating the resilience and sustained evolution of psychomotor education, even in the absence of formal recognition.

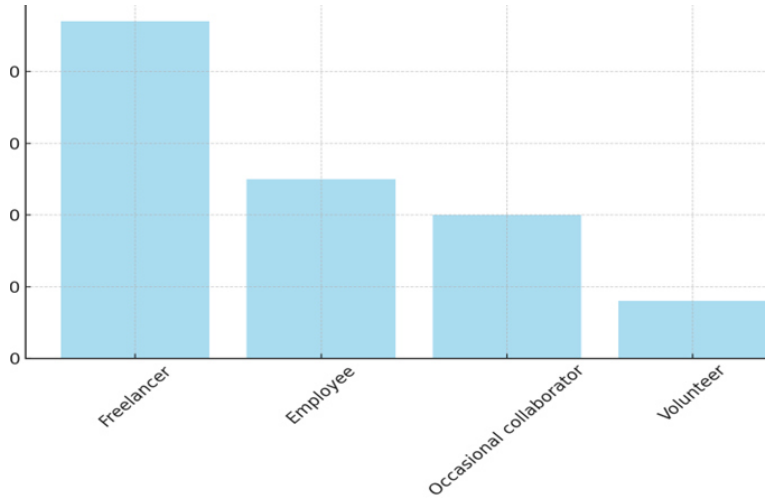

Figure 8. *Year of education* [1]

Together, these findings reinforce the need for institutional acknowledgment that aligns with the scope, distribution, and long-standing contributions of Psychomotricians in Italy. They highlight a regulatory gap in the current framework, where the broader psychosocial and educational dimensions of Psychomotricity remain insufficiently recognized and unsupported by national policies.

Notably, the profession continues to be predominantly practiced in Northern Italy, where specialized training schools are more concentrated, likely due to the greater economic resources available in the region. This regional disparity underscores the unequal access to psychomotor services and training opportunities across the country. Institutional acknowledgment, particularly through parity between public and private systems, plays an important role in reducing this territorial imbalance, ensuring equitable access to both training and user services nationwide.

Moreover, most Psychomotricians work with minors in preventive and educational settings without formal recognition or total legal safeguards for either professionals or service users. This lack of official status hinders the full integration of Psychomotricity into public services and reduces its visibility in key policy areas such as early childhood development, inclusive education, and mental health promotion. Simultaneously, the profession holds significant yet underutilized potential for supporting adults and older adults, particularly those affected by neurological conditions, social isolation, or chronic illness, through embodied, relational, and integrative approaches.

Psychomotricians also contribute meaningfully to social contexts by fostering inclusion, empowerment, and resilience in vulnerable groups, such as incarcerated individuals, people with socio-emotional difficulties, people living in residential social care communities, and the elderly. In addition to their applied work, they actively participate in theoretical development, empirical research and professional training. Their engagement in scientific dissemination, interprofessional collaboration, and curriculum design further advances the discipline and supports evidence-based practice.

Despite the existence of the TNPEE university degree, 91.7% of students continue to choose private psychomotor training institutes over public ones. This preference reflects the value placed on the experiential, relational, and lifespan-oriented approach offered by these schools—an

approach not fully addressed by the more narrowly biomedical model of the TNPEE. Clinical psychomotor intervention is grounded in individualized assessment and tailored interventions using tools such as play-based therapy, sensorimotor activities, group facilitation, graphomotor exercises, and relaxation techniques. At the core of this practice lies the lived bodily experience within a professional relationship, where the body is both the means and context for cognitive, emotional, and relational integration. The use of tonic dialogue further distinguishes psychomotor practice as a unique and specialized method.

Altogether, the profession's longstanding presence, extensive application across contexts and populations, and active contribution to knowledge production support the case for its full legal and institutional recognition. Bridging the current regulatory and territorial gaps is essential to ensure equitable access, safeguard the quality of care, and unlock the full societal value of Psychomotricity in Italy.

6. Conclusion: towards full recognition

As shown in this article, Italy's Psychomotricians respond to contemporary societal needs - ranging from child development to aging populations - with a tonic-emotional, embodied approach that complements biomedical, psychological, and educational paradigms.

Official recognition would enable broader access to services, standardized training, legal protection for professionals, and integration into public systems. It would also align Italy with European standards and strengthen international collaboration and mobility. Currently, such collaboration is only possible through bilateral agreements between national professional associations that mutually recognize each other, rather than through a shared European regulatory framework. Notably, the mutual recognition of professional qualifications under Directive 2005/36/EC does not currently apply to Psychomotricians, as the profession remains unregulated in Italy.

Although much of the present analysis is descriptive, its purpose transcends mere documentation. Historical reconstruction, current mapping of professional demographics, training, practice contexts, and identification of legislative gaps together create an evidence base necessary for informed institutional dialogue. By quantifying the professional landscape and demonstrating the theoretical, empirical, and social foundations of the discipline, this article aims to provide policymakers, professional bodies, and other stakeholders with the robust data required to guide regulatory reforms. Such empirical clarity is essential to justify the institutional recognition of Psychomotricians as an autonomous profession and to delineate its specific scope of practice vis-à-vis other health or educational professions, such as the TNPEE. Furthermore, the data presented here serve to highlight the societal relevance of the discipline and the risks associated with its current legal ambiguity, thereby strengthening the rationale for its formal integration into the national health and education systems. Thus, the descriptive analyses in this study were strategically employed as advocacy tools to substantiate the call for legal recognition and inform policy development in alignment with European standards.

In Italy, Psychomotricity aspires to be a well-established, evidence-informed discipline that seamlessly integrates theoretical rigor with practical relevance across developmental, educational, and clinical domains. Achieving this goal necessitates strengthening and expanding Italian research in Psychomotricity, a process that should be facilitated and supported through formal institutional recognition. The findings presented in this article—rooted in historical analysis and empirical data from two national surveys—demonstrate the scientific validity, professional consistency, and societal utility of Psychomotricians as autonomous professionals. They exhibit a high level of training, professional experience, and active engagement in diverse areas of practice, ranging from early childhood prevention to adult and geriatric care. This research serves as a starting point for the outlined objectives, opening new avenues for further studies that could support this ongoing process. A detailed study aimed at refining the definition of Psychomotricity, supported by a comprehensive review of the available Italian literature, would be highly valuable. This study undertook a detailed historical reconstruction and empirical mapping of the profession. Future research could further consolidate these findings through longitudinal or comparative analyses, thereby strengthening the evidence base for policy

advocacy in this area. The persistent lack of formal recognition not only limits the potential of the discipline to systematically contribute to public services but also exposes practitioners and users to regulatory uncertainty. Incorporating Psychomotricians into national legal and institutional frameworks is thus a necessary and evidence-based step towards aligning Italy with European standards, ensuring ethical, professional, and equitable service delivery. This article calls for an urgent structural response: the full acknowledgment of Psychomotricians as regulated professionals, defined by their embodied, relational, and developmental approach. Such recognition would safeguard professional standards, enhance interdisciplinary cooperation, and ultimately expand access to psychomotor services across all life stages.

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Author Note on AI Usage: Artificial intelligence tools were exclusively used to support the revision of scientific English, including grammar, clarity, and style. No content generation, data analysis, or conceptual contributions were made using AI tools.

[1] Based on data collected through CoNAPP's national censuses (2018 and 2024); aggregation and analysis by the authors for this study

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Further Training for Teachers in Inclusive Physical Education

The Importance of Collaboration and Lesson Design

Sonja Lienert Wolfisberg*, Vitus Furrer**, Siegfried Nagel***, Stefan Valkanover****

* PHLuzern – University of Teacher Education, Luzern, Switzerland, ** PHBern – University of Teacher Education, Bern, Switzerland, *** Institute of Sport Science, University of Bern, Bern, Switzerland, **** PHBern – University of Teacher Education, Bern, Switzerland and Institute of Sport Science, University of Bern, Bern, Switzerland

Contact: sonja.lienert@phlu.ch

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ABSTRACT

Physical education (PE) holds great potential for promoting social participation, yet it also carries a heightened risk of exclusion due to its strong emphasis on performance norms. This research project developed, implemented, and evaluated an evidence-based training programme to support teachers in inclusive PE settings. The main research question focused on how participants applied the training content regarding framework conditions and lesson design, and what effects emerged. Primarily, qualitative interview data were collected before, during, and after the four-part training and analysed using Kuckartz's content analysis. Participant development was examined through a case study and cross-case comparison.

The findings show that inclusive PE can help to increase the social participation of children with disabilities when special educational needs (SEN) teachers share responsibility for motor skill development and general educators maintain accountability for all children. However, the study also reveals that there was no support in this regard from specialists such as SEN teachers or psychomotor therapists. If these experts were to support more in inclusive settings, both teachers and children could benefit. This support could involve choosing peer-tutoring as an appropriate form of organisation and tasks should be differentiated, cooperative, open and adapted to enable participation. The evaluation offers significant insights for refining the training concept and enhancing teacher training regarding inclusive practice.

1. Introduction

Since the adoption of the UN Convention on the Rights of Persons with Disabilities (United Nations, 2006) and the associated demand to enable equal participation of all people with disabilities in society, there has also been a commitment to an inclusive education system. Since then, children with disabilities have been increasingly integrated[1] into mainstream schools in Switzerland (Lanners, 2024). Social participation[2] is an important goal for children with disabilities (Schürer, 2020), as it is one of the basic human needs and considered an important prerequisite for well-being and health (Dean et al., 2016). A lack of relationships with peers can have a negative impact on social-emotional

development and therefore also on school performance (Wentzel & Watkins, 2002). It is therefore not surprising that from an educational perspective, promoting social participation, particularly by increasing positive interactions between children with and without disabilities, is seen as one of the most important tasks of inclusion (Boban & Hinz, 2003). However, many studies point to the problematic effects of inclusive teaching. It has become obvious inclusive education does not guarantee that children with and without disabilities are equally included in social interaction (Garrote et al., 2017; Krawinkel et al., 2017).

Regarding the promotion of social participation, PE is considered to have particularly high potential, and it has been shown that social contacts and interactions can be promoted in this space (Block et al., 2016; Seymour et al., 2009). On the other hand, the risk of exclusion for people with disabilities can be more pronounced in PE than in other contexts because PE is strongly characterised by prevailing performance standards, which in turn depend on physical performance and communication skills (Meier et al., 2016; Rischke, 2013).

Further studies show that the success of social inclusion depends heavily on the teacher (Farmer et al., 2011). However, dealing with social processes in PE lessons in a class characterised by large diversity (e.g., integrated children with disabilities) is a challenging undertaking. Many teachers are unsure how to deal with the significant heterogeneity this entails and feel overwhelmed (Hutzler et al., 2019; Reuker et al., 2016). However, a positive attitude toward diversity is considered an essential prerequisite for successful inclusive PE (Braksiek et al., 2018). It therefore seems important to support teachers in inclusive PE. Only a limited number of studies have been conducted which show how important well-functioning team teaching is, in which all teachers feel responsible for all children (Seitz & Haas, 2014).

In addition to the framework conditions, the lesson design is also very important. It has been shown that a combination of peer tutoring[3] and class assistance has a positive effect on the engagement and knowledge of children with disabilities (Murata & Jansma, 1997). Moreover, peer tutoring enables social interactions, which can have a positive effect on the classroom climate (Klavina et al., 2014; Tindall, 2013). Cooperation is of central importance in inclusive PE as well. There are various studies that have investigated the effect of cooperative forms of learning in PE lessons and have shown positive effects in many respects (André et al., 2011).

In addition to cooperative forms such as peer tutoring, cooperative tasks can also increase contact between children. Cooperative tasks can not only initiate contact between children with and without disabilities, the contact can also be influenced positively, so that the contact is a good experience. The basis of this assumption is the contact hypothesis (Allport, 1954). This states that prejudices can be reduced through frequent and high-quality contact, provided there is consensus regarding goals, positive interdependence and equal status of the group members, as well as support from those responsible. However, answers to the question of how inclusive PE lessons with children with disabilities should be organised are scarce (Giese & Weigelt, 2015). In addition to the apparent lack of concepts, teachers face increased demands in areas of professional knowledge, such as diagnosis, intervention and counselling skills (König et al., 2017).

One possible form of support could be further training for teachers in inclusive PE. According to Baumert and Kunter (2006), teachers' professional competence can be changed. It develops based on the knowledge and skills acquired during initial and further training, as well as professional experience. Lipowsky (2014) states that the quality of learning opportunities utilised, as well as reflection on the learning processes, are decisive factors in this development. However, there is a lack of evidence-based training and further training concepts for inclusive PE. Due to this research gap, the present study has developed and analyzed an evidence-based further training concept. This article presents the concept and evaluates parts of its implementation in terms of specialist collaboration and cooperative lesson design. These findings provide valuable insights into how inclusive practices in PE can be optimised to support the teachers.

2. Concept of Further Training

Changes in participants' behaviour during further training can only be partially attributed to the content of the training itself. They are mostly the result of a variety of interrelated causes (Lipowsky, 2010). To understand learning processes in initial and further training, the offer-and-use model (Helmke, 2009) was established, which was expanded by other researchers (Göb, 2018; Lipowsky, 2010) to explain the effectiveness of further training. Lipowsky (2010) shows, among other things, that the intensity of the context-adapted training programmes has a positive influence on the yield. The extent to which participants utilise the offer depends on its quality and the subjective evaluation of the participants. For further training to be effective, there also needs to be opportunities to transfer what has been learnt.

Göb (2018) suggests the literature-based recommendations for concrete implementation: Effective training programmes should be long-term, involve multiple events and be led by an expert. Timperely et al. (2007) recommend a minimum duration of six months. It is important to combine input, testing and reflection phases. The content should be at the centre and based on subject-specific didactic and scientific findings with practical relevance, as well as being thematically focused (Möller et al., 2006). It should also be orientated towards the needs of the participants and be curriculum-based (Lipowsky, 2006). Furthermore, participants should be encouraged both cognitively and behaviourally through activities such as case work, reflections, observations, forming learning communities, etc.

Based on these considerations, a four-part (four hours a part) training programme was designed with the aim of promoting social participation. Three main goals were pursued. The first objective concerned *attitude*: participants develop a positive attitude towards inclusive PE. They view diversity as a positive factor and strive to provide equal opportunities for everyone. The second objective concerned the *framework conditions*: The teachers make effective use of collegial and institutional resources in further training and in their school environment/school team. The third objective concerned the *lesson planning*: the participants are familiar with conditions that promote inclusion and engage effective methodological and didactic measures in depth. They plan PE lessons accordingly, thereby working to create a positive classroom atmosphere. To reach these goals a circular approach was chosen, meaning that important aspects were repeated and explored in greater depth. Between the four meetings (implementation phase) the teachers were invited to implement everything in their own classes.

During the meetings, different topics like cooperative tasks and peer tutoring implementation were carried out in practice and then reflected upon. The importance of providing positive, individualised feedback to promote the social acceptance of integrated children was also discussed (Huber, 2009a; 2009b). Since many children with cognitive disabilities have motor difficulties (Maïano et al., 2019), differentiation is another key component. PE can be differentiated by offering more difficult or easier variations and options, thus making it more needs-oriented. Another focus was the 6+1 model (Tiemann, 2015), which is helpful when adapting PE to children's individual needs. The model contains six components: materials, learning environment, rules, task design/setting, social forms, and communication. Regarding the "tasks" adjustment, the advantages of cooperative, open and differentiated tasks were discussed, as well as the importance of reflection phases to work with the class and include all players. The "+1" in the model represents a teacher's respectful and positive attitude toward children with disabilities. Since a positive attitude toward people with disabilities is an important prerequisite for teachers (Braksiek et al., 2018; Hennemann & Leidig, 2018), the implementation tasks aimed to intensify contact between the integrated children and theteachers. Exclusionary situations were addressed through case studies. The previous considerations led to the following research question of the present study: What effect does the designed further training programme have on teachers and their inclusive PE lessons in terms of framework conditions and lesson design?

3. Method

The research approach was based on a multiple case study design (Yin, 2009) and a cross-case comparison. Each teacher represented a case.

3.1. Sampling and Research Design

Various measures were taken to achieve the target sample size of twelve teachers (grade 3-6 of primary school). First, a flyer advertising the training was designed and sent to all teachers who participated in the SoPariS[4] survey as part of the Swiss National Science Foundation research project at University of Bern and Bern University of Teacher Education. Teachers were then contacted by telephone. Finally, the training was advertised in the newsletters of the Lucerne Association for Sport in Schools and the Lucerne University of Teacher Education. Specialists in subject didactics, school administrators and teachers were emailed about the training programme and asked to forward the information to interested parties.

Initially, ten teachers started the training programme. Three dropped out due to the Covid-19 pandemic, so data from only seven of the teachers could be evaluated. Of these, two were male and five were female. Three of these female teachers worked as subject teachers. Two had sports-specific education and one did not have any pedagogical education. Further information is provided in Table 1.

Table 1

Overview of the Participating Teachers.

Name/ Code	Age	Function	Formation	Years of experience / with children with disabilities	Grade of primary school	Work quota	Work quota in PE	Assistant present in PE
Daniel Dm29	29	Class teacher	Primary school teacher	3 / 1	5	100%	10%	No
Beatrice Bw38	38	Class teacher	Primary school teacher	7 / 2	4	80%	10%	Yes
Hans Hm59	59	Class teacher	Primary school teacher	36 / 2	4	80%	10%	Yes
Gisela Gw53	53	Class teacher	Primary school teacher	30 / 8	6	90%	10%	No
Vladana Vw35	35	Subject teacher of PE	PE teacher (foreign formation)	8 / 2	3	75%	50%	No
Ingrid Iw39	39	Subject teacher of PE	Pharma assistant	9 / 5	4	35%	35%	No
Ruth Rw56	56	Subject teacher of PE and textile design	PE teacher (short formation) and textile design	35 / 3	4	86%	19%	Yes

Notes. All names have been changed to protect anonymity. The code consists of the first letter of the name, gender (German), and age. "Assistant" refers to an untrained classroom assistant who supports the teacher.
Abbreviation: PE = Physical Education.

The training programme lasted a total of six months. The three measurement points took place before, during and after the training programme. Various instruments were used to collect the data (see Fig. 1). The procedure is explained in the following chapter.

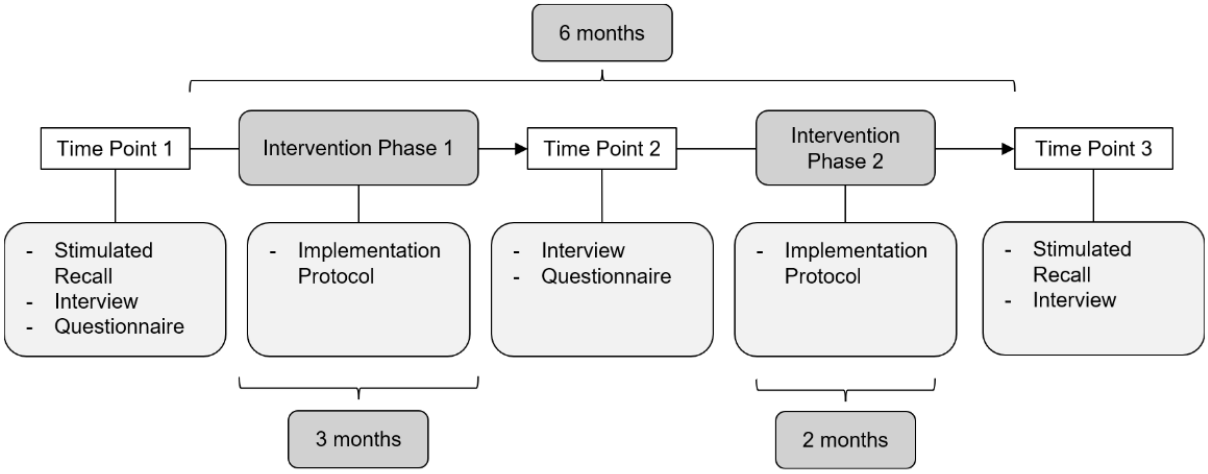

Figure 1 *Research Design*

3.2. Data Collection and Instruments

Shortly before the start of the four-part training programme and one month after the training, a guided interview was conducted with the teachers. It started with a stimulated recall (SR)[5]. The teachers were shown a selected, videotaped scene from their PE lesson, in which the child with a disability did not participate on an equal footing. The teachers had to describe the situation and explain their actions and thoughts. Finally, the teachers were also asked about possible alternative actions.

In the present study, the SR had various functions. On the one hand, it served as a tool for data collection to find out how teachers thought about critical events (Messmer, 2015). This also allowed attitudes to be expressed that were of interest in the context of this study. On the other hand, by repeating the SR at T3, this tool also enabled a comparison to be made to determine whether they had developed new alternative courses of action due to the training or whether, for example, changes in attitude had taken place. This approach served to obtain an outside perspective on the practical knowledge of the individual teachers.

The SR was followed by more questions that were closely related to the theoretical concept of the further training. The teachers completed a written online survey using a tried-and-tested questionnaire from the SoPariS project. Personal details (gender, age, class level, workload), training and further training, as well as experiences on the topic were of interest. The teachers also recorded their experiences of implementing the training content in an implementation protocol. They were asked about this in an online interview after the first implementation phase (T2) and after the training (T3).

3.3. Data Analysis

The written questionnaires were analysed descriptively. As mentioned above, they were used for triangulation in part by correlating the data on attitudes with the interview statements. The implementation protocols were used to record the implementation phases to prepare for the T2 and T3 interviews. They provided an initial overview of the implementation phases and were not evaluated further. To analyse the interviews, the content-structuring content analysis method by Kuckartz (2016) was used. As certain categories of interest were evident and could be formed deductively based on the existing training concept and its corresponding questions, this method was deemed appropriate. Two forms of analysis were chosen. Daniel's case analysis provides the most detailed insight as possible into a specific development process. This case was chosen because of the interesting findings related to the research question. Additionally, this selection allows for an in-depth examination. A cross-case comparison was then carried out across all seven cases in order to relate the results of the case analysis to the other cases.

4. Results

4.1. Case Analysis: Daniel

The 29-year-old class teacher was certified three years ago. He made a particularly positive impression during the training programme, as he implemented all suggestions very conscientiously. Daniel's class included a foreign-language female pupil called Selma with a diagnosed cognitive disability. The SEN teacher and the assistant supported Selma in the classroom, but not in PE lessons. Daniel said that he had never been given any advice on how to deal with the pupil in PE lessons. The other artistic subjects, such as textiles, had also never been discussed with the SEN teacher. The child concerned was simply "dragged along". However, Daniel only realised this because of the interview (Dm29_t1, paragraph 349-360[6]).

As a result of the training, Daniel realised on the one hand that Selma was not involved enough in PE lessons. On the other hand, he realised that he could also use the SEN teacher for teaching objectives in movement and sport: As he could not integrate the SEN teacher into PE lessons during the implementation phase for organisational reasons, he instructed the SEN teacher to practice ball skills with Selma in a playful way in classroom lessons (Dm29_t3, A31[7]). As a result, Selma became much more confident with the ball, as the following quote shows:

> And now (...) after the further training, (...) the idea of addressing topics with the remedial teacher (...) especially today in handball. At the beginning she was in the goal and she caught every ball, every ball (...)! It really was such a huge wow effect ... and she was also really happy. (...) I can see that she is better integrated. (t3, A103ff)

Daniel had learnt how helpful it is to exchange ideas with others. Leaving children to practise unaccompanied is not enough to adequately support children with disabilities. The exchange and cooperation with other professionals from the fields of psychomotor skills, special education and with parents is therefore important (t3, A111). It would also help to talk to someone about this if the teacher was not making progress with a child and self-doubt arose as a result (t3, A121).

Daniel's PE lessons before the further training appeared to be characterised by various forms of competition, as the children like to compete (T1, A47) and learn to assess themselves in the process. He admitted: "I think we are a meritocracy, and you compare yourself with others" (T1, A50ff). Another statement shows that he closely associated the educational perspective of "togetherness" mentioned in the curriculum with "performance" (T1, A235). It was also important to him that the children got to know many types of sport and were encouraged to join a club. This promoted integration (A116f).

During the implementation phases, he implemented a lot of training content on the topic of cooperation with his class. Selma had initially been a rather passive member but had taken instructions from the group and carried them out, whereupon she had been praised by the group (t2, A120). The focus was increasingly on working together (t3, A27). The children had great fun doing the cooperative tasks. Rank was suddenly no longer as important as achieving a common goal (t3, A26f). Selma was able to participate well, as clear tasks were allocated in the groups. She was happy and was more active. Daniel said that it was easier for Selma to participate in cooperative tasks than in sports games, where the role on the field was not so clearly defined and stronger players often dominated (t3, A29).

Daniel's intense engagement with the learning opportunities was also reflected in the fact that he incorporated cooperative forms of play not only in PE lessons, but also in classroom lessons in the form of movement breaks (t3, A165). The "togetherness" now seemed to have taken on an independent and even integrative value. The increased contact between the children through the cooperative content and the peer tutoring method led to more child-centred PE lessons. This is expressed particularly clearly in the following quote, when Daniel responded to the question of how you would notice that he had developed further if you were to observe his PE lessons:

> So everyone can take part. Everyone is actively involved. (...) That children who are weaker (...) don't just stand around and wait (...) No more frontal teaching, showing off, imitating, but really in the group, analysing, doing and supporting each other (...). Not performance-orientated, but (...) achieving a goal together. (...) It's not always just about winning, but (...) reaching the goal and not just being under this pressure, I have to be the fast one. (t3, A184ff)

Daniel seemed to grasp the mission of PE as multi-perspective teaching (Kurz, 2008) more clearly: “And now also through this further training (...) togetherness. That would be incredibly important (...) especially in school sport (...). You shouldn't just focus on performance. There are other areas where children can do sport in their free time (...) (t3, A206).”

Another implementation task was to implement peer tutoring in his own class. Daniel realised that he had barely used this in PE lessons, although he had done so in some other subjects (t2, A54ff). Inspired by the training, he had now also implemented it in music and PE lessons (t3, A74f). He was convinced that this method was also justified in PE lessons because the heterogeneity in the class was very high. Children who are in a club often have particularly good skills. The tutors could then demonstrate their knowledge and repeat it straight away. He would now like to continue using this form of organisation in PE lessons (t2, A30). He is convinced that peer tutoring had improved the class climate and Selma's integration (t2, A126ff).

Effects relating to lesson design, among other things, are also evident in the statements made in the context of the SR. Before the further training, when first considering the critical incident in which Selma was barely able to master the required task in a competition situation due to her motor difficulties, Daniel named two competition-orientated alternative courses of action. This one-sided solution finding was extended when he looked at the critical situation again after further training. He suggested various non-competitive tasks with varying degrees of difficulty to adapt the task to individual abilities. In this way, he believed that an embarrassing situation could be avoided (t3, A7) and the pressure to perform could be reduced (t3, A17). Other possible courses of action included adapting rules and materials that apply to everyone to prevent the integrated child from having a special status.

4.2. Cross-case Comparison

Regarding support in PE lessons, a distinction can be made between two groups prior to further training: four teachers were partially supported by an assistant. The others taught the subject PE alone. Looking at the collaboration between the teacher and assistant, it is noticeable that three teachers tended to delegate responsibility for the child with a disability to the assistant and took little leadership in collaboration. They trusted the assistant to get involved and recognise where they were needed. None of the teachers received advice on diagnosis and the associated difficulties in PE lessons before the further training (e.g., Iw39_t1, A389ff). The use of specialist advice suggested in the further training was perceived positively and, in some cases, expanded the understanding of the child with a disability (Vw_t2, A146ff; Vw_t2, A275ff).

Many of the teachers' statements show that, like with Daniel, PE was primarily associated with performance before the further training (e.g., Rw56_t3). Many teachers realised the pedagogical value of cooperative tasks during the implementation phase. For the most part, they were able to successfully implement the examples carried out in the training and reported predominantly positive experiences (e.g., improvement in social participation and the classroom climate, more variety, fun and a sense of achievement, e.g., Rw56_t3). However, some teachers have implemented ideas that do not fulfil the criteria of co-operative tasks[8] (e.g., Vw35_t3, A58; Bw35_t3, A139f).

Peer tutoring as a form of organisation rarely took place before the teachers' further training in PE lessons. When it did occur, it happened spontaneously, with individual children being used as helpers (e.g., Rw56_t1) or offering to support the integrated child themselves (Vw35_t1, A326ff). The situation was quite different in the classroom where peer tutoring seemed to occur frequently (e.g., Gw53_t1). Through the further training, teachers also implemented it in PE lessons (e.g., Iw39_t3, A70) and had consistently good experiences with it (e.g., Bw38_t3) and wanted to use it more in the future (e.g., Hm59_t3). Some teachers recognised that the children related to each other when supporting each other, which contributed to a better class climate (e.g., Rw56_t2, A62ff). The prevention of special treatment through the special support of the teacher and the advantage of motivation using a learner as a tutor were also mentioned several times (Bw38_t3, A240ff; Gw_t2, A103ff). Almost all teachers showed a clearly positive development when naming alternative

courses of action in the context of the critical incident described in the SR. Some perceived the marginalising situation in a more differentiated way and viewed their own actions more critically or were able to name significantly more alternative courses of action and diverse solutions (e.g. Bw38_t3, A35ff; Vw35_t3, A12).

5. Discussion

The study makes an innovative contribution to the design of further training to promote the participation of all children in inclusive PE. The findings show that peer tutoring, as an organisational method, and cooperative and open tasks, as content, have proven successful. Support measures from specialist experts would also be useful. The results suggest that there is great potential in providing support in PE lessons and the associated motor skills development for children with disability. However, it also highlights the lack of support from SEN teachers and psychomotor therapists in this inclusive setting, encouraging us to question their role.

The results showed that, during the training, all the teachers were motivated to engage in dialogue with the SEN teacher about how to deal with the child with a disability – and found this to be beneficial. Inspired by the training, a school-based SEN teacher was also recruited to promote physical activity. This shows that it is worthwhile to promote cooperation with the SEN teachers in the subject of PE. This successful example of intervention further shows that motor skills (especially for ball games) can be crucial in terms of social participation. Sports skills of children with disabilities are obviously central in terms of social relationships (Steiger et al., 2021). Giese and Weigelt (2015) emphasise the importance of skill acquisition as an important prerequisite for participation.

However, this study also revealed that teachers of PE are not supported or advised by SEN teachers on how to deal with integrated children. Accordingly, Rischke et al. (2017) were able to show that there is less support in the subject of PE compared to other subjects. This is problematic, as PE teachers often do not feel able to integrate children with disabilities appropriately (Popcock & Miyahara, 2018). It is therefore not surprising that children with disabilities do not feel supported in PE lessons (Giese & Timberlake, 2021). If SEN teachers lack support because they feel incompetent when it comes to developing motor skills, then this raises the question of whether this topic is covered adequately in their education. It also raises the question of the extent to which the psychomotor therapist could take on an advisory role instead of working in a separate room with the children.

The present study found that teachers were either not supported at all, or they were supported by untrained assistants. The findings showed that the collaboration with the assistant was not organised as team teaching. As a rule, the assistant took care of the child with a disability. This special treatment can lead to segregation. This appears to be exacerbated if support assistants have little or no pedagogical training (Lienert et al., 2001; Walter-Klose, 2012).

The findings regarding *lesson design* show that the participants' ideas of good PE prior to the further training were closely associated with performance and competition. According to the teachers' assessment, the pedagogical perspective of "togetherness" also plays an important role, but mostly in connection with competition. The observed focus on performance is typical (e.g., Meier et al., 2016; Rischke, 2013).

During the training, the teachers recognised the value of cooperative forms of play for inclusive PE lessons and implemented them with motivation. They reported various positive effects, such as a better class climate, a greater sense of achievement and improved social participation, and began to critically scrutinise the effects of strongly performance-oriented PE lessons. Studies showed that teachers need to reflect on their own sports biography and associated unconscious beliefs about good PE to question performance-orientated and physical ideals in particular (Erhorn et al., 2020; Grenier & Giese, 2023). An unreflected teaching style can cause barriers to participation (Meier et al., 2017; Ruin, 2017).

Peer tutoring was taught as a helpful method of inclusive PE. This had not been used in the participants' PE lessons before the training, in contrast to classroom teaching. After the training, the teachers were motivated to use it more often due to the many positive experiences. They mentioned, among other things, that the problem of special treatment due to individual support from the

teacher did not materialise with peer tutoring. On the other hand, the children could socialise together when helping each other. Similar positive effects were also demonstrated by Garotte (2017). Through cooperative learning, social skills and interactions between children with and without disabilities could be promoted, and the risk of exclusion of integrated children in the classroom could be minimised (André et al., 2011; 2013). In conclusion, the study makes a valuable contribution to our understanding of how to optimise current inclusive PE practice and support teachers more effectively.

6. Limitations and Outlook

One limitation of the study is that the only one teacher's results were reported in depth. This teacher was selected because of his particularly promising results. As this is an exploratory study, no general conclusions can be drawn from it. Nevertheless, a successful case study can provide inspiration.

Regarding training content, it should be noted that implementation could still be optimised: to develop learning tasks for one's own class from the examples of cooperative forms of teaching, more support is needed from the training leader. In addition, an even more self-critical examination of one's own ideas of norms and performance requirements in PE lessons would have been necessary. In this respect, the inclusion of the model of multi-perspective PE, which served to scrutinise one's own PE lessons and the priorities that apply would be beneficial (Grenier & Giese, 2023). The findings also show that the diagnostic, intervention and counselling skills of school-based SEN teachers still need to be developed specifically for PE. A possible expansion of the understanding of their role could also be helpful if SEN teachers are not aware of their responsibilities in inclusive PE. In addition, counselling and support from other specialists (e.g., psychomotor therapists) should be considered. Why do psychomotor therapists not engage more frequently in inclusive PE? Why do they still work separately in the therapy room? Given their expertise, they could make a real contribution to psychomotor development, particularly in inclusive PE classes. Providing more support from psychomotor therapists in inclusive settings, such as inclusive PE classes, could lead to valuable synergistic effects. Both teachers and children with disabilities could benefit from this.

The present study shows, among other things, that the development of motor skills in children with pronounced motor difficulties is rarely examined in inclusive schools. In addition, teachers do not feel adequately prepared and supported for inclusive PE. It is therefore necessary to examine more closely whether and in what form the basic teacher education addresses social participation in inclusive PE lessons.

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1 The terms are defined according to the sociological perspective, following Luder (2017). "Inclusion" is used when the focus is on the accessibility of a system or an institution, while "integration" is used when attention is paid to the situation of the person with special needs.

2 The term "social participation" is based on Koster et al. (2009). They summarise the social dimension of inclusion as social participation, which consists of the four core aspects: interactions, friendships, social self-perception and acceptance by peers.

3 This is a pedagogical method in which children help each other to learn. Usually, one student is the expert who supports a less experienced one (Topping, 2015).

4 www.soparis.ch: The SoPariS training programme was developed and evaluated as part of Sonja Lienert Wolfisberg's doctoral thesis, which has not yet been published.

5 This method was developed by Bloom (1953). It makes possible to record and explore the thoughts of study participants about challenging teaching situations (Messmer, 2015). In a SR, subjects are presented with an audio or video recording of a situation they have experienced themselves to refresh their memory (Busse & Borromeo Ferri, 2003).

6 The following references in the first section refer to this transcript. Therefore, only the paragraphs are referred to below.

7 All subsequent references in this first section refer to the transcripts t2 and t3. Therefore, not only the paragraphs are labelled below, but also the measurement times. They can be found in Appendix E.

8 Described in chapter 1: consensus regarding goals, positive interdependence and equal status of the group members, as well as support from those responsible.

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Integrating Movement, Emotion and Cognition: A Meta-Analysis of the Effectiveness of Movement-Based Interventions for Motor Skills, Social-Emotional Learning, and Mental Health

Anja Solenthaler*, Olivia Gasser-Haas*, Melanie Nideröst*, Stephanie Fink*, Pierre-Carl Link*, Fabio Sticca*, Dennis C. Hövel*

* University of Teacher Education in Special Needs, Zurich, Switzerland

Contact: anja.solenthaler@hfh.ch

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ABSTRACT

Objective **This meta-analysis investigated the effectiveness of movement- and body-oriented interventions as applied by psychomotor therapy and identified practice-relevant implications.**

Methods **A systematic literature search adhering to PRISMA guidelines was conducted across EBSCOhost databases. Studies involving movement-based interventions for participants aged 2–18 years were included, yielding 68 studies with 6,396 participants from 22 countries. Effect sizes were calculated using Wilson's bias-corrected d values and weighted for sample size. Heterogeneity was assessed via Q-statistics and I^2, with a random-effects model applied where appropriate.**

Results **The overall weighted mean effect size was $d_w = 0.59$ (95% CI [0.51, 0.67], $p < .001$), indicating a moderate, statistically significant impact. Substantial heterogeneity ($Q = 5294.84$, $p < .001$; $I^2 = 97.23\%$) supported the use of a random-effects model. Moderator analyses showed differential effects across outcome domains, with strong effects for motor skills ($d_w = 0.757$), self-management ($d_w = 0.662$), relationship skills ($d_w = 0.604$), and mental problem reduction ($d_w = 0.441$).**

Conclusion **Movement- and body-oriented interventions as applied by psychomotor therapy demonstrate moderate, practically significant effects, particularly for motor skills, social-emotional learning, and mental health. Tailoring interventions to participants' needs, integrating cognitive components, and ensuring professional expertise enhance effectiveness, providing a robust evidence base for psychomotor therapy and educational practice.**

Introduction

The direct impact of physical activity on physical and mental health, as well as on learning behaviour, has been extensively studied. In a comprehensive meta-analysis including 57 studies Spruit et al. (2016) reported small to moderate overall effects of physical activity on the reduction of internalising and externalising problems such as anxiety and depression or aggressive behaviour, as well as improvements in self-concept and academic performance among adolescents. Similarly, Haverkamp et

al. (2020) demonstrated in their meta-analysis that physical activity can enhance cognitive outcomes – particularly executive functions – and academic achievement in adolescents. These findings are consistent with more recent evidence suggesting that physical activity positively contributes to children's emotional regulation, attention, and social interaction, particularly when embedded in structured educational settings (Donnelly, et al., 2016; Singh, et al., 2019). Kemel, Porter, and Coombs (2022) examined the effects of movement-based interventions on physical and mental health, as well as social well-being, and consistently reported positive outcomes. In addition, qualitative findings revealed substantial evidence for the beneficial effects of group movement activities on individuals perceived social connectedness. These positive effects of physical activity on mental health are evident not only in adolescents but also in children. In a review of 23 studies, Hale et al. (2023) found clear evidence supporting the improvement of psychological well-being, including quality of life, body image, and self-esteem, through physical activity in children.

Previous reviews on the influence of movement-based interventions on psychosocial outcomes have focused almost exclusively on *movement* in the sense of *physical activity* (Spruit, et al., 2016; Kemel et al., 2022; Hale et al., 2023). However, this perspective captures only a limited aspect of what movement can entail. Psychomotor approaches expand this perspective by conceptualising movement not merely as physical exertion but as an integrated form of experience that engages sensorimotor, affective, and social-cognitive systems simultaneously (Payne & Crane-Godreau, 2015). Emerging from two main directions – movement-oriented approaches rooted in physical education and body-oriented approaches also referred to as body-oriented psychotherapy – psychomotor therapy adopts a broader understanding of movement, which encompasses not only physical activity but also body-oriented interventions centred on the immediateness of bodily, emotional and perceptive experiences (Röhricht, 2009; Emck & Scheffers, 2019). Psychomotor interventions are designed with an awareness of the dynamic interplay between cognitive processes (including perception, thinking and knowledge acquisition), affect, and behaviour. As such, these psychomotor interventions aim to promote not only motor development, but also aspects of socio-emotional development such as self-awareness, emotional regulation, and social competence through embodied experiences. By framing movement as a medium for self-experience, expression, interaction, and therapeutic change, psychomotor therapy offers a holistic approach to understanding and supporting psychosocial development.

To date, Moschos and Pollatou's (2022) work represents the only review specifically examining psychomotor interventions. In their study, they identified twelve research projects that implemented psychomotor intervention programmes aimed at supporting various areas of child development within a universal preventive framework. Psychomotor intervention was defined as a "treatment that uses body awareness and physical activity to solve problems" (Moschos & Pollatou, 2022). Overall, the authors report positive effects of these programmes on motor skills, as well as on emotional and academic development. However, the limited number of studies and the considerable methodological heterogeneity among them constrain the ability to draw nuanced or generalisable conclusions regarding their effectiveness. The authors thus demonstrate a well-known challenge in research on psychomotor therapy: despite the good theoretical foundation, psychomotor therapy as an educational-therapeutic approach and special educational discipline lacks evidence of effectiveness, which is increasingly required for its legitimisation and professionalisation (Gasser-Haas & Steiner, 2022).

This meta-analysis contributes to closing this research gap by including both studies explicitly labelled *psychomotor* or *psychomotor therapy* and movement- and body-oriented interventions that could be applied in the context of psychomotor therapy.

Interventions were considered for inclusion only if they met specific criteria, which are grounded in the definition of psychomotor therapy as applied in the German-speaking part of Switzerland. As a special educational discipline in the Swiss education system, psychomotor therapy offers a low-threshold support for children with developmental delays, difficulties or impairments in the

social, emotional, motor, cognitive, and/or sensory areas and their interactions (EDK, 2023). These are typically combinations of affective, social and/or motor difficulties (Widmer & Bräuninger, 2020; Amft & Amft, 2003).

In psychomotor therapy, self-activity and the individual meaningfulness of actions are central, always emphasising the inclusion of physical dimensions (Fischer, 2019, S. 48 f.). Movement is viewed both as a reflection of inner experience that can be seen as a self-expression or as a symbolic representation that can be leveraged as a tool for psychomotor intervention. Movement also includes playful and creative activities. This functional-aesthetic perspective on movement is particularly relevant in school settings, where emotional, behavioural, and cognitive learning processes are interwoven with embodied interaction (Lobo & Winsler, 2006). This creates possibilities for experience that enable or stimulate learning and change processes in various areas of development and education.

To categorise and differentiate the various effects achieved in and through movement, the theoretical model proposed by Thimme, Deimel, and Hölter (2021) for movement therapy in child and adolescent psychiatry provides a valuable framework. This model distinguishes three types of effects: functional-instrumental effects, buffer effects, and mediator effects. Functional-instrumental effects describe the physical impact of movement, such as increased physical resilience or improvements in motor skills. Buffer effects refer to the ability of physical activities to create “islands of normality” within otherwise challenging everyday lives. Such experiences can serve as entry points for engaging with difficult issues in the first place. Mediator effects, in turn, denote changes and developments that extend beyond the physical level, particularly in the emotional and social domains. These include not only symptom-specific improvements but also broader aspects of personal stability, such as enhancements in self-concept.

This conceptualisation aligns particularly well with pedagogical and therapeutic interventions such as psychomotor therapy that likewise aims to achieve effects across all three levels, with a particular focus on the mediator dimension. To operationalise these mediator effects in a comparable manner, the present study draws upon the model of Social and Emotional Learning (SEL). This framework, developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2023), defines five interrelated domains: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Each domain encompasses competencies that reflect the interaction of cognitive (including perception, thinking and knowledge acquisition), affect, and behavioural processes (Durlak, et al., 2011). For interventions to be effective at the behavioural level, all three components must be addressed (Durlak et al., 2011). This integrative understanding is characteristic of psychomotor therapy, which seeks to harness the embodied interplay between movement, cognition, and emotion.

Building on these foundations, interventions within psychomotor therapy may be characterised as follows:

- movement activities combined with cognitive or behavioural elements, meaning that physical activity (e.g., movement games, exercise, mindfulness in movement) is complemented by reflective tasks and/or direct instruction, feedback or consequences;
- movement in a broader sense, combined with cognitive or behavioural elements. This encompasses the expanded understanding of movement and body orientation and includes playful and creative activities (e.g., role play, expressive arts) also integrated with reflective tasks and/or direct instruction, feedback or consequences.

The aim of the present meta-analysis is to examine the effectiveness of movement-based and body-oriented pedagogical and therapeutic interventions – as applied by psychomotor therapy – in enhancing motor skills, physical and mental health, academic achievement, and social-emotional competencies in children and adolescents, with a particular focus on the school context. Psychomotor therapy has previously been characterised as a combination of movement- and body-oriented approaches (Emck & Scheffers, 2019); the present study expands this conceptualisation by integrating cognitive and behavioural methods as core features of psychomotor therapy.

Method

Literature Search

The principles of the PRISMA guidelines were applied in conducting this systematic review. Relevant studies were identified through a search conducted via EBSCOhost across the databases ERIC, PsycInfo, Psyndex, Medline, and Education Source. Search terms in German, English, and French were used to increase the yield of relevant results. The terms *Wirksamkeit* (efficacy), *Entwicklung* (development), *Körper* (body), and *Zuwendung* (intervention), combined using AND were used in the search strategy. This operationalisation enables the inclusion of relevant studies on movement-based interventions from the broader field of educational and therapeutic approaches, given that only limited research specifically focused on *Psychomotoriktherapie* can be expected. The specified search terms were operationalised as follows:

Wirksamkeit (efficacy): Einzelfallstudie OR case study OR étude de cas OR Single-Case OR experiment* OR expériment* OR RCT OR Metaanalyse OR Meta-analysis OR Méta-analyse OR controlled OR kontrolliert* OR contrôlé
AND Befund OR Finding OR Ergebnis* OR result* OR résultat OR Effekt OR effect* OR effet OR Wirksamkeit OR effectiveness OR efficacité OR Evidenz OR evidence OR évidence OR preuve

Entwicklung (AV) (development, DV): emotional* OR émotionnel*OR social* OR sozial* OR attention* OR Aufmerksamkeit* OR executive functions OR Exekutive Funktionen OR fonctions executives OR sensorics* OR sensorial* OR Sensorik

Körper (body): motor* OR motricité OR motor development OR motorische Entwicklung OR développement moteur OR body OR Körper OR Leib OR corps OR clumsiness OR motorische Ungeschicklichkeit OR maladresse OR impulsive OR impulsiv OR impulsif OR hyperactive OR hyperaktiv OR hyperactif OR sluggish OR träge OR léthargique OR movement OR mouvement OR Bewegung

Zuwendung (UV) (intervention, IV): intervention OR prevention OR Prävention* OR prévention OR program* OR manual OR manuel*OR therapy OR thérapie OR Therapie

Inclusion and Exclusion Criteria

Studies were included if they were intervention studies that examined developmental outcomes in relation to the factor of *intervention*. Both the terms *body* and *development*, as previously operationalised, had to be addressed through the intervention, and the sample population had to fall within the age range of two to eighteen years. Only studies published in German, English, or French were considered.

Studies were excluded if, based on the consensus of the author team, they were deemed not relevant to the research question. This applied, for example, to animal-assisted interventions, parent-only training programmes, behavioural or psychotherapeutic interventions without a movement component, as well as music therapy interventions lacking active client participation. These approaches typically employ specific settings and methods that are not characteristic of pedagogical-therapeutic practices.

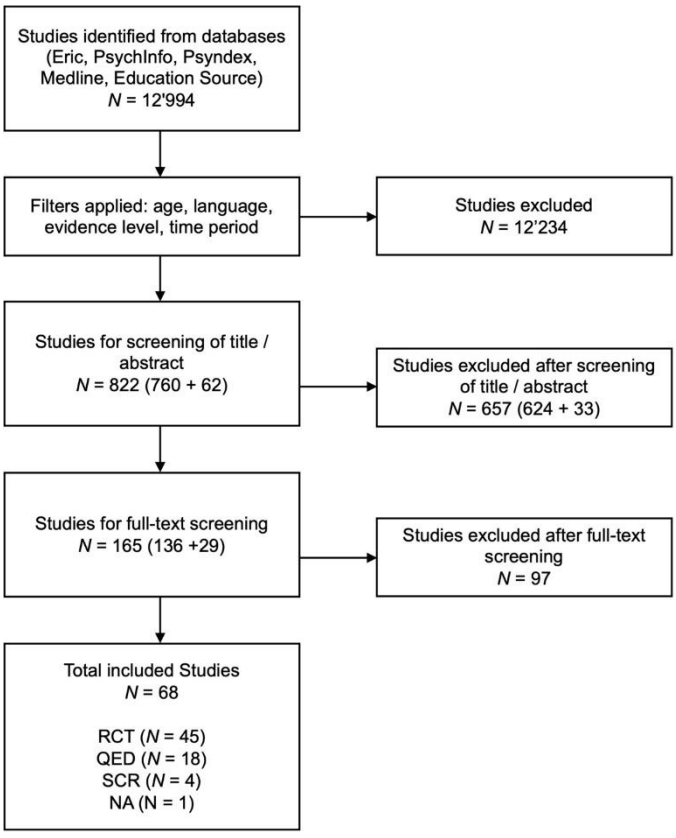

Figure 1 *Flow Diagram of Study Selection*

The initial search conducted on 13 January 2022 without filters yielded 12,994 results. Subsequently, the following

filters were applied: *age* (2–18 years), resulting in *N* = 2,717; *language* (German, English, French), *N* = 2,644; *evidence level* (peer-reviewed; evidence level II: quantitative data), *N* = 844; and *publication period* (2002–2022), *N* = 760. These 760 studies were randomly distributed among the author team for title and abstract screening. For 25% of the studies, screening was conducted independently by two members of the author team. This process resulted in 136 studies being selected for full-text screening, which followed the same procedure. Studies were excluded if they did not meet the inclusion criteria and had not yet been eliminated by the filters or if they were not relevant to the research question according to the consensus of the author team.

An additional literature search was conducted on 31.01.2024 to include more recent publications. Furthermore, the search was expanded to cover discipline-specific journals that are not indexed in the databases searched. The following journals were additionally examined: *The Arts in Psychotherapy, Prävention und Gesundheitsförderung, Children, Motorik*. The supplementary literature search identified an additional 29 studies for full-text screening.

Data Registration

All group comparisons identified within the included studies were recorded in accordance with PRISMA guidelines, using a coding scheme based on both content-related and methodological characteristics. The following information was documented: publication details (authors, year of publication), the research question of each study, sample characteristics (age, gender distribution, diagnoses, level of prevention, country, socio-economic status), aspects of methodological quality (design, dropout rates, blinding, pre-test differences, measurement instruments), intervention characteristics (name, number of sessions, duration, mode of delivery, setting, facilitator), as well as the dependent variables assessed. In addition, the interventions were categorised according to the previously established operationalisation of psychomotor interventions. The coding scheme, coding reliability, and a detailed list of all studies including all group comparisons are available upon request from the first author.

Outcomes were categorised based on the theoretical framework proposed by Thimme et al. (2021). The domain of functional-instrumental effects was represented by the categories *motor skills* and *physical problem reduction*. The domain of mediator effects—which was of particular interest—was categorised using the CASEL framework (2023), including the following domains: *self-awareness*, *self-management*, *social awareness*, *relationship skills*, *problem-solving skills*, *academic skills and mental problem reduction*. For each of the nine outcome categories, the effect measure, effect size, and p-value of the group comparison were also recorded.

Data Analysis

In a first step, all non-significant group comparisons were set to zero and all referenced effect measures, if not already specified in Cohen's *d* (1988), were transformed into *d* using the reported effect measures (η^2, *r*, φ) or the published primary statistics (mean, standard deviation) or using test statistics (*t*-, *F*-values). According to established conventions (Bortz & Döring, 2006), an effect size of $d < 0.2$ is considered to have no practical relevance, values between 0.2 and 0.49 indicate a small effect, between 0.5 and 0.79 a medium effect, and from 0.8 upwards a large effect.

Following the procedure for meta-analyses proposed by Wilson (2011) , all *d* values were adjusted using a bias correction for small sample sizes when calculating standardised mean differences. A weighting factor (*w*) was also calculated for each individual effect. The average effect sizes were then computed by taking the sum product of *d* and *w*, divided by the sum of *w*, and it was assessed whether these weighted average effects significantly differed from zero.

To examine the homogeneity or heterogeneity of the distribution of effect sizes, the *Q*-statistic was applied. This test determines whether the variance among effect sizes can be explained solely by sampling error (i.e., random variation), or whether substantial heterogeneity exists, indicating systematic differences between studies.

In cases where effect sizes were homogeneously distributed (non-significant *Q*-value), a fixed-effects model was used. This model assumes that all studies estimate the same true effect and that any observed

differences are due solely to random error. Effect sizes in this model are typically weighted by their precision, defined as the inverse of their variance.

Conversely, if significant heterogeneity was observed (significant *Q*-value), a random-effects model was applied. This model assumes that the true effect may vary across studies due to differences in populations, settings, or methodologies. It incorporates both within-study and between-study variance components in the weighting process, leading to more conservative estimates and wider confidence intervals.

Additionally, the analysis of heterogeneity served as a basis for moderator analyses aimed at identifying systematic sources of variation in effect sizes. These analyses examined whether specific study characteristics (e.g., study design, mode of implementation, theoretical framework of the intervention) moderated the effect sizes. Meta-regression techniques (*QM*-statistic) were used to identify potential explanatory variables for the observed heterogeneity, enabling more nuanced conclusions regarding the conditions under which interventions are effective.

Results

Description of Included Studies

A total of 68 studies (see supplement for the complete list) were included in the meta-analysis. These studies originated from 22 countries and together comprised a sample of 6,396 children and adolescents, ranging in age from 1;10 to 19;10 years (M = 101.13 months, SD = 43.64, Md = 95.5). The median sample size was 49 participants per study. Across the total sample, 36.76% were female (SD = 21.18), although the gender distribution varied considerably across studies. The number of intervention sessions ranged from 1 to 150 (M = 24.22, SD = 25.34, Md = 16), with a programme duration spanning from 0 to 44 weeks (M = 12.40, SD = 8.56, Md = 10).

The 68 studies included in the meta-analysis were conducted across a broad international spectrum, spanning six continents and 22 countries. Table 3 provides an overview of the number of studies per country. The highest number of studies originated from the United States (k = 16), followed by Switzerland (k = 6), Iran and Italy (each k = 5), and Australia and Canada (each k = 4). European countries collectively accounted for the largest share of studies (k = 22), with contributions from Germany (k = 3), France (k = 2), the Netherlands (k = 2), and several others. Studies from Asia represented a similarly substantial portion (k = 17), including Iran (k = 5), Taiwan (k = 3), and China (k = 2). African countries were represented by three studies, while two studies each originated from Brazil (South America) and Tunisia (Africa). One study, by Smith et al. (2020), included samples from both China and the United States, and is thus listed under both regions.

Eight studies (n = 1,227) explicitly targeted populations from low socio-economic backgrounds. Across all included studies, socio-economic status (SES) was classified as heterogeneous in 75% of cases (n = 51), middle in 11.8% (n = 8), and low in 13.2% (n = 9). These distributions reflect a broad range of socio-economic contexts and suggest that many studies included participants from diverse backgrounds.

With regard to the sample selection criteria, 30 studies focused on participants with diagnosed conditions (indicated), 12 addressed selective groups at risk, and 27 studies employed universal approaches without predefined inclusion criteria. The most frequently studied diagnoses were attention-deficit/hyperactivity disorder (ADHD; k = 10) and autism spectrum disorder (ASD; k = 8). Additional diagnoses included developmental coordination disorder (DCD; k = 2), emotional and behavioural difficulties (EBD; k = 4), intellectual disabilities (ID; k = 4), learning disabilities (LD; k = 3), and post-traumatic stress disorder (PTSD; k = 1). Two studies focused on children with somatic conditions. In 34 cases (50%), no specific diagnosis was reported.

A total of 45 studies used randomised controlled trial (RCT) designs, 18 followed quasi-experimental designs (QED), and 4 implemented single-case research (SCR) designs. One study did not report its methodological design. Fourteen studies included blinded data collection procedures, whereas in 53 studies no blinding was reported. In one case, the blinding status was unclear.

The interventions were delivered by various professionals. Educational-therapeutic staff were involved in 21 studies,

while teachers and trainers each implemented 12 interventions. Physical education specialists delivered the programme in 7 studies. Additional educational professionals were responsible in 4 studies, and in 6 cases, the developers of the programme themselves conducted the intervention. In 5 cases, the intervention personnel were not specified.

Most interventions (k = 37; 54.4%) were conducted in school settings. Therapeutic settings were used in 15 cases (22.1%), and 10 interventions took place in leisure or childcare contexts. In 6 studies (8.8%), the implementation setting was not reported.

The most frequently used assessment instruments included the BOT-2 (k = 14), the Strengths and Difficulties Questionnaire (SDQ; k = 12), DOF Scales for classroom observations (k = 11), the Social Skills Questionnaire (k = 10), Le Roux's Group Test for School Readiness (k = 8), and the Youth Self-Report (YSR; k = 6). Several studies also used versions of the Brunel Mood Scale (BRUMS; k = 6) and the SCBE.

Overall Effect and Participant Characteristics Influencing Effectiveness

The mean weighted overall effect size across all group comparisons (k = 318) was d_w = 0.59, indicating a moderate and statistically significant effect (95% CI [0.51, 0.67], p < .001). The test for heterogeneity yielded a highly significant result ($Q(df$ = 317) = 5294.84, p < .001), and the inconsistency index confirmed substantial between-study variation (I^2 = 97.23%). Accordingly, a random-effects model was applied.

The high degree of heterogeneity suggests that the intervention effects vary systematically across studies rather than being solely attributable to sampling error. This necessitated moderator analyses to examine contextual and conceptual factors that may account for this variability. These analyses are reported in the following sections. Table 1 provides an overview of average effect sizes disaggregated by outcome category.

Table 1

Summary of Overall Effects by Outcome Domain

Outcome Domain	*k*	*dw*	95% CI
Overall Effect	318	0.587	[0.507, 0.667]
Mental Problem Reduction	118	0.440	[0.107, 0.181]
Academic Skills	8	0.541	[0.057, 1.024]
Self-Awareness	6	1.277	[0.703, 1.852]
Self-Management	81	0.665	[0.510, 0.820]
Social-Awareness	5	0.240	[−0.383, 0.862]
Relationship Skills	32	0.612	[0.362, 0.863]
Problem-Solving Skills	1	0.834*	[−0.523, 2.192]
Motor Skills	59	0.750	[0.565, 0.934]
Physical Problem Reduction	8	0.366*	[−0.120, 0.852]

Notes. k = number of comparisons; d_w = weighted mean effect size.

* Not statistically significantly different from zero.

Age had no statistically significant effect on intervention outcomes ($QM(df = 1) = 1.49$, $p = .223$), indicating that the effectiveness of interventions was comparable across different age groups.

In contrast, significant differences emerged when comparing studies according to the presence of diagnosed conditions ($QM(df = 9) = 229.46$, $p < .001$). Interventions targeting children and adolescents with specific diagnoses such as developmental coordination disorder ($d_w = 1.17$, 95% CI [0.74, 1.61]), intellectual disabilities ($d_w = 0.86$, 95% CI [0.55, 1.16]), or emotional and behavioural difficulties ($d_w = 0.81$, 95% CI [0.42, 1.19]) yielded notably higher effects than those conducted with non-diagnosed populations ($d_w = 0.49$, 95% CI [0.39, 0.60]). Table 2 provides an overview of effect sizes by diagnostic category.

Table 2

Mean Weighted Overall Effect Sizes by Diagnosis

Indication	***k***	**d_w**	***95%* CI**
ADHD	54	0.587	[0.390, 0.784]
ASS	30	0.542	[0.269, 0.816]
DCD	11	1.175	[0.744, 1.610]
ID	24	0.857	[0.553, 1.160]
EBD	14	0.808	[0.424, 1.192]
LD	13	0.792	[0.415, 1.169]
PTBS	4	0.7648	[0.084, 1.446]
SOMATIC	7	0.329*	[−0.184, 0.843]
No Indication	161	0.495	[0.387, 0.603]
Indication	***k***	**d_w**	***95%* CI**

Notes. *k* = number of comparisons; d_w = weighted mean effect size. * Effect sizes not significantly different from zero. ADHD = Attention Deficit Hyperactivity Disorder, ASS = Autism Spectrum Disorder, DCD = Developmental Coordination Disorder, ID = Intellectual Disability, EBD = Emotional and Behavioural Difficulties, LD = Learning Difficulties, PTBS = Post-Traumatic Stress Disorder, Somatic = Somatic illnesses

In addition, the socioeconomic background of the study population significantly moderated effect sizes ($QM(df = 3) = 244.52$, $p < .001$). Interventions conducted with socioeconomically heterogeneous groups showed the largest effects ($d_w = 0.71$, 95% CI [0.61, 0.80]), followed by those with participants from middle-income ($d_w = 0.50$, 95% CI [0.29, 0.72]) and low-income backgrounds ($d_w = 0.23$, 95% CI [0.05, 0.40]). These findings highlight the relevance of social context for intervention outcomes and suggest that programmes implemented in mixed or more resourceful environments may offer more favourable conditions for behavioural and developmental change.

A mixed-effects model examined whether average effect sizes varied as a function of the continent in which the study was conducted. The overall test for moderation was statistically significant ($QM(df = 6) = 318.86$, $p < .001$), indicating that the effectiveness of movement-based interventions differed substantially across geographical regions. The analysis was based on 318 group comparisons and revealed significant between-study heterogeneity ($QE(df = 312) = 4090.44$, $p < .001$, $I^2 = 96.55\%$). As shown in Table 3, the highest mean effect sizes were observed for studies conducted in Africa ($d_w = 0.96$, 95% CI [0.65, 1.27]) and Asia ($d_w = 0.93$, 95% CI [0.80, 1.06]), both of which were statistically

significant and notably higher than effects observed in other regions. Studies conducted in Europe also showed significant and moderately strong effects (d_w = 0.64, 95% CI [0.50, 0.79]). In contrast, studies from North America yielded smaller but statistically significant effects (d_w = 0.24, 95% CI [0.11, 0.37]). For Australia (d_w = 0.18, 95% CI [−0.12, 0.48]) and South America (d_w = 0.20, 95% CI [−0.17, 0.57]), effects were not significantly different from zero. These findings suggest that contextual or systemic factors—such as educational infrastructure, implementation fidelity, cultural expectations, or access to support services—may influence the effectiveness of movement-based interventions across regions.

Table 3

Countries With Continent Effects

Continent Country	***k***	***d_w***	**95% CI**
Australia	**4**	**0.18***	**[-0.12, 0.48]**
Africa	**3**	**0.96**	**[0.65, 1.27]**
South Africa	1		
Tunisia	2		
Asia	**17.5**	**0.93**	**[0.80, 1.06]**
China	2.5		
Hong Kong	1		
Iran	5		
Israel	3		
Japan	1		
Pakistan	1		
Taiwan	3		
Turkey	1		
Europe	**22**	**0.64**	**[0.50, 0.79]**
Denmark	1		
Germany	3		
France	2		
Italy	5		
Kosovo	1		
Netherlands	2		
Norway	1		
Switzerland	6		
Serbia	1		
North America	**20.5**	**0.24**	**[0.11, 0.37]**
Canada	4		
USA	16.5		
South America	**2**	**0.20***	**[-0.17, 0.57]**
Brazil	2		

Notes. *k* = number of studies, d_w = weighted mean effect size. The study by Smith et al. (2020) included a sample from both China and the USA. * Effect sizes not significantly different from zero.

Influence of Methodological Quality on Effect Sizes

Several indicators of methodological quality were examined as potential moderators of effect sizes. Sample size was found to have a statistically significant influence on the magnitude of effects ($QM(df = 1) = 26.28$, $p < .001$), explaining approximately 8.72% of the between-study heterogeneity. Larger samples were associated with smaller effect sizes, as indicated by a negative slope in the meta-regression model (estimate = −0.0015, 95% CI [−0.0020, −0.0009]). This pattern is consistent with the tendency for smaller samples to overestimate effects due to sampling error or publication bias.

Study design also moderated the outcomes significantly ($QM(df = 3) = 211.07$, $p < .001$). Randomised controlled trials (RCTs) yielded a mean effect size of $d_w = 0.571$ (95% CI [0.475, 0.667]), while quasi-experimental designs (QEDs) produced higher estimates ($d_w = 0.679$, 95% CI [0.525, 0.834]). In contrast, single-case research designs (SCRs) resulted in a non-significant mean effect of $d_w = 0.239$ (95% CI [−0.157, 0.635]).

The type of measurement instrument also exerted a statistically significant influence on effect size estimates ($QM(df = 4) = 249.07$, $p < .001$). The strongest effects were observed in studies using external ratings ($d_w = 0.821$, 95% CI [0.656, 0.986]) and standardised tests ($d_w = 0.662$, 95% CI [0.551, 0.773]). Self-report measures yielded smaller effects ($d_w = 0.293$, 95% CI [0.141, 0.446]), while observation-based assessments, although suggestive of positive effects ($d_w = 0.290$, 95% CI [−0.038, 0.617]), did not reach statistical significance.

In contrast, blinding procedures did not significantly influence outcomes. The comparison between blinded and non-blinded studies yielded a non-significant moderation effect ($QM(df = 1) = 0.02$, $p = .898$), suggesting that the presence or absence of blinded assessments did not systematically bias the effect size estimates in the included studies.

These findings underline the importance of methodological design choices and measurement tools in interpreting intervention effectiveness. A summary of effect sizes by type of measurement instrument is provided in Table 4.

Table 4

Mean Weighted Overall Effect Sizes by Type of Measurement Instrument

Measurement Instrument	*k*	d_w	95% CI
Standardised Test	148	0.662	[0.551, 0.773]
External Rating	68	0.821	[0.656, 0.986]
Self-Report	77	0.293	[0.141, 0.446]
Observation	23	0.290*	[−0.038, 0.617]

Notes. *k* = number of comparisons; d_w = weighted mean effect size. * Effect size not significantly different from zero.

Influence of Implementation Modalities on Effectiveness

The professional background of the individuals responsible for delivering the interventions significantly moderated the overall effectiveness ($QM(df = 7) = 340.59$, $p < .001$). As shown in Table 5, the most substantial effects were achieved when interventions were conducted by programme developers themselves ($d_w = 1.470$, 95% CI [1.215, 1.726]) or by physical education teachers ($d_w = 1.000$, 95% CI [0.760, 1.240]). These findings suggest that specialised domain knowledge and a deep familiarity with the intervention model can substantially enhance implementation fidelity and effect magnitude. Trainers, many of whom likely had extensive experience with the respective programmes, also yielded robust effects ($d_w = 0.604$, 95% CI [0.474, 0.735]). Educational-

therapeutic professionals (d_w = 0.411, 95% CI [0.266, 0.556]) and classroom teachers (d_w = 0.343, 95% CI [0.186, 0.500]) achieved moderate and statistically significant effects, indicating their potential effectiveness when adequately supported. In contrast, studies involving other pedagogical personnel not otherwise specified yielded smaller and non-significant effects (d_w = 0.038, 95% CI [−0.287, 0.364]). Interestingly, interventions for which the facilitator role was not specified still showed a positive and significant mean effect (d_w = 0.651, 95% CI [0.319, 0.984]), although the lack of detailed reporting limits interpretability and calls for improved documentation in future research. These findings collectively underscore the importance of implementation expertise. When interventions are delivered by professionals with subject-specific training and experience, particularly those closely involved in programme development or sports pedagogy, outcomes tend to be considerably more effective.

Table 5

Mean Weighted Overall Effect Sizes by Type of Facilitator

Facilitator	*k*	d_w	95% CI
Classroom Teacher	61	0.343	[0.186, 0.500]
Physical Education Teacher	27	1.000	[0.760, 1.240]
Other Educational Staff	19	0.038*	[−0.287, 0.364]
Educational-Therapeutic Staff	76	0.411	[0.266, 0.556]

Notes. *k* = number of comparisons, d_w = weighted mean effect size. * Effect size not significantly different from zero.

A significant influence was also observed with regard to the setting of implementation (QM(df = 4) = 184.34, p < .001). Interventions conducted in extracurricular leisure contexts showed the strongest effects (d_w = 0.804, 95% CI [0.568, 1.041]), followed by those delivered in school (d_w = 0.577, 95% CI [0.474, 0.679]) and therapeutic settings (d_w = 0.405, 95% CI [0.216, 0.593]). Interventions in care-based settings, such as after-school childcare or residential care, yielded non-significant effects (d_w = 0.079, 95% CI [−0.438, 0.596]).

The mode of delivery was also a statistically significant moderator (QM(df = 2) = 214.18, p < .001). Group-based interventions produced larger average effects (d_w = 0.621, 95% CI [0.536, 0.706]) compared to individual formats (d_w = 0.367, 95% CI [0.151, 0.584]). This suggests that group-based delivery may not only be more resource-efficient but also more impactful, potentially due to additional peer-related social dynamics or motivation.

Regarding dosage, no statistically significant influence was found for the number of sessions (QM(df = 1) = 1.79, p = .181), although programme duration did significantly moderate effect sizes (QM(df = 1) = 6.02, p = .014). Longer interventions were associated with stronger effects, while shorter programmes tended to yield weaker outcomes (slope estimate = −0.0138, 95% CI [−0.0248, −0.0028]).

Finally, the level of prevention also moderated effectiveness (QM(df = 3) = 213.62, p < .001). Selective interventions targeting at-risk groups yielded the highest effects (d_w = 0.715, 95% CI [0.550, 0.881]), followed by indicated interventions (d_w = 0.604, 95% CI [0.473, 0.734]) and universal programmes (d_w = 0.497, 95% CI [0.371, 0.623]).

Differential Effectiveness by Outcome Domain

To account for the variability in intervention effects across different areas of impact, we conducted moderator analyses for those outcome domains that were sufficiently

represented in the data. Among the nine outcome categories identified, only four domains—motor skills, mental problem reduction, relationship skills, and self-management—included a sufficient number of effect sizes ($k \geq 30$) to allow for robust moderator testing. The remaining domains (academic skills, physical problem reduction, self- awareness, social-awareness, problem-solving skills) were excluded from moderator analyses due to limited data availability (see Table 1).

The overall moderator test across outcome domains was statistically significant ($QM(df = 9) = 228.89$, $p < .001$), indicating that the type of outcome variable itself functioned as a moderator of intervention effectiveness. This underscores the necessity of differentiating intervention effects according to the specific objectives and psychological constructs targeted by each programme.

In the following sections, the four outcome domains with sufficient empirical basis are examined in greater detail. For each domain, we present the mean weighted effect size, heterogeneity indicators, and results of moderator analyses relating to key implementation variables: level of prevention, delivery mode, intervention setting, and theoretical foundation.

Motor Skills

For the outcome domain motor skills, a total of 59 effect sizes were included in the meta-analysis. The mean weighted effect size was $d_w = 0.757$, reflecting a large and practically meaningful effect (95% CI [0.552, 0.962], $p < .001$). The test for heterogeneity indicated substantial between-study variability ($Q(df = 58) = 857.20$, $p < .001$), with an inconsistency index of $I^2 = 96.89\%$. Consequently, a random-effects model was applied.

To examine potential sources of heterogeneity, moderator analyses were conducted for four study characteristics. The level of prevention significantly moderated intervention effects ($QM(df = 3) = 73.20$, $p < .001$). The strongest effects were found for selective interventions ($d_w = 1.47$, 95% CI [1.02, 1.92]), followed by universal ($d_w = 0.70$, 95% CI [0.36, 1.05]) and indicated interventions ($d_w = 0.53$, 95% CI [0.27, 0.80]).

The mode of implementation also showed a significant moderating effect ($QM(df = 2) = 60.19$, $p < .001$). Group-based formats produced substantially larger effects ($d_w = 0.85$, 95% CI [0.63, 1.06]) than individual interventions, which yielded smaller and non-significant results ($d_w = 0.24$, 95% CI [−0.26, 0.75]).

With regard to setting, intervention effects differed significantly depending on the context ($QM(df = 4) = 48.11$, $p < .001$). Interventions delivered in school settings achieved the highest effects ($d_w = 1.07$, 95% CI [0.73, 1.41]), followed by those implemented in leisure environments ($d_w = 0.75$, 95% CI [0.18, 1.31]). Interventions conducted in therapeutic and care settings did not result in statistically significant outcomes.

Finally, the underlying intervention model significantly influenced the effectiveness of interventions ($QM(df = 5) = 61.67$, $p < .001$). The highest effects were observed when explicitly structured movement activities were combined with behavioural principles ($d_w = 1.03$, 95% CI [0.74, 1.33]). Moderate, statistically significant effects were also found for interventions using explicit movement in conjunction with cognitive-behavioural approaches ($d_w = 0.48$, 95% CI [0.14, 0.82]), and for those employing implicit movement in combination with cognitive-behavioural frameworks ($d_w = 0.65$, 95% CI [0.10, 1.20]).

These findings highlight the importance of structured and theory-informed psychomotor interventions for promoting motor skill development, particularly when delivered in school-based, group-oriented formats that incorporate clear behavioural or learning-theoretical components.

Mental Problem Reduction

The outcome domain mental problem reduction, comprising internalising and externalising symptoms, included 118 effect sizes. The mean weighted effect size was $d_w = 0.441$, reflecting a small to moderate and statistically significant effect (95% CI [0.307, 0.575], $p < .001$). Heterogeneity was substantial, as indicated by a significant Q-test ($Q(df = 117) = 1591.42$, $p < .001$) and a high inconsistency index ($I^2 = 97.80\%$). A random-effects model was therefore applied.

Four moderator analyses were conducted to explain this variability. First, the level of prevention significantly moderated the effects ($QM(df = 3) = 41.82$, $p < .001$). The largest effects were found for indicated interventions

(d_w = 0.52, 95% CI [0.29, 0.75]), followed by universal (d_w = 0.43, 95% CI [0.21, 0.65]) and selective interventions (d_w = 0.36, 95% CI [0.11, 0.62]).

Second, the implementation mode also showed a significant moderating influence ($QM(df = 2) = 41.83$, $p < .001$). Group-based interventions yielded higher and statistically significant effects (d_w = 0.46, 95% CI [0.32, 0.61]), while individual formats only approached significance (d_w = 0.33, 95% CI [−0.00, 0.66]).

Third, the setting significantly influenced the effectiveness of interventions ($QM(df = 4) = 35.90$, $p < .001$). Interventions delivered in school settings produced the largest and statistically significant effects (d_w = 0.48, 95% CI [0.32, 0.64]). Effects in leisure or therapeutic settings were not significant, and interventions in care settings yielded null effects.

Finally, the intervention model emerged as a highly significant moderator ($QM(df = 6) = 161.59$, $p < .001$). The strongest effects were observed in interventions using implicit movement combined with cognitive frameworks (d_w = 3.13, 95% CI [2.57, 3.69]). Significant, though smaller, effects were also evident for explicit movement paired with behavioural principles (d_w = 0.36, 95% CI [0.20, 0.51]) and explicit movement combined with cognitive-behavioural principles (d_w = 0.29, 95% CI [0.12, 0.46]). Interventions based solely on cognitive models or using implicit movement with behavioural principles did not result in statistically significant effects.

These findings indicate that movement-based interventions aiming to reduce mental health difficulties are most effective when implemented in schools, in group formats, and particularly when embedded in theory-informed models that integrate cognitive and embodied approaches. The notably strong effects of interventions combining implicit movement with cognitive frameworks suggest promising potential for targeted approaches in educational and therapeutic contexts.

Relationship Skills

The outcome domain relationship skills comprised 32 effect sizes. The mean weighted effect size was d_w = 0.604, indicating a moderate and statistically significant effect (95% CI [0.384, 0.823], $p < .001$). The heterogeneity test yielded a highly significant result ($Q(df = 31) = 309.33$, $p < .001$), and the inconsistency index was I^2 = 94.49%, suggesting pronounced variability across studies. A random-effects model was therefore employed.

Also four moderator analyses were conducted to account for this heterogeneity. The level of prevention was a significant moderator ($QM(df = 3) = 46.13$, $p < .001$). The largest effects were found in selective interventions (d_w = 0.97, 95% CI [0.58, 1.36]) and indicated interventions (d_w = 0.67, 95% CI [0.39, 0.95]). Universal interventions, by contrast, did not produce statistically significant effects (d_w = 0.12, 95% CI [−0.25, 0.50]).

A significant moderating effect also emerged for the implementation mode ($QM(df = 2) = 28.72$, $p < .001$). Group-based interventions showed the strongest effects (d_w = 0.65, 95% CI [0.38, 0.92]), while individual interventions yielded lower, yet still significant, effects (d_w = 0.50, 95% CI [0.11, 0.89]).

The setting likewise influenced intervention outcomes ($QM(df = 4) = 38.16$, $p < .001$). The largest effects were found for interventions delivered in leisure contexts (d_w = 1.38, 95% CI [0.46, 2.30]), followed by therapy settings (d_w = 0.68, 95% CI [0.32, 1.03]) and schools (d_w = 0.65, 95% CI [0.33, 0.97]). No significant effects were observed in care settings.

Finally, the intervention model emerged as a significant moderator ($QM(df = 4) = 42.66$, $p < .001$). The most robust effects were associated with implicit movement combined with cognitive-behavioural models (d_w = 1.22, 95% CI [0.70, 1.74]) and with implicit movement combined with behavioural principles (d_w = 0.50, 95% CI [0.21, 0.79]). Statistically significant effects also emerged for explicit movement paired with behavioural frameworks (d_w = 0.52, 95% CI [0.17, 0.87]), whereas effects from explicit movement with cognitive-behavioural models were non-significant.

These findings suggest that interventions aiming to enhance relationship skills are particularly effective when implemented in selective or indicated settings, when delivered in groups, and when grounded in implicit, experience-based movement approaches aligned with cognitive-behavioural theory. Leisure and therapeutic

environments may provide especially conducive contexts for such interventions.

Self-Management

The outcome domain self-management comprised 81 effect sizes. The mean weighted effect size was d_w = 0.662, indicating a moderate to large and statistically significant effect (95% CI [0.518, 0.806], p < .001). A test for heterogeneity revealed considerable between-study variability ($Q(df = 80) = 1827.03$, $p < .001$), with a high inconsistency index ($I^2 = 96.72\%$). A random-effects model was therefore applied.

Moderator analyses were conducted to explore the observed heterogeneity. First, the level of prevention was identified as a significant moderator ($QM(df = 3) = 84.52$, $p < .001$). Indicated interventions showed the highest effects (d_w = 0.84, 95% CI [0.58, 1.10]), followed by selective (d_w = 0.59, 95% CI [0.28, 0.90]) and universal interventions (d_w = 0.58, 95% CI [0.37, 0.79]).

The mode of implementation also significantly moderated outcomes ($QM(df = 2) = 81.14$, $p < .001$). Interventions delivered in group formats showed robust effects (d_w = 0.67, 95% CI [0.52, 0.81]), while those in individual formats yielded a null result (d_w = 0.00, 95% CI [−1.68, 1.68]).

A further moderating effect was found for the setting ($QM(df = 4) = 96.07$, $p < .001$). The highest effects were observed in therapeutic settings (d_w = .19, 95% CI [0.10, 2.27]) and in leisure contexts (d_w = 1.10, 95% CI [0.81, 1.39]). Interventions in school settings also yielded statistically significant effects (d_w = 0.50, 95% CI [0.34, 0.66]), while those in care settings showed no significant results.

Finally, the intervention model significantly moderated the effects ($QM(df = 4) = 101.56$, $p < .001$). The largest effects were associated with interventions combining implicit movement and cognitive-behavioural principles (d_w = 1.07, 95% CI [0.62, 1.52]), followed by implicit movement with behavioural frameworks (d_w = 0.93, 95% CI [0.35, 1.50]). Explicit movement combined with behavioural principles also resulted in significant effects (d_w = 0.69, 95% CI [0.53, 0.86]), whereas explicit movement with cognitive-behavioural models showed non-significant results.

In summary, interventions targeting self-management appear most effective when implemented in group formats, in leisure or therapeutic settings, and when they draw on implicit movement patterns embedded within behavioural or cognitive-behavioural frameworks.

Discussion

The aim of this meta-analysis was to investigate the effectiveness of movement- and body-oriented interventions as applied by psychomotor therapy and to derive practice-relevant implications. Across all outcomes, a moderate, practically significant overall effect of d_w = 0.59 was found for movement-based educational-therapeutic interventions. This finding is consistent with other studies, both in the area of mediator effects (psychosocial/mental outcomes) and in the area of functional-instrumental effects (Hale et al., 2023; Kemel et al., 2022; Spruit et al., 2016).

The effects of this meta-analysis are influenced by methodological aspects and implementation modalities. As expected, studies with higher quality (RCTs, larger samples) showed smaller effects than studies with quasi-experimental designs or smaller samples. This bias has also been observed in other reviews of effectiveness research (Beelmann, Pfost & Schmitt, 2014; Spruit et al., 2016) and is not viewed solely as negative. For instance, Beelmann et al. (2014) argue that the higher implementation quality in smaller studies might contribute to the more positive results observed.

The measurement instrument also influences effect size. Notably, self-reports show overall smaller effects than external ratings and standardised tests. This contradicts findings from other studies (e.g., Wilson & Lipsey, 2007), where self-reports yielded larger effects than other assessment methods. One possible explanation is that many of the included studies implemented interventions with behavioural elements. The primary aim of these interventions is behaviour change rather than cognition and affect. Affective changes are particularly suitable for assessment by self-assessment.

Longer interventions (over 10 weeks) show stronger effects than shorter ones (e.g., Sklad, et al., 2012). While functional-instrumental outcomes can improve relatively quickly with higher intensity, socio-emotional changes

usually require more time to develop and thus become evident mainly in longer interventions. This pattern is also consistent with the findings of Moschos and Polatou (2022).

The influence of the person conducting the intervention is well-documented in several meta-analyses and is also evident in the present analysis. While Spruit et al. (2016) and Sklad et al. (2012) reported no significant differences between facilitators with or without a pedagogical background, Beelmann et al. (2014) demonstrated that facilitators directly associated with the intervention programme achieved more pronounced effects. In the present analysis, it was found that not only programme developers and physical education teachers but also trainers were more successful than educational-therapeutic professionals and teachers. This finding could be interpreted to suggest that facilitators with high, specific expertise are able to achieve greater effects. This interpretation aligns with Wilson and Lipsey (2007), whose data show that a high level of implementation quality leads to higher effects in prevention programmes aimed at reducing aggressive and disruptive behaviour. Specific expertise related to the intervention appears to be advantageous for the success of movement-based, educational-therapeutic interventions. It is likely that such expertise is also associated with a more accurate alignment between the needs of the clients and the intervention. This further underscores the consistency of the findings of the present analysis, which indicate that interventions targeting children and adolescents with specific diagnoses demonstrated significantly higher effects compared to those targeting populations without specific diagnoses. We assume that in interventions targeting populations with a diagnosis, the need for support has been clearly defined, which may explain why the previously mentioned alignment between the needs of the clients and the intervention was better achieved.

The very high effect associated with physical education teachers can be explained by the fact that studies with physical education teachers as facilitators focused heavily on the outcome of self-management. This category included exclusively measures of executive functions. There is substantial evidence that executive functions can be effectively promoted through movement-based interventions (e.g., Liang et al., 2021; Sung et al., 2021; Welsh et al., 2021), which likely contributes to the large effect observed. It is also assumed that trainers are likely to implement existing programmes. It can be assumed that these programmes are theoretically well-founded, methodologically structured, and have clearly defined goals.

For four of the registered outcomes, it was possible to determine which type of intervention demonstrated the greatest effectiveness. The combination of *physical activity* and learning theory-based methods proved to be most successful for the outcome *motor skills* (d_w = *0.76, 95% CI [0.55, 0.96]*). This represents a functional-instrumental effect, which appears plausible given that the *physical activity* component directly targets *motor skills*. Motor learning theories also emphasise the importance of immediate feedback to reinforce reafferent information for adjusting motor patterns (Schnabel & Krug, 2021). Furthermore, repetition is a key aspect of motor learning (ibid.), and its implementation is particularly likely when behavioural structuring principles – such as modelling and reinforcement – are integrated into *physical activity* settings. Additional evidence, such as from the Neuromotor Task Training (Schoemaker & Smits-Engelsman, 2005; Smits-Engelsman, 2013), also highlights the relevance of feedback and suggests that children with motor difficulties benefit more from an external focus of attention than from internally directed bodily awareness. These findings are well reflected in the present meta-analysis, where interventions combining explicit physical movement with behavioural principles produced the strongest effects.

Body- and movement-oriented activities showed the highest effectiveness for outcomes classified under mediator effects, particularly for mental problem reduction (d_w = 0.44, 95% CI [0.31, 0.57]). These activities were most effective when combined with cognitive methods—typically in the form of structured reflection or reappraisal strategies. In such cases, the movement component serves as a somatic anchor or access point for addressing implicit emotional or cognitive schemas, which are subsequently made explicit and processed via verbal or metacognitive means. This logic aligns with theories of embodied cognition, which assume that bodily action and

perception provide essential scaffolding for mental state access and modulation (e.g. Shapiro & Stolz, 2019). *Interventions integrating implicit movement and cognitive components in particular demonstrated the strongest effects in this domain (d_w = 3.13, 95% CI [2.57, 3.69]), indicating the potential of experiential and indirect methods for addressing internalising and externalising symptoms.*

For the outcomes self-management (d_w = 0.66, 95% CI [0.52, 0.81]) and relationship skills (d_w = 0.60, 95% CI [0.38, 0.82]), both of which are situated within the framework of Social and Emotional Learning (SEL), the additional integration of cognitive and learning theory-based elements proved particularly effective. This is consistent with the hierarchical organisation of SEL, in which self-management is considered a precursor to relationship skills. This sequence was mirrored in the present analysis, where the effect for self-management slightly exceeded that for relationship skills, and both outcomes benefited most from interventions that incorporated cognitive-behavioural modelling and explicit instruction. The combination of cognitive and learning-theoretical components aligns well with the integrated model of emotion and cognition in social information processing as proposed by Lemerise and Arsenio (2000), which emphasises the role of emotion regulation, perspective taking and attributional reasoning in social behaviour.

Moreover, moderator analyses revealed that group-based formats and school-based settings yielded particularly robust effects across these SEL-related outcomes, underscoring the importance of socially embedded and ecologically valid implementation contexts.

Limitations

Although this meta-analysis provides a substantial contribution to the field, as with all meta-analyses, the quality of the included studies remains a limiting factor. The present dataset also exhibits a high degree of methodological heterogeneity. The interventions used in the included studies are highly diverse in content and are based on a wide range of, at times, divergent theoretical assumptions. A more detailed analysis of the content of these interventions would therefore provide an important complement to the observed effects and pattern of findings. Another limitation is the uneven distribution of outcome categories. Only the outcomes *motor skills, mental problem reduction, self-management*, and *relationship skills* could be analysed in more detail. The outcome category of *self-management* is well represented with *k = 55*. However, it is almost exclusively reflected by measurements of executive functions, particularly inhibition. As a result, the large effects observed in this category are somewhat relativised.

Practical implications

The findings of the present meta-analysis reveal essential implications for psychomotor therapy, particularly in the domains of motor skills, social and emotional learning (SEL), and mental health. The practical implications comprise:

- **The integration of movement with cognitive and learning-theoretical components is effective and should be adapted to the target domain** (motor skills, SEL, or mental health).
- **The selection of intervention methods should be tailored to the specific focus area** (e.g., immediate feedback and repetition for motor skills; reflective and cognitive components for SEL and mental health).
- **Interventions show higher effectiveness when aligned with the clearly defined support needs of participants**, underscoring the importance of comprehensive diagnostic assessment and individualisation.
- **The expertise of the facilitator is a crucial factor** in intervention success, supporting the prioritisation of trained professionals with specific knowledge in both movement and **learning-theoretical** approaches.

Conclusion

The present study contributes to the body of effectiveness research on movement- and body-oriented interventions as applied by psychomotor therapy. By systematically synthesising evidence from diverse studies, this meta-analysis reveals a moderate and practically significant overall effect size, highlighting the efficacy of interventions that combine physical activity with cognitive and learning-theoretical components. The findings

underscore the importance of methodological considerations, such as the duration and quality of interventions, and they emphasise the influence of facilitators' expertise and the alignment of intervention content with the specific support needs of the participants.

The comprehensive nature of this meta-analysis strengthens the evidence base for psychomotor therapy and provides a nuanced understanding of how movement-based interventions can be optimally designed and implemented. Specifically, the integration of movement and cognitive elements appears to enhance both functional-instrumental outcomes, such as motor skill development, and mediator effects, such as improvements in mental health and social-emotional competencies. The findings also highlight the critical role of tailored interventions that respond to clearly defined individual needs, as well as the necessity of high-quality implementation by well-trained professionals.

Nevertheless, this meta-analysis is subject to certain limitations. The quality and methodological heterogeneity of the included studies, as well as the diversity of intervention content and theoretical assumptions, limit the generalisability of the findings.

In summary, this study not only affirms the effectiveness of movement-based educational-therapeutic interventions but also offers practical guidance for their application. These findings can inform future programme development, professional training, and research in the fields of psychomotor therapy and educational interventions.

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Supplementary material

List of included studies

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Reducing and Enhancing Visual Feedback: A mixed Strategy to Improve the Learning and Rehabilitation of Handwriting

Jean-François Connan*/**

* ISRP, Marseille, France ** CLLE, Université de Toulouse, CNRS, Toulouse, France
Contact: jfconnan@isrp.fr

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ABSTRACT

The acquisition of handwriting relies on complex sensorimotor coordination, involving the progressive integration of visual and proprioceptive feedback. This article explores the impact of visual feedback modifications on handwriting motor control. Different strategies are examined according to the nature of the modification (adding or reducing information) and the timing of its application (during or after movement). We focus on two main types of visual feedback modifications. The first involves reducing visuospatial information during movement to promote predictive control based on internal representations. The second involves enhancing kinematic information during or after movement to support evaluation, correction, and consolidation of learning. Drawing on literature, we discuss how these strategies can influence handwriting motor control and learning. We then present a series of studies (previously published) conducted by our team, investigating the combined use of reduced and augmented visual feedback in both children and adults. These studies suggest that combining reduced and augmented visual feedback may be of value in educational and therapeutic settings, especially when delivered through the application of interactive tools like "Light Painting" and "e-trace". Findings from our studies suggest that alternating reduced and enhanced feedback improves handwriting fluency, speed, and pressure regulation while reducing reliance on visual control. However, the transfer of these effects to conventional handwriting remains limited, especially in children. Further research is needed to optimize the long-term retention of these benefits.

Introduction

Learning to write is a fundamental aspect of a child's development, essential not only for academic achievement but also for communication and autonomy, and it requires complex sensorimotor coordination (Bara & Morin, 2013). The efficient integration of visual and proprioceptive feedback is essential for acquiring this skill. The mechanisms by which these feedback sources are processed, along with the informational content they deliver, change progressively with age and writing skill acquisition (Zesiger et al., 2000). Between the ages of 6 and 8 years, motor control relies primarily on visuospatial

information derived from the emerging handwriting trace. At this stage, movement is mainly guided by visual input, while proprioceptive contributions remain limited (Fleishman & Rich, 1963). Proprioceptive sensitivity is not yet fully developed before the age of 7 (Laszlo & Bairstow, 1984). As a result, proprioceptive information has not been sufficiently consolidated to support the formation of stable internal representations capable of guiding action. With training, control gradually becomes more predictive, relying primarily on motor information related to movement execution (for a review, see Palmis et al., 2017; Grosberg & Paine, 2000). Around age 10, a balance emerges between predictive and feedback-based control mechanisms. This development supports smoother and faster handwriting, which tends to become increasingly automated, albeit sometimes at the expense of legibility (Thibon et al., 2018). Handwriting acquisition thus involves a progressive shift from a control mode based on sensory feedback to one grounded in internal predictive models. This transition can be challenging for some children. One possible strategy to support this process involves modifying sensory feedback itself (Biotteau et al., 2019). This article aims to review current strategies for modifying visual feedback during handwriting, through either reduction or augmentation, and to discuss their effects on motor control and learning, illustrated by a selection of previously published studies conducted by our team. The following sections are organized around this central issue.

Enhanced feedback

"Enhanced feedback" refers to extrinsic information generated by an external device that complements or reinforces the intrinsic sensory feedback arising from the individual. Various types of supplementary information can be provided, regardless of the sensory modality involved. Typically, two main types of feedback are distinguished: knowledge of results and knowledge of performance.

"Knowledge of results" refers to the outcomes of the action, such as the visible trace left on the page. It facilitates learning by confirming whether the intended outcome has been achieved and indirectly contributes to the stabilization of movement quality (Salmoni et al., 1984; Schmidt & Lee, 2018). Knowledge of results offers several advantages: it enhances learner motivation, reinforces learning, aids in error correction, and supports strategic adjustments for future attempts. One of its key benefits is its simplicity—particularly for novices—as it targets concrete, observable, and measurable outcomes. However, knowledge of results has qualitative limitations: it provides no information about how the movement was executed, which can hinder fine-grained performance improvements. Additionally, this type of feedback is delivered only after the action has been completed.

By contrast, "knowledge of performance" focuses on the quality of the movement itself, including the technical characteristics of motor execution. Knowledge of performance relates to gesture dynamics, such as joint positioning, movement sequencing, speed, and acceleration. It allows for movement refinement through the provision of detailed information about execution, which is especially beneficial for mastering complex motor skills. Knowledge of performance enables specific corrections, provided the information is not overly complex or abundant—particularly for beginners, for whom excessive detail may result in cognitive overload and decreased performance (Weil & Amundson, 1994). Unlike knowledge of results, knowledge of performance may be delivered either in real time during the task or afterward.

Modifying the visual perception of the trace

The rise of digital tablets offers new opportunities in handwriting acquisition by enabling real-time or delayed modifications of visual perception. Tablets can enhance sensory feedback by, for example, coupling musical cues with handwriting movement (Danna & Velay, 2017) or visually altering the resulting trace. Augmented feedback may facilitate the learning of handwriting or assist individuals who struggle with this skill (Biotteau et al., 2019).

While augmented feedback is often conceptualized as the addition of supplementary information, it is also possible to modify the perception of the trace by reducing specific visual cues to optimize handwriting control. This paper aims to describe various techniques for modifying visual perception during handwriting and to examine the demonstrated or hypothesized benefits and drawbacks of each approach with respect to handwriting performance.

Adding visual information

Vision is a sensory modality that is already heavily relied upon during handwriting control, particularly in the early stages of learning. As such, adding visual information after the movement seems to be a straightforward and accessible strategy. Søvik and Teulings (1983) investigated the effects of additional visual feedback after the movement on writing speed and fluency in a group of twelve 11-year-old children performing graphomotor tasks. The results showed an improvement in writing speed, though not in fluency. Importantly, spatial accuracy was not negatively affected. Over the past decade relatively few studies have specifically examined the effects of adding visual feedback after the movement. More recently, Bonneton-Botté et al. (2020) tested several types of enriched visual feedback focused on the product of writing. These included feedback on letter shape and size, stroke direction and order, and pen lifts. Their system also included a dynamic model that allowed the child to compare their own handwriting with a reference template. Results showed an overall improvement in handwriting scores, especially among children with average baseline performance. However, not all types of visual modifications were tested independently, making it difficult to identify which specific variables were influenced by each feedback component.

Visual information can also be provided during the act of writing. However, this can impose a cognitive load on the writer, especially since visuospatial cues are already heavily engaged, particularly when the motor gesture is not yet fully automatized (Danna & Velay, 2015). To overcome this limitation, several strategies have been developed. One involves modulating the colour or thickness of the ink based on dynamic or kinematic parameters (Danna & Velay, 2015). Loup-Escande et al. (2017) examined the effects of supplementary visual feedback delivered with a graphic tablet on cognitive load, user experience, and gestural performance in a calligraphy learning task in both novice and expert calligraphers. Two types of feedback were compared, colour modulation based on writing speed and thickness modulation based on pen pressure, mimicking the ink flow of a fountain pen. Results showed no significant difference in cognitive load between expertise groups, but the pressure-based feedback generated a higher mental load than coloured velocity feedback. No differences were found in user experience. Regarding gestural performance, experts were faster than novices, and coloured velocity feedback induced higher writing pressure than pressure-based feedback. In children, Bartov et al. (2023) investigated the effect of real-time augmented visual feedback in 27 participants aged 7-12 years diagnosed with developmental coordination disorder (DCD). Parents provided informed consent, and participants completed the DCDQ before baseline assessments, which included the MABC-2, the Hebrew Handwriting Evaluation, and a tablet-writing task administered individually in a quiet room. The intervention consisted of eight weekly 20-minute sessions. Each session began with a brief practice in which children traced five non-letter shapes for 20 seconds each to experience the principle of colour feedback according to pen pressure (e.g., red for excessive pressure, black for appropriate pressure). They then copied an excerpt of 47 words from a handwriting assessment (or for 5 minutes, whichever came first) twice, once with augmented visual feedback and once without (black trace). A within-subject design was used, with the order of conditions randomly counterbalanced across participants. Results showed reduced variability and more effective pressure regulation with augmented feedback, and these improvements persisted when writing new texts after the intervention.

Reducing visual information

The aim of reducing visual information during handwriting is to limit motor control based on visuospatial cues tied to the graphic trace and to promote greater reliance on proprioceptive and kinaesthetic inputs associated with movement execution. This reduction can take several forms: complete suppression of vision (e.g., eyes closed), occlusion of the moving hand, or partial or total removal of the graphic trace.

Chartrel and Vinter (2006) investigated the role of visual information during the production of isolated cursive letters in 48 children (aged 8–10 years) versus adults. Participants copied various cursive letters under three conditions: full vision, partial vision (hand and trace hidden), or no vision (eyes closed). When visual feedback

was absent, adults showed only increased pen pressure. In contrast, children compensated by increasing movement length, movement velocity, and pressure, while maintaining constant movement duration. These results suggest that the disruption observed in younger children reflects an immature motor control system still dependent on visual feedback, whereas older participants likely rely on more automated, internally driven control mechanisms.

Portier and Van Galen (1992) explored the effects of suppressing both hand and trace visibility in a task involving the acquisition of Arabic characters in 36 adults. They manipulated visual feedback: immediate feedback, postponed feedback (static display after the trial), or both. Interestingly, their results revealed improved writing speed and fluency, suggesting that reducing visual input may foster motor automatization. However, legibility was not evaluated, and the authors cautioned that substantial visual deprivation might interfere with other aspects of motor control—such as hand posture or pen positioning.

To avoid the drawbacks of complete visual suppression, a more refined approach consists in partially or totally reducing the visibility of the written trace. In these situations, the reduced availability of visual cues during the act of handwriting creates a dissociation between feedback related to the process and that related to the product of writing. The idea is to direct the writer's attention toward the ongoing movement, while delaying access to the outcome. This strategy is expected to improve motor encoding and reduce visual overreliance, potentially enhancing the legibility of the produced trace. Bara and Bonneton-Botté (2021) tested a condition in which the writing trace was entirely suppressed, while preserving spatial cues from the hand and pen position. In preschool-aged children, this manipulation led to improvements in kinematic measures, although a decrease in spatial accuracy was observed. This reduction in graphic quality appears to be linked to the absence of delayed visual feedback, which prevented children from evaluating the correctness of their output. These findings underscore the importance of external visual cues in calibrating developing motor representations.

To counter the loss of spatial precision, Connan et al. (2021) proposed partial suppression of the trace using a digital stylus and tablet. In this approach, the trace is only displayed for a very short time—typically a tenth of a second—so that the writer cannot perceive the global shape of the letter while writing. Instead, a short trailing segment (resembling a "snake") follows the stylus tip (see video 1). The full trace becomes visible only after the movement is complete, allowing for comparison with a reference model.

Supplementary Video 1

In an initial study with adults, this method was found to produce positive effects during training phases. However, these benefits disappeared in post-tests conducted under standard writing conditions. This drop-off may be due to a guidance effect (Ronsse et al., 2011), where learners become reliant on external feedback rather than developing internalized control based on intrinsic sensory cues (Sigrist, 2013). The specificity-of-learning hypothesis (Proteau et al., 1998) also offers an explanation: when the modified visual feedback dominates during practice, it may hinder the integration of other relevant cues such as proprioception. These findings raise critical questions regarding the optimal frequency and sensory modality through which augmented feedback should be delivered, depending on the nature of the information to be conveyed.

Overall, this body of research converges on the idea that reducing visual feedback during handwriting affects sensorimotor resources in different ways depending on the writer's age and stage of motor development. While it may serve as a lever to promote automatization, it also introduces certain limitations, particularly in terms of spatial precision and trace legibility, especially in younger writers.

Combining reduced and augmented visual feedback

Combining visual feedback reduction during the action with enriched feedback delivered after the action represents a promising strategy. These two types of feedback engage distinct cognitive processes and may interact in complex ways. For example, Blandin et al. (2008) showed that terminal feedback can reduce dependency on concurrent feedback by limiting cognitive

processing demands during movement execution. Concurrent feedback provides learners with immediate visual guidance to control the movement, while terminal feedback promotes deeper processing and supports the development of more autonomous control. Across the studies we conducted, we aimed to exploit this complementarity by developing an application inspired by the perceptual effects of Light Painting, designed to integrate these two types of feedback within a single framework.

Light Painting

Light painting is an artistic technique that merges photography and movement (Baitinger & Ouaki, 2012). It involves capturing the trajectory of a handheld light source through long-exposure photography in a dark environment. During the action, the performer perceives only a partial trace of the movement, as the moving light creates a visible trail. The length and intensity of the trail reflect the speed and dynamics of the gesture. After the movement, the resulting photograph displays the full trajectory and offers both a visual representation of the shape and insight into movement velocity via variations in light intensity (see Figure 1).

Figure 1 *Example of a photograph obtained using light painting (LP) with patients. Variations in light intensity indicate changes in movement speed.*

This technique alters visual feedback during writing in three main ways compared to conventional handwriting: (1) movements are broader; (2) they are performed in a vertical plane; and (3) they are executed in the air, without physical contact with a writing surface.

To investigate its potential, we tested several Light Painting-based setups in both adults (Connan et al., 2024) and children (Connan et al., 2023) during tasks involving the learning of novel letter forms. In an initial study with 16 adults, participants used a Light Painting device to draw in the air with their arm, while standing in front of a 1.2 m² frame. The control group completed the task on a whiteboard using a marker. Pre- and post-tests were conducted in a more handwriting-like setup, with participants seated and using an ink stylus on a paper fixed to a digital tablet (frame size: 16 cm²). Data were analysed using linear mixed models with group (Light Paining vs. Control) and time (Pre-test vs. Post-test) as fixed factors, and participants as a random factor. Dependent variables included writing speed, fluency, mean pressure, letter size, and spatial accuracy. Results showed that following Light Paining training, participants wrote faster, applied less pressure, and produced larger characters. However, spatial accuracy was not significantly improved in either group. In a second experiment, the Light Painting condition was made more like standard handwriting: participants were seated and used a luminous stylus (without ink) to write within a 20 cm² frame on a digital tablet. The control condition involved conventional handwriting using a pen on paper in the same spatial layout. Testing procedures were identical

to the first experiment. As in Experiment 1, data were analysed using linear mixed models. Results revealed faster, more fluent movements, larger character size, and reduced pressure during Light Painting training. In this case, spatial accuracy improved post-training, regardless of condition. However, the fluency gains observed during Light Painting training did not persist in the post-test. This second protocol was then replicated with children in Grade 3 to evaluate whether Light Painting could support learning. However, the expected benefits were not observed. While performance improved during Light Painting training, the gains did not transfer to standard handwriting tasks. One possible explanation is that children rely more heavily on visual input, increasing the risk of feedback dependency. Reducing feedback frequency might enhance learning outcomes.

Light Painting was also tested in a rehabilitation protocol involving an 8-year-old child with DCD and severe dysgraphia, who exhibited very low motivation for writing. The program included 12 sessions—6 using Light Painting (in both standing and seated positions) and 6 using standard handwriting conditions. The intervention was structured in three phases, progressing from large-scale movements to typical handwriting spaces. For each phase, two sessions involved Light Painting and two used conventional tools (e.g., ink pen, marker). Our approach combined Light Painting and explicit letter instruction and metacognitive strategies (e.g., self-evaluation, self-instruction, problem-solving) to help the child interpret the feedback and monitor the progress. Two exercise modules were presented in each session: one focused on pre-writing motor patterns (based on Athènes et al., 2004; Danna et al., 2011, 2016), and the other focused on isolated letter and bigram learning, grouped by shared motor features. For each variable, we calculated the percentage of change between the sessions with and without Light Painting. These percentages for the sessions with and without light painting were compared using a Wilcoxon test. Positive effects were observed in writing speed and fluency. However, no significant differences between Light Painting and control sessions were found in terms of length, pressure, or legibility. The child's BHK score improved at the end of the 12-session protocol. Subjectively, parents reported increased spontaneity in writing, and the child expressed greater ease—except when writing quickly. Although this is a single case study with inherent limitations, it highlights the potential of Light Painting-based feedback in handwriting rehabilitation. Further validation using single-case experimental designs (SCED) with larger samples is needed.

In summary, Light Painting places the child in a novel situation, significantly different from conventional handwriting. This novelty can enhance engagement and rebuild confidence in children who experience handwriting difficulties. The act of drawing with light can even be perceived as playful. However, this novelty may limit the transfer of learning effects to typical handwriting conditions, especially in children. Additional research is needed to optimize Light Painting use and reduce feedback dependency.

The "e-trace" Application

To create a learning environment closer to traditional handwriting conditions, we developed a digital version of the light painting method for use on tablet devices. This application allows for precise manipulation of visual feedback, both by reducing information during the action and by adding informative cues after the action. Unlike Light Painting, which combines both modifications in a single trial, the e-trace application makes it possible to alternate these two types of feedback across trials. In this design, one trial implements the "snake" mode, where visual feedback is partially suppressed during movement: only a short trailing segment of the trace follows the stylus tip, and the full trace becomes visible after the movement is completed. The alternate trial displays the full trace during writing, but after the action, additional visual information is presented, such as movement kinematics (see figure 2). Alternating these conditions ensures that each type of feedback is delivered only 50% of the time. This lower frequency is designed to encourage the development of more stable internal representations that are less dependent on any single type of external feedback. This approach aligns with studies showing that reduced feedback frequency supports better retention and generalization (Kovacs & Shea, 2011; Winstein, 1991).

Figure 2 *Enriched postponed condition. Red dots indicate abnormal velocity peaks on the trace, revealed after the trial. These peaks, identified using the SNvpd index (Danna et al., 2013), were computed by comparing velocity signals filtered at 10 Hz and 5 Hz (Butterworth low-pass filter). They correspond to areas where handwriting was less fluent.*

We first tested this mixed-feedback strategy in adults during a task involving the learning of novel pseudo-letters with the non-dominant hand. Results indicated that this combined and alternating visual feedback approach was promising to facilitate short-term transfer of performance to more conventional handwriting conditions (Connan et al., 2023). Participants who trained with mixed modification demonstrated faster and more fluent writing, along with reduced pen pressure, immediately after the training. The control group used the same tablet setup but received no visual feedback modification. Unfortunately, these benefits did not persist in a delayed post-test conducted the following day, suggesting that while the strategy enhances immediate performance, long-term retention may require additional support. Nevertheless, the alternating feedback condition led to better transfer and reduced dependence compared to isolated feedback modification. This supports the hypothesis that alternating mixed feedback can foster more autonomous control and better generalization than repeated exposure to a single type of augmented feedback. We next asked whether this strategy could benefit children with handwriting difficulties.

To address this question, we designed an experimental rehabilitation protocol for children with dysgraphia, based on the mixed modification. All participating children met DSM-5 criteria for developmental coordination disorder (DCD) with associated dysgraphia, defined as either ≤ -2 *SD* in one BHK score or ≤ -1.5 *SD* in both. Participants were enrolled from the end of Grade 1to Grade 5. We made some modifications to bring the setup closer to Light Painting conditions (See supplementary video 2). Given the diverse mechanisms underlying dysgraphia, this protocol focused on difficulties in handwriting motor control. The program was delivered on a Windows® tablet using a custom-built application developed in Octave® (a clinical version is currently under development).

Supplementary Video 2

The twelve-week intervention included six sessions using visual feedback modification and six control sessions without it. The structure of the training followed the same principles as the Light Painting case study and included two modules: one for pre-writing motor training and another for explicit instruction of isolated letters and bigrams, grouped according to shared motor characteristics. We also incorporated evidence-based educational strategies known to improve handwriting outcomes: explicit instruction, metacognitive strategies (self-instruction, self-evaluation, problem-solving). In each session, children were explicitly trained in metacognitive techniques to help them assess their own handwriting and analyse the feedback provided by the application. Results showed a modest but statistically significant advantage in favour of the alternating mixed feedback condition. Globally, children also demonstrated improvements in both legibility and handwriting frequency on the BHK test administered at the end of the intervention. A manuscript on this study is currently being prepared for submission.

It is important to note several limitations. The e-trace protocol was designed as an experimental tool, alternating feedback and control sessions to isolate effects. A clinical adaptation of this protocol would likely involve different timing and frequency for feedback delivery. Based on our data and existing literature, a gradual decrease in augmented feedback toward the end of the intervention may enhance long-term learning outcomes. Another limitation is that no control group was included to specifically verify the unique effectiveness of the

rehabilitation protocol, making it difficult to fully disentangle its effects from other potential contributing factors.

Conclusion

The digital age offers undeniable opportunities for enhancing handwriting control and supporting motor-based re-education through perceptual modifications. These tools allow for both the enrichment and reduction of sensory feedback, providing innovative approaches to handwriting learning and rehabilitation. In particular, mixed visual feedback strategies, which combine feedback suppression during action with augmented feedback after action, have demonstrated clear benefits, notably in improving handwriting fluency, speed, and pressure regulation.

The shared goal of these perceptual modification methods is to support the shift from a control mode based on the product of writing (i.e., the visible trace) to one based on the process of writing (i.e., the movement itself), as suggested by Biotteau et al. (2019). In the medium term, it may be advantageous to explore the integration of multiple sensory feedback modalities, such as visual and auditory channels, to evaluate their potential synergistic effects on learning and motor recovery.

However, modifying visual perception through digital tablets is not without limitations. Excessive reliance on augmented feedback may foster dependency, thereby hindering learners' autonomy and self-monitoring skills. Furthermore, the transferability of benefits to standard handwriting conditions remains limited, especially when feedback is highly specific or artificial. It is therefore crucial to optimize feedback design, ensure that gains translate to conventional writing tasks, and assess potential unintended effects.

One such unintended effect involves the low-friction surface of touchscreens, which alters the dynamics of handwriting. Studies have shown that writing kinematics on smooth tablets differ significantly from paper-based writing, particularly in children (Alamargot & Morin, 2015; Gerth et al., 2016a, 2016b). Alamargot and Morin (2015) suggested that reduced friction may impair proprioceptive control during handwriting, especially in children whose fine motor skills are not yet fully developed. To mitigate these effects, it is possible to use overlay films that increase the surface friction of tablets.

In conclusion, tablet-based therapeutic tools are not intended to replace handwriting with pen and paper, nor to substitute for the role of teachers or therapists. Rather, they are meant to serve as targeted, temporary aids that can be incorporated into existing pedagogical or therapeutic frameworks. Their purpose is to support struggling writers in developing the motor control necessary for more efficient and autonomous handwriting.

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Section 1 | Foundations, innovations, and frontiers in Psychomotricity

Psychomotricity in German-speaking Countries

A Three-Country Comparison

Melanie Nideröst*, Susanne Muzler**, Jörg Schmid***

*University of Teacher Education in Special Needs, Zurich **Somatic Movement & Dance, www.somatic-movement.at ***University of Applied Science Emden/Leer

Contact: melanie.nideroest@hfh.ch, J.Lemmer.Schmid@HS-Emden-Leer.de

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ABSTRACT

Psychomotricity has long been established in German-speaking countries, yet systematic, data-based descriptions of the profession have been lacking. This study aimed to provide the first comparative overview of psychomotor training pathways, work contexts, and professional practices in Austria, Germany and Switzerland. Data were drawn from the Questionnaire of European Psychomotricity (QuEP), an international survey developed by the European Forum for Psychomotricity and included responses from 545 practitioners. Descriptive statistics, chi-square tests, ANOVAs, and qualitative analyses of open-ended responses were applied to identify national characteristics and cross-country differences. Results revealed clear contrasts in educational formats and traditions. In work contexts Switzerland showed a high employment stability, longer weekly working hours, and a strong focus on primary school children in school-based settings; Austria was characterized by higher self-employment, shorter working hours, and a broader client age range in pedagogical contexts; Germany occupied an intermediate position with stronger therapeutic orientations and more frequent work with adults. In professional practice, Austria and Germany reported larger group formats, whereas Switzerland favoured individual and small-group interventions, with intervention foci differing accordingly. Despite national particularities, a common core was observed across all three countries, including an emphasis on body awareness, self-concept, emotional, and gross motor skills.

Introduction

The international literature on psychomotricity presents a wide spectrum of definitions, ranging from clinically oriented psychomotor therapies to pedagogical approaches focusing on developmental processes (EFP, 2025c; Fischer, 2024; Krus & Jasmund, 2015; Kuhlenkamp, 2022; Lange, 2010; Scialom et al., 2011). At its core, psychomotricity is grounded in a holistic view of the human being, emphasizing the unity of body, mind, and lived experience. It examines how cognition, emotion, and movement interact in shaping development and health within a psychosocial context. Practitioners, variously referred to as psychomotricians or psychomotor therapists, apply movement- and perception-based

interventions to foster self-perception, motor competence, emotional regulation, and social interaction. They integrate knowledge from psychology, pedagogy, educational sciences, medicine, and neuroscience to support individuals with developmental, psychosocial, or motor difficulties (EFP, 2025c).

The origins of psychomotricity in German-speaking countries can be traced to pioneers who disseminated their ideas through apprenticeship (German: "Meisterlehre") and close professional exchange (Seewald, 1991). The first pioneers in Germany were Charlotte Pfeffer, Ingrid Schäfer, and Ernst Jonny Kiphard (Irmischer, 1989). In the following decades, their practical approaches were further developed by other pioneers and gradually received theoretical grounding in so-called "approaches." Moreover, the initial focus on children and adolescents was extended to cover the entire lifespan. In Switzerland, psychomotricity was established in the 1960s through the collaboration of Suzanne Naville with Prof. Juan de Ajuriaguerra, who provided a scientific foundation for her practical work with children. After moving to Zurich, Naville introduced psychomotricity to the German-speaking part of Switzerland and, with the support of Dr. Alfons Weber at the Children's Hospital, was able to conduct the first therapy sessions (Macchi, 2019). In Austria, psychomotor concepts were introduced by Eva Gräsel and Julika Ullmann, inspired by their participation in the congress Child and Movement in Berlin, where Tilo Irmischer and Friedhelm Schilling led the working group on Motologie (Ullmann, 2003).

Building on this foundation, psychomotricity was consolidated through training structures, university-level programs, and professional associations. In Germany, a master's program in "Motologie und Psychomotorik" was established in 1982 in Marburg and later complemented by a bachelor's program in Emden in 2013 (Haas, 2013). In 2025, a master's program at Ludwigsburg University of Education was renamed "Psychomotricity and Movement Pedagogy" (Göhle et al., 2025). The postgraduate program in Motologie in Erfurt, founded in 1992, was closed in 2003 due to internal restructuring at the university (Berufsverband der Motologie, 2025). Looking at the development of training programs in Switzerland, it was Susanne Naville who played a decisive role. Through the close integration of science and practice, she established the first training program in cooperation with Julian de Ajuriaguerra 1964 in Geneva. In 1972, the second training program was launched in Zurich, also developed by Naville, in collaboration with Fritz Schneeberger and in 1989 in Basel by Emil E. Kobi (Kobi, 1999; Sägesser Wyss & Gasser-Haas, 2021; Weibel, 2019). The developments have remained dynamic: In Zurich, in 2001 the three years training program was converted into a bachelor's program and in 2023 the bachelor's program was complemented by a master's program (Brändli, & Fäh, 2024; Degen-Cuonz, 2019). The training program in Basel was discontinued in 2008 due to low student enrolment (Weibel, 2019). In 2019, the bachelor's program in Geneva was converted into a master's program (Sägesser Wyss & Gasser-Haas, 2021). In Austria, the first courses were held in the mid-1980s. The first degree program in psychomotricity and motopedagogy was implemented at the Lower Austrian State Academy from 1996 to 1998 (Ullmann, 2003). The program was subsequently further developed and, upon the expiration of the regulation in 2010 (Ullmann & Gräsel, 2016), restructured into a postgraduate master's program entitled "Psychomotricity" at the University of Vienna. In 2025, the program will be transferred to the Karl Landsteiner University of Health Sciences in Krems, where students will have the option of pursuing either a two-year academic diploma program or a postgraduate master's degree.

Additionally, a culture of training programs has emerged in Germany and Austria. In Austria, for example, there is a long-established qualification format known as motopedagogy (e.g. Motolino, 2025; VaLeo, 2025). In addition, further education programs exist, that focus on specific age groups, such as motogeragogy (e.g. VaLeo, 2025), which specializes in movement-based work with older adults. Furthermore, there are programs oriented toward specific methodological approaches, such as the intergenerational approach (Pinter-Theiss et al., 2017), in which cross-generational work is conducted, for example between older adults and children from kindergartens. In Germany, training programs of varying duration have similarly been established (German: Motopädie), as well as professional qualification programs in psychomotricity (DAKP, 2025; Rheinische Akademie, 2025).

International networking in psychomotricity within the German-speaking countries emerged early and proved formative. Participation in conferences promoted the international exchange of key figures in the development of psychomotricity in the German-speaking region (Sägesser Wyss & Gasser-Haas, 2021). A symposium in Würzburg in 1982, jointly organized by Kiphard and Naville (Senn, 2022), as well as the involvement of guest lecturers such as Jürgen Seewald, Marion Esser, and Klaus Fischer in the Basel education program (Weibel, 2019), or Sepp Mundigler and Tilo Irmischer in the course "Introduction to motopedagogy" in Austria, demonstrate that key figures relevant to the development of psychomotricity in German-speaking countries knew each other and were in active exchange (Weiss & Ullmann, 2003).

Despite international networking and shared roots, it is evident today that there are differences between the three countries regarding professional titles and official recognition. In Switzerland, psychomotor therapy is a regulated profession, and the protected title *"psychomotor therapist"* can only be used with a bachelor's degree in psychomotor therapy (Schweizerische Konferenz der kantonalen Erziehungsdirektoren, 2023). In contrast, in Germany and Austria the situation is characterized by diverse training pathways that have led to a variety of overlapping professional titles. Terms such as "motopedagogist" and "motologist" are used alongside others like movement therapist, psychomotor therapist, or mototherapist. However, the designation "psychomotrician" is neither legally protected nor consistently defined, nor is it clearly distinguished from the terms mentioned above.

Despite its widespread training opportunities, application and long-standing tradition, psychomotricity remains under-researched. While theoretical discourse and practical expertise are relatively well established, empirical evidence has historically been limited in German-speaking contexts (Richter- Mackenstein, 2017; Schmid, 2025a; Vetter, 2013, 2015). This research gap is also evident regarding professional structures, which, however, would represent a crucial foundation for the orientation and implementation of further research. In recent years, calls for evidence-based foundations have increased with scholars highlighting the need for rigorous studies to substantiate psychomotor practice and inform professional policy (Matias, Almeida, Veiga, & Marmeleira, 2023), since the lack of systematic research restricts professional visibility and the integration of psychomotricity into health and education systems.

The European Forum for Psychomotricity (EFP) addressed this issue at its 2019 General Assembly in Paris, mandating its Science and Research group to establish a structured and comparative overview of psychomotor training, professional contexts, and practices across Europe. The resulting Questionnaire of European Psychomotricity (QuEP) provides a demographic and practice-based dataset intended to serve as a baseline for international comparison and future research. Its aim is to foster a shared conceptual framework, enabling clearer alignment of intervention approaches, target groups, diagnostic practices, and outcome measures across national contexts.

The present article contributes to this endeavour by comparing psychomotor practice in Austria, Germany and Switzerland. Historically, the three countries share common origins, but they have developed differently with regard to education as well as the establishment and recognition of psychomotricity in the field. However, due to the shared language and geographical proximity, there is the hypothesis, that the substantive development has continued to follow relatively similar trajectories, potentially serving as an important resource for fostering closer future collaboration in research, education, and policy efforts. This raises the research question of which similarities and differences can be observed in psychomotor practice across the German-speaking countries regarding education, work context, and professional practice.

The article presents results across these three thematic domains, followed by a discussion of implications for professional recognition, research, and international collaboration. It concludes with reflections on limitations and perspectives for future development of psychomotricity as a scientifically substantiated and internationally recognized profession.

Method

Participants

The QuEP dataset consisted of 1'427 participants from 14 EFP member countries after the data cleaning (removal of incomplete submissions and erroneous entries). For this article, only the answers of the practitioner's version of the QuEP from participants who indicated Austria, Germany or Switzerland as their country of practice were included (N = 545). This represents almost 38% of the overall participants. The age of the participants in German speaking countries ranged from 21 to 73 years (M = 43.1, SD = 12.6), with 90.3% identifying as female. Professional experience varied from 0 to 50 years, with an average of 12.7 years (SD = 10.4), suggesting a qualified and experienced sample. The demographic data by country are presented in Table 1.

Table 1

Demographic data of the sample.

	Austria	Germany	Switzerland
N	91	197	257
Age *M* (*SD*)	40.3 (11.6)	46.5 (12.7)	41.4 (12.2)
Gender (f) %	92.3	83.2	94.9
Gender (o) %	-	-	0.8
PM experience in years *M* (*SD*)	8.1 (8.4)	14.6 (11.1)	12.6 (10.5)

Notes. *f = female; o = other; PM = Psychomotricity*

For data collection, the Questionnaire of European Psychomotricity (QuEP) was used (EFP, 2024). The items of the QuEP were collaboratively developed by a team of nine experts from nine EFP member countries and underwent multiple validation stages, including pilot testing and qualitative interviews with national representatives from both research and practice of all the 14 participating countries of the EFP to ensure conceptual clarity, cross-cultural appropriateness, and linguistic accuracy (Bellemans et al., 2024).

The QuEP consists of two versions: one aimed at practitioners and the other at psychomotor professionals involved in research. The practitioner version comprises 23 items, while the researcher version includes 29 items, also collecting data on research methods, topics and target groups. Both versions were available in English, German, and French. The questionnaire is structured into four main sections:

(A) **Demographics:** Country of origin, age, gender, professional experience, educational background.

(B) **Work Context:** Type of employment, working hours per week, age groups and working fields.

(C) **Professional Practice:** Setting (individual vs. group), group size, therapeutic or developmental goals, overarching theoretical frameworks (e.g., systemic, psychodynamic, or biomedical).

(D) **Research Activity:** needed research (and only for the researcher's version: Relevant and current research topics, methods and designs, tools, and publication activity).

Section (D) Research Activity will not be addressed in this article.

Procedure

Data were collected via the online platform LimeSurvey between August 2022 and February 2023. As shown in table 2 the survey was distributed through the EFP's member networks, national associations, professional mailing lists, and academic institutions to ensure a broad distribution. Participation was voluntary and anonymous. The complete quantitative and qualitative dataset has been provided as an open source by the working group Science and Research of the EFP (European Forum for Psychomotricity [EFP], 2024).

Table 2

Distribution of the questionnaire.

Country	Distribution		
	Mail	**Name of contacted Associations**	**Social Media**
Austria	Mail to all the members the associations and to Graduates (from 2018 onward) of the university program Psychomotricity at the Postgraduate Centre of the University of Vienna	- Aktionskreis Motopädagogik Österreich - VaLeo psychomotorische Entwicklungsbegleitung GmbH - Psychomotorik Österreich - Universität Wien: Postgraduatecenter: Psychomotorik	yes (Facebook)
Germany	Mail to all the members of the associations	- DAKP Deutsche Akademie Aktionskreis Psychomotorik - DBM Deutscher Berufsverband der Motopäd*innen und Mototherapeut*innen - BVDM Berufsverband der Motologie - WVPM Wissenschaftliche Vereinigung für Psychomotorik und Motologie - Aus und Fortbildungsinstitute BAM / Akademie für PM - BVPM Berufsverband der Psychomotorik Vereine in Deutschland	No[1]
Switzerland	Mail to all the members of the association and universities	- Psychomotorik Schweiz - Universitites (HfH Zürich, HETS Genf, PH Luzern, PH Bern, EFPL Lausanne, Universität Genf)	No[1]

Note. *[1]Given the cross-border networking, it is likely that social media dissemination has impacted these countries as well.*

Analyses

The quantitative data were analysed using IBM SPSS Statistics Version 28.0. Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated to gain an overview of the key characteristics of the sample and core variables. Additionally, to examine the significance of group differences and to calculate effect sizes for the metric data, an ANOVA was conducted. If the assumption of homogeneity of variances was not met, a Welch-ANOVA was used instead. For post hoc tests, the Games-Howell procedure was applied in this case. To examine the significance of group differences and to calculate effect sizes for categorical variables, a chi-square test of independence was first conducted for each variable across all countries. In cases where the overall chi-square test reached statistical significance, post hoc pairwise comparisons between individual countries were conducted. To control for Type I error across multiple comparisons, a Bonferroni-adjusted alpha level of .017 was applied for post hoc pairwise comparisons (.05 divided by three comparisons). Missing values were automatically

excluded, so only complete cases were included in the analysis. Unless otherwise stated, no cells had expected frequencies less than 5. Where expected cell counts were below 5, categories were combined. Where the combination of categories was not appropriate, Fisher's exact test and Monte Carlo simulation were used to confirm the association. For the interpretation of effect sizes of the chi-square tests, the thresholds proposed by Lee (2016) were applied.

The closed, standardized questions of the questionnaire were supplemented by open-ended questions. This gave the opportunity to conduct a qualitative analysis and interpretation of each country, in addition to the standardized questions. The responses were first examined individually for each country, then interpreted in relation to the closed questions and their results, in order to identify national characteristics and place them within an international comparison of the three German-speaking countries.

Results

The results of the questionnaire for Austria, Germany and Switzerland are presented across three thematic domains: educational background, work context, and professional practice.

Educational background

To examine educational background, the items "Student (BA, MA, or PhD)", "Bachelor's degree in psychomotricity", "Master's degree in psychomotricity", and "PhD/Postdoc or Professorship" were aggregated into a single category labelled "Academic background". A global chi-square test revealed a significant association between education level overall (workshop, training and academic background) and country, $\chi^2(4, N = 512) = 95.19, p < .001$. The Cramér's effect size $V = .31$, indicating a moderate effect and significant associations between country education types. Table 3 presents country-specific results regarding the qualification pathways among psychomotricians including descriptive analyses, chi square tests and pairwise comparisons. Looking at the different educational background types, the association between country and the educational background types were all significant with moderate to relatively strong effect sizes ($V = .27$-$.40$).

Pairwise comparisons highlighted significant differences in the educational background in psychomotricity, particularly between Switzerland and the other countries. Austria and Germany showed largely comparable profiles with no significant differences in all categories. For *workshops and practical experience*, Austria (24.7%) reported substantially higher frequencies than Switzerland (2.0%), yielding a moderate effect ($V = .37, p < .001$). Germany (13.7%) also differed from Switzerland with a moderate effect ($V = .23, p < .001$). In *training programs (1–3 years)*, Germany (45.6%) and Austria (37.0%) showed higher participation compared to Switzerland (18.9%), with moderate effects for Germany versus Switzerland ($V = .29$, $p < .001$), and a small effect for Austria versus Switzerland ($V = .19, p < .001$). The strongest effects emerged for *academic background* overall: Switzerland (79.1%) far exceeded Austria (38.3%) and Germany (40.5%), $\chi^2(2, N = 512) = 81.34, p < .001, V = .40$. Pairwise comparisons indicated moderate effects for Switzerland versus Germany ($V = .39$) and Switzerland versus Austria ($V = .38$). Degree distributions further highlighted these contrasts. In Switzerland, the majority held a bachelor's degree (67.9%), whereas Austria (28.4%) and Germany (30.8%) concentrated at the master's level. Doctoral or professorial qualifications were less frequent across all countries (≤ 4.8%).

Descriptive analyses show, that in Switzerland, academic education is the most frequent educational background whereas in Austria and Germany academic education and 1–3-year trainings occur with equal frequency.

Table 3

Educational background in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria *N* (%)	Germany *N* (%)	Switzerland *N* (%)	Overall countries χ^2 (*df*, *N*)	*p*	Cramér's *V*	Pairwise Comparisons (χ^2, *N*, *p*, *V*)
Workshops / Practical experience	20 (24.7)	25 (13.7)	5 (2.0)	40.74 (2, 512)	< .001	**.28**	AT vs DE: 4.74, 263, .029, – DE vs CH: 22.33, 431, < .001, **.23** CH vs AT: 44.91, 330, < .001, **.37**
Training (1–3 years)	30 (37.0)	83 (45.6)	47 (18.9)	36.47 (2, 512)	< .001	**.27**	AT vs DE: 1.68, 263, .195, – DE vs CH: 35.66, 431, < .001, **.29** CH vs AT: 11.27, 330, < .001, .19
Academic background overall	31 (38.3)	74 (40.5)	197 (79.1)	81.34 (2, 512)	< .001	**.40**	AT vs DE: 0.13, 263, .715, – DE vs CH: 66.62, 431, < .001, **.39** CH vs AT: 47.75, 330, < .001, **.38**
Student (BA,MA,PhD)	8 (9.9)	5 (2.7)	6 (2.4)				
Bachelor's degree (BA)	0 (-)	4 (2.2)	169 (67.9)				
Master's degree (MA)	23 (28.4)	56 (30.8)	17 (6.8)				
PhD/Postdoc/ Professorship	0 (-)	9 (4.8)	5 (2.0)				

Notes. *N (Austria) = 81; N (Germany) = 182; N (Switzerland) = 249; BA = Bachelor of Arts; MA = Master of Arts; PHD = Doctor of Philosophie; AT = Austria; DE = Germany; CH = Switzerland; Pairwise comparisons were Bonferroni-adjusted (α = .017). Moderate and strong effect sizes are indicated in boldface.*

Work context

This section presents the results related to various aspects of the work context: type of employment, weekly working hours, client groups, and working fields.

Type of employment

To conduct the chi-square test, the categories "employed", and "public servant" were merged into a single category labelled "employed". A global chi-square test revealed a significant association between type of employment overall (self-employed, employed, partly self-employed/partly employed and not practicing psychomotricity) and country, $\chi^2(8, N = 545) = 104{,}34$, $p < .001$, with a moderate effect size (Cramér's $V = .31$), and significant associations between country employment types. Table 4 presents employment patterns among psychomotricians in Austria, Germany, and Switzerland including descriptive analyses, chi square tests and pairwise comparisons. Looking at the different employment types, the association between country and the different employment types were all significant with small to relatively strong effect sizes ($V = .12$-$.41$).

Pairwise comparisons showed notable cross-national differences in employment status in psychomotricity. Strong effects emerged for *employment total*: Switzerland had the highest proportion of employed psychomotricians (84.7%), followed by Germany (64.5%) and Austria (32.9%). Strong effects were observed for Switzerland versus Austria ($V = .51$, $p < .001$), while moderate effects appeared for Austria versus Germany ($V = .30$, $p < .001$) and Germany versus Switzerland ($V = .25$, $p < .001$). *Non-practice* also showed substantial variation. Austria reported 28.9% non-practitioners compared to 2.4% in Switzerland, a moderate effect ($V = .35$, $p < .001$), and a moderate difference versus Germany (9.3%, $V = .21$, $p < .001$). Differences between Germany and Switzerland were small ($V = .14$, $p = .002$). *Self-employment* was most

common in Austria (17.1%) compared to Switzerland (5.6%, V = .15, p = .007), while Austria versus Germany (11.5%) and Germany versus Switzerland showed no significant adjusted differences. Similarly, mixed employment (*partly self-/partly employed*) was more frequent in Austria (21.1%) than Switzerland (7.2%, V = .16, p = .003), Germany (14.8%, V = .21, p < .001).

Descriptive analyses showed that employed psychomotricians represent the largest group in all three countries, while self-employed and partly self-employed/partly employed professionals are less frequent. In Austria, a considerable proportion indicate that they are not employed.

Table 4

Type of employment in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria	Germany	Switzerland	Overall countries		Pairwise Comparisons	
	N (%)	*N* (%)	*N* (%)	χ^2 (*df*, *N*)	*p*	Cramér's *V*	(χ^2, *N*, *p*, *V*)
Self-employed	13 (17.1)	21 (11.5)	14 (5.6)	7.85(2, 545)	= .020	.12	AT vs DE: 0.79, 288, .375, – DE vs CH: 4.26, 454, .039, – CH vs AT: 7.34, 348, .007, .15
Employed toal	25 (32.9)	118 (64.5)	211 (84.7)	91.57 (2, 545)	< .001	**.41**	AT vs DE: 26.18, 288, < .001, **.30** DE vs CH: 27.55, 454, < .001, **.25** CH vs AT: 91.89, 348, < .001, **.51**
Employed	21 (27.6)	110 (60.1)	186 (74.7)				
Public servant	4 (5.3)	8 (4.4)	25 (10.0)				
Partly self-employed/ partly employed	16 (21.1)	27 (14.8)	18 (7.2)	9.53 (2, 545)	= .009	.13	AT vs DE: 0.74, 288, .39, – DE vs CH: 5.61, 454, .018, – CH vs AT: 8.53, 348, .003, .16
I don't practice psychomo-tricity	22 (28.9)	17 (9.3)	6 (2.4)	42.38 (2, 545)	< .001	**.28**	AT vs DE: 12.85, 288, < .001, **.21** DE vs CH: 9.19, 454, .002, .14 CH vs AT: 43.33, 348, < .001, **.35**

Notes. *N (Austria) = 76; N (Germany) = 183; N (Switzerland) = 249; AT = Austria; DE = Germany; CH = Switzerland; Pairwise comparisons were Bonferroni-adjusted (α = .017). Moderate and strong effect sizes are indicated in boldface.*

Weekly working hours

Psychomotricians in Switzerland reported a higher average number of weekly working hours (N = 250, M = 26.4, SD = 9.41), compared to those in Germany (N = 189, M = 16.4, SD = 12.3), and Austria (N = 86, M = 6.6, SD = 8.8). A Welch ANOVA indicated a significant difference in weekly working hours across countries, F(2, 238.01) = 162.90, p < .001, η_p^2 = .578, indicating a strong effect, with approximately 57.8% of the variance explained by country.

Games–Howell post hoc tests revealed that Austrian participants reported significantly fewer weekly working hours than those from Germany (M = -9.77, SE = 1.31, p < .001), and Switzerland (M = -19.78, SE = 1.13, p < .001). Additionally, German participants reported significantly fewer weekly working hours than those from Switzerland (M = -10.02, SE = 1.08, p < .001).

Clients age group

Table 5 presents the age groups of clients served by psychomotricians in Austria, Germany and Switzerland including descriptive analyses, chi square tests and pairwise comparisons. The chi-square tests revealed significant associations between the client's age group categories and the countries, with small to relatively strong effect sizes (V = .19-.50), except for adolescents, where no significant association was found (Table 5).

Pairwise comparisons showed marked differences in the age groups of clients seen in psychomotricity across Austria, Germany, and Switzerland. The most pronounced effect emerged for *primary school children (6–13 years)*, $\chi^2(2, N = 493) = 123.27$, $p < .001$, $V = .50$. In Switzerland 92.5% of psychomotricians reported seeing this age group, compared to 47.7% in Germany and 42.9% in Austria, indicating relatively strong differences between Switzerland and both Austria ($V = .54$, $p < .001$) and Germany ($V = .50$, $p < .001$). Differences between Austria and Germany were nonsignificant ($p = .475$). For the age groups of *adults (18–60 years)* and the *elderly (≥60 years)* a moderate cross-national difference was found. In Germany psychomotricians more frequently also worked with adults (26.1%) than Switzerland (8.3%, $V = .24$, $p < .001$), whereas Austria (20.8%) did not significantly differ from either country. Elderly clients were less commonly treated in Switzerland (2.9%) than in Austria (16.9%, $V = .25$, $p < .001$), and Germany (13.6%, $V = .20$, $p < .001$), with moderate effects observed. In the age group of *infants (≤3 years)* and *kindergarten children (3–6 years)* moderate to small or nonsignificant differences could be found. The age group of *adolescents (13-18 years)* did not differ significantly across countries, $\chi^2(2, N = 493) = 4.48$, $p = .106$.

Descriptive analyses showed that psychomotricians most commonly work with children from 3-6 years in all three countries. In Switzerland, children from 6-13 years represent the major client group, while in Austria and Germany the distribution of client groups is more evenly spread across age categories.

Table 5

Client's age group in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria *N* (%)	Germany *N* (%)	Switzerland *N* (%)	Overall countries χ^2 (*df*, *N*)	*p*	Pairwise Comparisons Cramér's *V*	(χ^2, *N*, *p*, *V*)
Infants (until 3 years)	23 (29.9)	46 (26.1)	30 (12.5)	17.21 (2, 493)	< .001	.19	AT vs DE: 0.38, 253, .539, – DE vs CH: 12.65, 416, < .001, .17 CH vs AT: 12.63, 317, < .001, **.20**
Kindergarten Children (3 until 6 years)	57 (74.0)	112 (63.6)	196 (81.7)	17.17 (2, 493)	< .001	.19	AT vs DE: 2.61, 253, .106, – DE vs CH: 17.17, 416, < .001, **.20** CH vs AT: 2.11, 317, .146, –
Primary School Children (6 until 13 years)	33 (42.9)	84 (47.7)	222 (92.5)	123.27 (2, 493)	< .001	**.50**	AT vs DE: 0.51, 253, .475, – DE vs CH: 104.65, 416, < .001, **.50** CH vs AT: 91.32, 317, < .001, **.54**
Adolescents (13 until 18 years)	14 (18.2)	39 (22.2)	69 (28.7)	4.48 (2, 493)	= .106	-	
Adults (18 until 60 years)	16 (20.8)	46 (26.1)	20 (8.3)	24.34 (2, 493)	< .001	**.22**	AT vs DE: 0.83, 253, .362, – DE vs CH: 24.11, 416, < .001, **.24** CH vs AT: 8.97, 317, .003, –
Elderly (60 or older)	13 (16.9)	24 (13.6)	7 (2.9)	21.47 (2, 493)	< .001	**.21**	AT vs DE: 0.45, 253, .501, – DE vs CH: 16.92, 416, < .001, **.20** CH vs AT: 19.24, 317, < .001, **.25**

Notes. *N (Austria) = 77; N (Germany) = 176; N (Switzerland) = 240; AT = Austria; DE = Germany; CH = Switzerland; Pairwise comparisons were Bonferroni-adjusted (α = .017); multiple answers possible. Moderate and strong effect sizes are indicated in boldface.*

An open-ended question invited the participants to provide further details regarding their client group assignments. In Austria, client groups are predominantly located in kindergarten and school settings. Descriptions range from no further specification to references to specific disabilities, behavioural challenges, developmental delays, learning difficulties, or emotional issues. Inclusion is mentioned, as a focus to ensure the right of all learners to participate equally in education regardless of individual conditions, e.g. in mixed groups of children with and without special needs. Work with adults and older people is also occasionally reported. In Germany, in addition to motor-related topics across all age groups, psychological concerns such as anxiety disorders, psychiatric diagnoses, and therapeutic needs are frequently noted. In Switzerland, client groups are strongly linked to the school context. Descriptions are often detailed, addressing graphomotor difficulties, developmental delays, and socio-emotional challenges. The autism spectrum is particularly frequently mentioned, and consultative activities are regularly included in the professional practice.

Working fields

Table 6 presents the working fields in Austria, Germany and Switzerland including descriptive analyses, chi square tests and pairwise comparisons. The chi-square tests revealed significant associations between countries and working field categories with small to moderate effect sizes (V = .13-.21), except for teaching, special education needs, organizations and workshops, and human-environment interaction, where no significant associations were observed.

Pairwise comparisons showed significant differences with small to moderate effects across countries in the working fields of psychomotricity. *Education in childhood and adolescence* revealed higher involvement in Switzerland (50.0%) than Germany (27.1%, V = .23, p < .001), indicating a moderate effect size, with no significant differences between Austria (38.0%) and either country. Psychomotricians in Austria reported a higher proportion working in *pedagogy/early education* (73.7%) compared to Germany (56.4%, V = .16, p = .009), indicating a small effect size, while differences between Switzerland (67.6%) and either Austria or Germany were not significant. Significant differences with small to moderate effect sizes were also observed in fields related to the *elderly, mental health, health promotion,* and *psychomotor therapy-related approaches.* For instance, psychomotor therapy-related approaches like e.g. dance therapy, physiotherapy or language support were reported by far more psychomotricians in Germany (21.3%) and Switzerland (20.1%) than in Austria (1.3%, V = .22–.25, p < .001), indicating moderate effect sizes. Fields such as *teaching*, *special education needs*, *organizations/workplaces*, and *human-environment interaction* did not differ significantly between countries.

Descriptive analyses across all three countries showed that psychomotor professionals are most commonly active in pedagogy and early education. In Switzerland, a considerable proportion indicate that they are working in education in childhood and adolescence.

Table 6

Working fields in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria	Germany	Switzerland	Overall countries			Pairwise Comparisons
	N (%)	*N* (%)	*N* (%)	χ^2 (*df*, *N*)	*p*	Cramér's *V*	(χ^2, *N*, *p*, *V*)
Pedagogy / early education	58 (73.7)	106 (56.4)	165 (67.6)	.18 (2, 511)	.010	.13	AT vs DE: 6.83, 267, .009, .16 DE vs CH: 5.74, 432, .017, .12 CH vs AT: 0.94, 232, .333, –
Education in childhood and adolescence	30 (38.0)	51 (27.1)	122 (50.0)	23.32 (2, 511)	< .001	**.21**	AT vs DE: 3.1, 267, .078, – DE vs CH: 23.14, 432, < .001, **.23** CH vs AT: 3.46, 323, .063, –
Teaching [1]	21 (26.6)	47 (25.0)	42 (17.2)	5.23 (2, 511)	.073	–	
Elderly	10 (12.7)	14 (7.4)	4 (1.6)	16.21 (2, 511)	< .001	.16	AT vs DE: 1.85, 267, .174, – DE vs CH: 8.97, 432, .003, .14 CH vs AT: 17.48, 323, < .001, **.23**[8]
Specialeducation needs/ inclusion/ participation	18 (22.8)	46 (24.5)	66 (27.0)	0.72 (2, 511)	.698	–	
Mental health [2]	5 (6.3)	44 (23.4)	26 (10.7)	19.98 (2, 511)	< .001	.19	AT vs DE: 10.82, 267, .001, **.20** DE vs CH: 12.71, 432, < .001, .17 CH vs AT: 1.29, 323, .256, –
Physical Health[3]	5 (6.3)	20 (10.6)	7 (2.9)	10.92 (2, 511)[9]	.004	.16	AT vs DE: 1.22, 267, .27, – DE vs CH: 10.94, 432, < .001, .16 CH vs AT: 2.00, 323, .158, –[8]
Health Promotion [4]	7 (8.9)	18 (9.6)	50 (20.5)	12.63 (2, 511)	.002	.16	AT vs DE: 0.03, 267, .86, – DE vs CH: 9.54, 432, .002, .15 CH vs AT: 5.56, 323, .018, –
Psychomotor Therapy related Approaches [5]	1 (1.3)	40 (21.3)	49 (20.1)	17.31 (2, 511)	< .001	.18	AT vs DE: 17.14, 267, < .001, **.25** DE vs CH: 0.09, 432, .761, – CH vs AT: 16.15, 323, < .001, **.22**
Organizations and Workplaces [6]	1 (1.3)	5 (2.7)	7 (2.9)	0.64 (2, 511)[8]	.7310	–	
Human-Environment Interaction [7]	0 (-)	5 (2.7)	3 (1.2)	2.9 (2, 511)[8]	.23511	–	

Notes. *N (Austria) = 79; N (Germany) = 188; N (Switzerland) = 244; AT = Austria; DE = Germany; CH = Switzerland; [1] e.g. workshops, trainings, formation-program, university; [2] e.g. Psychiatry, Psychosomatic Phenomena's, Forensic, Geriatrics; [3] e.g. Motor Therapy in Medical Settings / Rehabilitation; [4] e.g. Prevention, Recreational, Well-Being, Psychomotor Training, Mentoring and Coaching; [5] Body-Psychotherapy, Dance-Movement Therapy, Somatics, Embodiment; [6] e.g. working practices, organizational support, workplacedesign; [7] e.g. sustainability, democracy building, digitalisation, technology; [8] Due to cells having expected counts less than 5, Fisher's exact Test and Monte Carlo simulation with 10,000 iterations were performed, confirming the result; Pairwise comparisons were Bonferroni-adjusted (α = .017); multiple answers possible. Moderate and strong effect sizes are indicated in boldface.*

Professional practice

The following section presents the results concerning professional practices: individual versus group settings, group size, primary intervention foci and topics, as well as approaches and theoretical foundations.

Setting

A majority of respondents in Austria (*N* = 68; 73.4%) and Germany (*N* = 163; 68.3%) reported working in group settings. In contrast, a smaller proportion of psychomotricians in Switzerland (*N* = 226; 37.2%)

indicated working in such settings. The Welch test revealed a significant difference in the setting of practice, $F(2, 163.54) = 57.54$, $p < .001$, $\eta_p^2 = .413$, with a strong effect size.

Games–Howell post hoc tests indicated that psychomotricians in Switzerland work in group settings significantly less often than those in Germany ($M = –31.10$, $SE = 3.30$, $p < .001$), and Austria ($M = –36.22$, $SE = 5.30$, $p < .001$). There was no significant difference between Germany and Austria ($M = –5.12$, $SE = 5.69$, $p = .642$).

Group size

The reported average group size varies considerably across countries. Psychomotricians in Austria ($N = 58$) reported the largest average group size ($M = 9.5$, $SD = 4.5$), followed by those in Germany ($N = 158$; $M = 7.0$, $SD = 4.6$), while psychomotricians in Switzerland (N = 211) reported working with significantly smaller groups ($M = 2.9$, $SD = 2.4$). The Welch test revealed a significant difference in group size, $F(2, 132.29) = 98.71$, $p < .001$, $\eta_p^2 = .599$, with a strong effect size.

Games–Howell post hoc tests showed that psychomotricians in Austria work with significantly larger groups than those in Germany ($M = 2.51$, $SE = 0.70$, $p = .001$), and Switzerland ($M = 6.61$, $SE = 0.62$, $p < .001$). Psychomotricians in Germany also reported working with significantly larger groups than those in Switzerland ($M = 4.10$, $SE = 0.40$, $p < .001$).

Main intervention foci and topics

Table 7 presents the distribution of intervention foci and topics in psychomotricity across Austria, Germany, and Switzerland, including descriptive frequencies, chi-square tests, and pairwise comparisons. Significant associations between country and intervention focus with small to relatively strong effect sizes ($V = .14$-$.49$) were found for all categories except life-skills interventions, where no overall significant differences emerged.

Pairwise comparisons showed significant differences between countries in intervention and topics in psychomotricity. For *fine motor skills*, Switzerland reported a substantially higher proportion of interventions (87.1%) than Germany (36.6%, $V = .53$, $p < .001$), and Austria (49.3%, $V = .39$, $p < .001$), with relatively strong and moderate effect sizes, whereas differences between Austria and Germany were not significant. *Emotional skills* were targeted significantly more in Switzerland (95.7%) and Germany (86.6%) than Austria (68.5%, $V = .16$–$.37$, $p < .001$), with moderate effect sizes. Interventions focusing on *gross motor skills* were targeted significantly more in Switzerland (88.8%) than in Germany (73.8%, $V = .20$, $p < .001$), with a moderate effect size and no significant differences between Austria (83.6%) and either country. Austria reported a significant higher use of *learning interventions* (45.8%) than Germany (22.7%, $V = .20$, $p < .001$), with a moderate effect size and no significant differences between Switzerland (31.8%) and either country.

Switzerland reported a higher use of *behavioural interventions* (77.3%, $V = .17$, $p < .001$), and *relaxation techniques* (60.5%, $V = .15$, $p = .002$), than Germany (61.6%, 45.3%), with small effect sizes and no significant difference between Austria and Germany or Austria and Switzerland. Regarding *body awareness* ($V = .18$, $p = .002$), and *self-concept* ($V = .18$, $p = .002$), significant differences with small effect sizes were observed between Switzerland and Austria, with Switzerland generally reporting higher proportions (94.0%, 92.3%), than Austria (82.2, 79.5%), while *life-skills interventions* did not differ significantly between countries.

Descriptive analyses showed that all three countries share key focus areas in psychomotor practice: gross motor skills, body awareness, emotional skills, self-concept, and behavioural intervention are reported by more than 50% of all three countries. The multiple response format resulted in a notably high number of mentions across different approaches in all three countries. In Germany five, in Austria six and in Switzerland seven categories out of nine were chosen by more than half of the sample.

Table 7

Intervention foci and topics in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria	Germany	Switzerland	Overall countries			Pairwise Comparisons
	N (%)	*N* (%)	*N* (%)	χ^2 (*df*, *N*)	*p*	Cramér's *V*	(χ^2, *N*, *p*, *V*)
Fine Motor Skills [1]	36 (49.3)	63 (36.6)	203 (87.1)	115.59 (2, 478)	< .001	**.49**	AT vs DE: 3.43, 245, .064, – DE vs CH: 111.94, 405, < .001, **.53** CH vs AT: 46.47, 306, < .001, **.39**
Gross Motor Skills [2]	61 (83.6)	127 (73.8)	207 (88.8)	15.58 (2, 478)	< .001	.18	AT vs DE: 2.72, 245, .099, – DE vs CH: 15.41, 405, < .001, **.20** CH vs AT: 1.43, 306, .233, –
Behavioural Interventions [3]	47 (64.4)	106 (61.6)	180 (77.3)	12.57 (2, 478)	.002	.16	AT vs DE: 0.17, 245, .684, – DE vs CH: 11.64, 405, < .001, .17 CH vs AT: 4.81, 306, .028, –
Emotional Skills [4]	50 (68.5)	149 (86.6)	223 (95.7)	40.52 (2, 478)	< .001	**.29**	AT vs DE: 11.05, 245, < .001, **.21** DE vs CH: 10.90, 405, < .001, .16 CH vs AT: 42.79, 306, < .001, **.37**
Body Awareness / Self Perception	60 (82.2)	152 (87.2)	219 (94.0)	10.30 (2, 478)	.006	.15	AT vs DE: 1.05, 245, .305, – DE vs CH: 5.62, 405, .018, – CH vs AT: 9.62, 306, .002, .18
Self-Concept/ Self Esteem / Body Image	58 (79.5)	152 (88.4)	215 (92.3)	9.35 (2, 478)	.009	.14	AT vs DE: 3.33, 245, .068, – DE vs CH: 1.77, 405, .183, – CH vs AT: 9.50, 306, .002, .18
Relaxation Techniques	41 (56.2)	78 (45.3)	141 (60.5)	9.28 (2, 478)	.001	.14	AT vs DE: 2.40, 245, .121, – DE vs CH: 9.17, 405, .002, .15 CH vs AT: 0.44, 306, .509, –
Life-Skills Interventions [5]	18 (24.7)	40 (23.3)	54 (23.2)	0.07 (2, 478)	.964	–	
Learning Interventions	32 (43.8)	39 (22.7)	74 (31.8)	11.30 (2, 478)	.004	.15	AT vs DE: 11.15, 245, < .001, **.21** DE vs CH: 4.06, 405, .044, – CH vs AT: 3.58, 306, .058, –

Notes. *N (Austria) = 73; N (Germany) = 172; N (Switzerland) = 233; AT = Austria; DE = Germany; CH = Switzerland; [1] e.g. Handwriting; [2] e.g. Movement Coordination; [3] e.g. Cognitive Performance, Social Skills; [4] e.g. Self-Regulation, impulse control; [5] wellness, quality of Life, personality development; multiple answers possible. Pairwise comparisons were Bonferroni-adjusted (α = .017); Moderate and strong effect sizes are indicated in boldface.*

As shown in Table 8, the four most frequent intervention foci in average for all German-speaking countries are 1. Body Awareness and Self Perception, 2. Self-Concept, Self Esteem and Body Image, 3. Emotional Skills like Self-Regulation, impulse control and 4. Gross Motor Skills like movement coordination.

Table 8

Absolute and relative frequency of psychomotor intervention foci overall (Austria, Germany and Switzerland).

	N (%)
Body Awareness / Self Perception	429 (89.7)
Self-Concept / Self Esteem / Body Image	425 (88.9)
Emotional Skills [4]	422 (88.3)
Gross Motor Skills [2]	395 (82.6)
Behavioural Interventions [3]	333 (69.7)
Fine Motor Skills [1]	302 (63.2)
Relaxation Techniques	260 (54.4)
Learning Interventions	145 (30.3)
Life-Skills Interventions [5]	112 (23.4)

Notes. *N (DACH) = 478. DACH = Germany, Austria and Switzerland. [1] e.g. Handwriting; [2] e.g. Movement Coordination; [3] e.g. Cognitive Performance, Social Skills; [4] e.g. Self-Regulation, impulse control; [5] wellness, quality of Life, personality development; multiple answers possible.*

Approaches and theoretical foundations

Table 9 presents the theoretical foundations and approaches in psychomotricity across Austria, Germany, and Switzerland, including absolute and relative frequencies, chi-square tests, and pairwise comparisons. The chi-square analyses revealed significant associations between countries and several psychomotor approaches with small to relatively strong effect sizes (V = .12-.41), except for competence-oriented approaches, where no significant differences were observed.

Pairwise comparisons showed significant differences between countries in approaches and theoretical foundations in psychomotricity. *Systemic* approaches were reported most frequently in Switzerland (71.4%), followed by Germany (42.9%) and Austria (15.1%, V = .27–.49, p < .001, for all pairwise comparisons), with a relatively strong effect size between Switzerland and Austria and moderate effect sizes between the other countries. Similarly, *humanistic* approaches were more common in Switzerland (67.4%) and Germany (49.4%) than Austria (24.7%, V = .18–.37, p < .001), with moderate effect sizes between Switzerland and Austria and Austria and Germany and a small effect size between Germany and Switzerland.

Developmental approaches were more prevalent in Switzerland (81.9%) compared with Austria (57.5%) and Germany (61.2%, V = .23–.25, p < .001), with moderate effect sizes. Germany reported lower frequencies of *sensorimotor* approaches (47.1%) than Switzerland (76.7%, V = .31, p < .001), and Austria (71.2%, V = .22, p < .001), with moderate effect sizes. *Artistic* approaches were reported significantly more frequently in Switzerland (18.9%) than in Austria (8.2%, V = .19, p < .001), or Germany (5.9%, V = .27, p < .001), with small to moderate effect sizes. Regarding *psychodynamic*, *behavioural*, *biological/medical* and *embodiment/somatic* approaches, differences with small effect sizes occurring between countries. The sage of *competence-oriented* approaches did not differ consistently across countries.

Descriptive analyses showed that developmental and competence-oriented approaches were reported by more than half of the sample in every country. It is evident, that the psychomotricians draw on a wide range of approaches and theoretical foundations, especially in Switzerland, where five approaches were chosen by more than 50% of the sample.

Table 9

Approaches and theoretical foundations in psychomotricity: absolute and relative frequencies and pairwise chi-square comparisons by country.

	Austria	Germany	Switzerland	Overall countries			Pairwise Comparisons
	N (%)	*N* (%)	*N* (%)	χ^2 (*df*, *N*)	*p*	Cramér's *V*	(χ^2, *N*, *p*, *V*)
psychodynamic	9 (12.3)	49 (28.8)	67 (29.5)	9.04 (2, 470)	.011	.14	AT vs DE: 7.65, 243, .006, .18 DE vs CH: 0.02, 397, .881, – CH vs AT: 8.63, 300, .003, .17
behavioural	6 (8.2)	10 (5.9)	43 (18.9)	16.58 (2, 470)	<.001	.19	AT vs DE: 0.45, 243, .501, – DE vs CH: 14.33, 397, <.001, .19 CH vs AT: 4.65, 300, .031, –
systemic	11 (15.1)	73 (42.9)	162 (71.4)	79.61 (2, 470)	<.001	**.41**	AT vs DE: 17.54, 243, <.001, **.27** DE vs CH: 32.51, 397, <.001, **.29** CH vs AT: 71.71, 300, <.001, **.49**
humanistic	18 (24.7)	84 (49.4)	153 (67.4)	43.18 (2, 470)	<.001	**.30**	AT vs DE: 12.85, 243, <.001, **.23** DE vs CH: 13.07, 397, <.001, .18 CH vs AT: 41.17, 300, <.001, **.37**
developmental	42 (57.5)	104 (61.2)	186 (81.9)	27.36 (2, 470)	<.001	**.24**	AT vs DE: 0.28, 243, .595, – DE vs CH: 21.28, 397, <.001, **.23** CH vs AT: 18.04, 300, <.001, **.25**
competence orientated	46 (63.0)	101 (59.4)	158 (69.6)	4.57 (2, 470)	.102	-	
sensomotoric	52 (71.2)	80 (47.1)	174 (76.7)	38.90 (2, 470)	<.001	**.29**	T vs DE: 12.03, 243, <.001, **.22** DE vs CH: 36.94, 397, <.001, **.31** CH vs AT: 0.87, 300, .350, –
biological / medical	3 (4.1)	16 (9.4)	38 (16.7)	10.11 (2, 470)	.006	.15	AT vs DE: 1.99, 243, .158, – DE vs CH: 1.99, 243, .158, – CH vs AT: 7.47, 300, .006, .16
embodiment / somatics	5 (6.8)	34 (28.8)	37 (29.5)	6.52 (2, 470)	.038	.12	AT vs DE: 6.56, 243, .010, .16 DE vs CH: 0.91, 397, .341, – CH vs AT: 4.10, 300, .043, –
artistic	6 (8.2)	9 (5.9)	59 (18.9)	35.08 (2, 470)	<.001	**.27**	AT vs DE: 0.75, 243, .385, – DE vs CH: 29.33, 397, <.001, **.27** CH vs AT: 10.28, 300, .001, .19

Notes. *N (Austria) = 73; N (Germany) = 170; N (Switzerland) = 227; AT = Austria; DE = Germany; CH = Switzerland; multiple answers possible. Pairwise comparisons were Bonferroni-adjusted (α = .017); Moderate and strong effect sizes are indicated in boldface.*

The open-ended question regarding the theoretical framework or psychomotor approach was answered only sparsely in all three countries. While the responses from Switzerland predominantly demonstrated clear theoretical references, several responses from Germany and Austria fell outside the requested theoretical scope.

Discussion

The following section discusses the results regarding educational background, work context, and professional practice, ending with a conclusion.

Educational background

The present findings reveal substantial cross-country differences in the educational pathways of psychomotricians especially between Switzerland and the other two countries, whereas Germany and Austria did not differ significantly from each other. Switzerland showed a pronounced emphasis on academic education, particularly at the bachelor's level, while Austria and Germany additionally to a master's program have developed a strong culture of workshops and training.

Workshops and training programs have the advantage of addressing not only psychomotricians themselves but also various professional groups in the field of health and education like e.g. teachers, or speech therapists, by providing them with a basic qualification in psychomotor practice (e.g. Motolino, 2025; Rheinische Akademie, 2025). For certain professions, such as teachers, educators, caregivers for the elderly, or specialists in inclusive education, it is particularly important to acquire at least fundamental knowledge and practical psychomotor tools tailored to their respective target groups. This can make an essential contribution to the quality of their work and enrich their professional practice significantly. In addition, training programs with a specific focus, as is the case in Austria with motogeragogy – working with elderly (VaLeo, 2025) and intergenerational approaches (Pinter-Theiss et al., 2017), enable a substantive further development of the professional field.

Conversely, the fact that it is common in Germany and Austria for other professions like special education teachers, to complete so-called additional psychomotor qualification programs contributes to a structural problem: in Germany and Austria the term "Psychomotrician" is not a legally protected professional title and, therefore, does not guarantee a defined level of professionalization (Schmid, 2025a). For the quality and further development of psychomotor practice, this is not expedient, and it would be urgently necessary to establish a legal framework to protect the title *psychomotrician* in Germany and Austria and to define the required training for obtaining this title, as is exemplified in Switzerland by the protected title *"psychomotor therapist"*. Furthermore, the multitude of different and freely chosen professional titles obscures which training an individual has completed, and there is no consensus on how the profession should be designated. In addition, professional titles differ in terms of orientation: *motopedagogist* generally implies a pedagogical focus, whereas p*sychomotor therapist* implies a therapeutic focus, which complicates the development of a shared professional identity.

The German Association for Psychomotricity and Motologie (Wissenschaftliche Vereinigung für Psychomotorik und Motologie [WVPM]) has gathered an overview of central dissertations in the field of psychomotricity since 1980 for Germany (WVPM, 2025). This list shows that typical psychomotricity topics are also submitted as dissertations in adjacent disciplines such as medicine or education. The fact that many doctoral theses in the field of psychomotricity are also submitted in other academic disciplines must be considered in light of the current educational systems in these countries. Although in Switzerland a master's program in psychomotor therapy has been established 2023 in Zürich (Brändli, & Fäh, 2024), it remains impossible to complete a doctoral dissertation in the field of psychomotricity without international collaboration. The same applies to Austria, where no doctoral opportunities in this field are currently available. In Germany, there are only two Universities, where dissertations in the field of psychomotricity or Motologie can be defended, Marburg University and Ludwigsburg University of Education (WVPM, 2025). These aspects have most likely hindered the scientific advancement of psychomotricians so far. The effects resulting from the newly established master's program in Switzerland will only become apparent in the coming years. While this dependency on other countries and disciplines within the doctoral process does foster international and multiprofessional cooperation, it also constitutes an additional barrier for doctoral candidates.

In summary, it can be stated that only in Switzerland a professionally well-regulated and a primary academically oriented training structure has led to a recognized professional profile. In Germany, by contrast, a stronger research culture has developed, mainly due to the longer-established master's program and the option to pursue doctoral studies. However, this scientific foundation is relativized by the fact that, even after attending only a

weekend training course in psychomotricity, one can open a practice and use the professional title of psychomotrician. It appears appropriate to continue the previous efforts of the EFP (EFP, 2025a) and to pursue clear standards regarding training pathways, professional titles, and professional competencies, as well as to promote the scientific strengthening of the profession, including the possibility of pursuing doctoral studies in the field of psychomotricity.

Work context

The present study highlights marked cross-national variations in the work context of psychomotricians. Although the standard working hours are comparable across the three countries, employees in Switzerland record notably longer actual working hours. The Swiss context is further characterized by high employment stability and a strong focus on primary school-aged clients within school settings, reflecting a structured and institutionally embedded practice. Germany occupied an intermediate position, with moderate employment rates, working hours, and a notable focus on adult clients and psychomotor therapy related approaches, highlighting a more therapeutic orientation. Austria showed higher rates of self-employment, shorter working hours, and broader distribution across client age groups, predominantly in early education and pedagogical settings, suggesting a less formalized and more flexible professional landscape.

Across all three countries, work with children remains the central focus of psychomotor practice, particularly in pedagogical and special education settings. At the same time, new areas are emerging, such as health promotion, workplace interventions, and approaches at the intersection of human-environment systems, including digitalization, democratic education, and sustainability, which are already being explored in Germany and offer opportunities for professional expansion (e.g. Berg, 2020; Göhle, 2018; Schmid, 2023, 2025b).

The high proportion of permanently employed psychomotricians in Switzerland, coupled with longer weekly working hours and a strong focus on school-aged children, underscores the structural and professional consolidation of psychomotricity in the Swiss education system (Psychomotorik Schweiz, 2021). This institutional anchoring, combined with nationwide recognition of the profession and the current shortage of qualified personnel (Brändli & Fäh, 2024), leads to a professional and target-group-specific specialization within the field, contributes to favourable employment conditions, and increases the attractiveness of the profession. At the same time, these factors limit the expansion and further development of practice to additional target groups, such as elderly people adults.

In contrast, Germany and Austria exhibit a more heterogeneous professional landscape. Higher rates of self-employment, lower weekly working hours, and broader client age ranges suggest that many psychomotricians integrate psychomotor practice with other professional activities to secure their livelihoods. The more diversified engagement in Austria and in Germany, e.g. also working with adults or elderly, reflects both historical contributions of national pioneers, for example Tessi Zak and Veronika Pinter-Theis in Austria and Marianne Eisenburger in Germany (Haas, 1997; Pinter-Theis, & Zak, 2017; Zak, & Eisenburger, 2019), and the less formalized institutional embedding of the profession. While this may contribute to the development of a broader field of practices, it also entails several risks. On the one hand, it can make it more difficult to establish a distinctive profile and professional identity of psychomotricians, one that is easily understandable not only for clients but also for collaborating professions, such as physicians, social workers, or educators on a national and international level. On the other hand, it may lead individuals not to identify as members of the profession and, despite engaging in psychomotor work, to identify more strongly with another professional group. The notable proportion of non-practicing psychomotor professionals in Austria and Germany may reflect the coexistence of overlapping professional identities, such as kindergarten teachers with psychomotor qualifications, and underscores the potential effects of an under-regulated professional designation.

Taking into account the professional-political challenges we argue that a central challenge for the development of psychomotricity not only in the German speaking countries but also globally, may lie in ensuring that the development of the professional field does not only occur arbitrarily in individual countries, but also as deliberately and

collectively guided in a defined direction, with the aim of maintaining a shared focus and strengthening a common professional identity. The aim of the EFP with the QuEP data collection was to make international differences as well as national strengths more visible. The continuation of the European Journal of Psychomotricity by the EFP provides an optimal platform for individual countries not only to present their respective developments and professional-political situations to the international psychomotricity community, but also to generate and receive impulses for their own developments, to raise awareness of potential obstacles, and to formulate proposals for harmonization.

Professional practice

The results indicate the presence of cross-national commonalities in the domain of professional practice. Intervention foci, such as body awareness, self- concept, emotional skills, gross motor skills, and behavioural interventions were reported by a majority of participants in all three countries. Concerning approaches, it was also found that developmental and competence-oriented approaches were selected by the majority of respondents in all three countries. Regarding approaches and theoretical foundations, there were minimal cross-national differences. However, country-specific differences with large effect sizes were observed in terms of setting and group size. Consequently, variations in professional practice primarily pertain to structural aspects rather than content-related aspects. One notable exception is fine motor skills as an intervention focus, where marked differences were observed in Switzerland compared with the other two countries. Regarding approaches and theoretical underpinnings, the systemic approach is particularly noteworthy, showing differences across all three countries ranging from moderate to large effect sizes.

The data from Switzerland confirm the findings of a study by Widmer and Bräuninger (2020), in which nearly 85% of psychomotricians reported working with small groups of 2–4 children. The differences in setting and group size between Austria, Germany and Switzerland may thus be explained by financing models, as psychomotor therapy in Switzerland is almost exclusively publicly funded, whereas Germany and Austria employ diverse funding schemes that may encourage larger group formats. Regarding intervention focus, the question arises whether such small groups are indicated in all cases in Switzerland, or whether larger group sizes might be more appropriate for indications (for example in the social-emotional domain) (Widmer & Bräuninger, 2020).

Regarding intervention foci, there appears to be a shared core across all German-speaking countries, encompassing a total of five foci. These five foci are also reflected in the analysis of the overall sample of all 14 participating European countries (Schmid, 2025a). This, on the one hand, reflects the diverse field of practice in psychomotricity and the eclectic landscape of the discipline. Amft et al. (2013) demonstrated in their study that a large proportion of children attending psychomotor therapy present with a combination of motor and socio-emotional difficulties. This highlights the need to combine different intervention foci in order to address the diverse domains (physical, emotional, and social) in a holistic manner, and to implement them in a person- and target group-oriented way that is responsive to individual needs and may explain the observed diversity in the selection of intervention foci. However, the broad orientation also carries the risk of insufficient specialization.

The content-related commonality of psychomotor therapy is also reflected in the approaches. In Austria and Germany, a stronger focus is observed, as only two or three approaches were selected by a majority of the sample. In Switzerland, a greater dispersion of approaches is evident, which is surprising given the clearly defined work setting.

The findings highlight the need for a critical and data-driven consideration of the setting and its appropriateness for the specific client indications, rather than selecting the setting primarily based on existing structures. The shared core regarding intervention foci and approaches can serve as a foundation for enhanced international collaboration. Building on this, research projects can be developed, and curricular advancements can be designed within the framework of international exchange.

Conclusion

This study provides the first data driven insights into the current professional practice of psychomotricians in German-speaking countries, revealing both shared foundations and country-specific variations. Establishing a shared understanding of psychomotricity is crucial for further development and for fostering international collaboration in research, education, and professional practice. The survey findings indicate that cross-country differences with moderate to strong effect sizes are particularly pronounced in structural dimensions such as educational background and work context, notably regarding type of employment, weekly working hours and client age groups, as well as aspects of professional practice such as setting and group size. In contrast, for items more closely related to the substantive content of psychomotricity, effect sizes were smaller, and the number of non-significant differences increased, for example, regarding approaches and theoretical foundations, working fields, and intervention foci.

Furthermore, differences with moderate to strong effect sizes occurred less frequently between Germany and Austria than between Germany and Switzerland or between Switzerland and Austria. Despite national particularities and variations in professional expressions, the shared foundation of psychomotor work across German-speaking countries remains clearly recognizable. This is reflected in common intervention foci, working fields and approaches, likely origination from a shared tradition. As Kiphard noted, "our views had more in common than they differed" (Senn, 2022).

Limitations

The distribution of the QuEP was tracked and the overall number of participants was high, indicating broad interest and a strong response rate. However, it cannot be guaranteed that the questionnaire was made equally accessible in all three countries. Variations in local distribution strategies, such as the use of different networks, communication channels, or digital infrastructures, may have influenced participants' access and engagement.

The qualitative findings indicate that there is neither a unified understanding nor a common terminology within the theoretical approaches. Against this background, the results in the area of approaches should be interpreted with caution. The lack of standardized terms remains a central challenge and highlights the need to develop clear, cross-nationally valid categories without generating an unmanageable proliferation of distinctions. For sustainable international collaboration and research, conceptual clarification at both the national and international levels is essential to enable meaningful professional dialogue. In this context, the EFP glossary (EFP, 2025b) could represent an important initial milestone.

Furthermore, the responses to the open-ended questions often could not be clearly assigned to the intended categories, resulting in gaps during the analysis. As not all responses could be reliably classified, a detailed qualitative evaluation was only partially feasible in several areas.

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Section 2 | Practice insights: case studies and professional reflections

Psychomotricity in Bulgaria: Challenges in a post-communist context

A provocative essay reflecting on the 5th anniversary of the national professional organisation

Vania Dunkova*

* Bulgarian association for the development of Psychomotricity (BAPMT), Bulgarian Psychomotor Institute (BIP)
Contact: vaniadunkova@gmail.co

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ABSTRACT

The article examines the ethical dilemmas faced by the psychomotor therapy trainings conducted by the Bulgarian Association for the Development of Psychomotricity (BAPMT) over the last five years and arising in the context of the Bulgarian environment. The conclusions are drawn that no helping discipline should not and cannot be isolated from the specifics of the context, and the opposite poses serious challenges to the introduction and practice (of psychomotor work in particular in Bulgaria). Ethical issues are of a deontological nature and are related to the emerging conflicts of interest.

1. Introduction

The issue of Psychomotricity and ethics (justice), especially in countries with problematic socio-cultural and socio-political guarantees, is important to be the subject of attention and care, as well as the moral status of psychomotricity in abrasive, less tolerant and more socially stratified cultures and circumstances, such as the Bulgarian one. Psychomotricity, introduced in an environment where there are insufficient guarantees of non-violence, should consider the context and be careful not to be absorbed by a culture of intolerance, exclusivity, social power and other phenomena.

The focus of this article is on the five trainings that the Bulgarian Association for the Development of Psychomotricity (BAPMT) has conducted in Bulgaria over the past 5 years (2 for psychomotor therapists, 2 for psychomotor pedagogues and one for trainers in "Integrative Psychomotor Therapy with Children") and the conclusions on the ethics of relationships in the Bulgarian context, as well as the impact on the practice of psychomotor specialists.

One important thing that determines the specificity of the work of trained psychomotor specialists in Bulgaria right now is that they work mainly with children. The article raises questions about both ethical relations in general and ethical problems in working with children, because they are particularly acute and cannot be resolved by the usual means of autonomy, which is shared as a norm among adults.

The neglect of context in psychomotor trainings affected the topics, behaviours and curricula, and this led to greater uncertainty for the trainees, who had to maintain two separate worlds – the one in which they live and the one in which they have to maintain psychomotor skills. The

challenge still is not to let the context devalue and destroy psychomotor intentions.

2. Psychomotor Therapy

Psychomotricity is a body- and movement-based method of pedagogy, rehabilitation and therapy of children and adults. Psychomotricity begins with the body and classic bodily roles in the lives of children and adults. It is practiced by people who are interested in movement in relation to socio-emotional development and mental well-being. This is where the expertise of the psychomotor therapist comes from in the field of movement and body-oriented intervention with the aim of improving psychosocial functioning and mental health in infants, children, adolescents and adults.

Psychomotricity considers the body, the nervous system and the mind as intimately connected in a common system, and the brain and nervous system as one moving body. According to a frequently used in literature and defined as a "canonical" formula by J. de Ajuriaguera it is "a body-in-relation; a corporeal evidence without which we are nothing; a visible somatic evidence (Descartes' res extensa); a "place for me", the most intimate around which psychic subjectivity and the most personal identifying narcissism establish, feel and imagine themselves". This brings psychomotricity close to the latest discoveries of neuroscience, which attempt to create theories based on the understanding that the mind belongs not to the body at all, but to the moving body[1,2].

With the understanding of the above constructs, BAPMT was established in November 2020. The first main goal of BAPMT was to organize and conduct psychomotor training in Bulgaria which is certified and standardized by European institutions.

A similar type of training and introduction of the method is happening for the second time in the last 25 years in Bulgaria and became popular as Psychomotricity 2.0. The current project started under the leadership of German trainers from the University of Applied Sciences in Darmstadt, Germany, with Bulgarian partners in BAPMT.

Over the past 5 years, we have gone through a process of intensive and systematic teaching of psychomotricity. this has happened on the background of at least one other process of psychomotor knowledge in Bulgaria - at the University of Plovdiv, in the Department of Pedagogy, where, in cooperation with Turkish, Portuguese and Belgian institutions, a manual was created.

In the practical work of the association, we outline two trainings on "Integrative Psychomotor Therapy with Children", two on "Educational Psychomotricity " and one for trainers. We have trained 64 psychomotor specialists.

BAPMT organizes and conducts monthly public lectures on various topics that concern both psychomotricity and play deprivation as a form of institutionalism and hospitalism, topics related to inclusion, exclusion and inclusion of children, application of psychomotricity in medicine, social services, rehabilitation and education. All of them are seriously attended and enjoy interest.

The psychomotricity trainings have led to disputes and conflicts that raise the question of ethics and therefore they will be presented briefly.

3. The neglected body

Although our body distinguishes us from all other beings and is what makes us unique, several scientific fields such as philosophy, psychology, history and even religion try to forget the body and push it into the territory of the negligible. This solitude is reduced only to somaticity in medicine and leaves aside the subjective state of the body, its experience, its vitality, its actions on the world and on others. Or in other words, its psychomotor activity.

There are authors who systematically and in-depth study the body and the psyche, which are in a complex and intricate interactive process, and argue that in fact clinical psychology, whatever its theoretical basis, is not yet a psychology of the body, a psychopathology of an embodied subject, existing only from and in its own body[3].

Prof. Amara Eckert spoke to a Bulgarian audience[4] about what we can call life in our body from the child's perspective, what is the importance of the body and bodily expression for human development, and how a child can be supported to use their body more through movement and play (and how psychomotor specialists work with this "toolbox" to help build the best self-image and a more meaningful existence), but such attempts are few.

The body is often neglected in everyday life and in the way children are raised and educated in Bulgaria (as well as adults). In institutions in Bulgaria, children are required to sit on chairs and at tables from a very early age, going outside to play is strictly regulated and even restricted, and during a hospital stay they are not allowed to move

and play [5,6,7,8], and even in the therapy rooms the work is done at a table. Here, if we must compare the pedagogical position with the psychomotor position, we must say that the pedagogical position (as well as psychotherapeutic position) is a position of existential security towards the other. In this regard, engaging with a moving body makes you do things that are much more immediate. You act from the position of what you feel through your body. The body requires speed that reflection and the mind catch up with (and sometimes overtake, of course). We never cease to feel challenged by what mutual play and partnership in play create, and by how one does not have much time to think in psychomotor work. Many pedagogical and psychotherapeutic schools seriously emphasize this important advantage: that you think that you are in greater balance towards the person in education or crisis. Thinking in Psychomotricity is as much present as it is challenged by the immediacy of the motor body work. Unlike mental interactions, psychomotricity as a bodily modality requires bodies to be present in their entirety and their exposure to one another. This both increases the possibilities and poses specific challenges to transference and countertransference, but it is generally overlooked as a possible helping interaction in Bulgaria.

4. Psychoanalytic Formulations vs. Case Work

In their training, many psychomotor therapists are tempted and feel very comfortable with every encounter with psychoanalytic formulations and explanations of child development.

In Bulgaria, this has several expressions. Dr. Vessela Banova's Psychomotricity 1.0., which started 25 years ago, has transformed over the years into an invitation to those who wish to become psychomotor therapists to qualify through psychoanalytic training in a Lacanian paradigm, and this case is pathognomonic for the conflict between the psychomotor and the psychotherapeutic. He shows how even in psychotherapeutic circles it seems clearly unacceptable to play with children physically and from this to develop the understanding that the connection through motor interaction is a right that is stably constituted in relationships. When this is replaced by psychoanalysis of the Lacanian type, for example, this leads to the impoverishment and emptying of psychomotricity.

For Psychomotricity 2.0 and BAPMT, these inclinations towards psychoanalysis were expressed in a translation of Bernard Aucouturier's book "We act, we play, we think"[9] and in a training in pre- and perinatal psychology, in which colleagues who have mastered the body (have they?) began to learn to analyse what happens in the womb or immediately afterbirth.

With this predisposition of colleagues tempted by psychoanalysis, the so-called case work is doubly difficult, is not part of the culture and is not recognized as an element of the professional identity of the new practitioners. The biggest ethical dilemma is whether to psychoanalyze or to work on the case by examining the children's problems by arranging the children's distress in a bio-psycho-social context.

5. The boundary between personal therapy and training

Another ethical dilemma that arose during the trainings in Bulgaria is where and how personal therapy comes in and how it is formulated in a training. This is a serious issue that has not been resolved for us.

In Bulgarian psychotherapy trainings, it is widely believed that personal therapy and training can and should take place in one institution, which raises the important question of the difference between training therapy and non-training therapy. This seems to be one of the unresolved paradoxes of psychotherapy, which is also present in psychomotor therapy trainings so far.

6. Private vs. State. The connection between the clinical and the extra-clinical world. Is there one?

Another important question that was raised in and around the trainings we conducted is where and how psychomotor therapists contact existing pedagogical or educational-rehabilitation environments – schools, kindergartens, family-type accommodation centres, where relationships are often quite abrasive.

What does the private practitioner do in his role as a representative of a protected paradise and an ideal place in a world of trauma, destructiveness, disrespect and aggression, and are we giving hope (well-paid) in an environment (especially regarding children) that is traumatic?

When working with children, it is a question of competencies from the register of social work, child protection, and early pedagogy. Psychomotor specialists

in Bulgaria are only now beginning to get to know the context deeply and on the one hand they have opinions and positions, but at the other hand they are helpless to react in the case of traumatic relationships that do not have any social corrective. I dare say that the connection of the clinical beginning with the extra-clinical world – with the world of other institutions, groups, authorities and dependencies – is not taught in psychomotor therapy training, nor is it taught in the master's program at Sofia University, which I completed[10].

7. Similarities and differences between ethical and therapeutic positions

Sometimes we witness cases in which there is aggression in professional communities from colleague to colleague, there are victims, abusers and developments in these relationships that take different directions. They require us to think about the question of how we replace ethics and how we take a position on whether a behaviour is acceptable or unacceptable and the difference between an ethical and a therapeutic position.

Cases of aggressive behaviour that is unacceptable for certain relationships occur both in BAPMT and in the psychotherapeutic communities in Bulgaria. At the last conference of the Bulgarian Association of Psychotherapy (https://psychotherapy-bg.org/news/xiii-naczionalna-konferenciya-na-balgarska-asocziacziya-po-psihoterapiya/), one of the most titled psychotherapists in Bulgaria verbally and aggressively attacked a colleague regarding his report. Aggressive behaviours happen and are often difficult to react to.

After the BAP conference, I wrote an article that caused many different reactions because it turned out that no one had raised the issue of therapist behaviour so sharply until now, although unacceptable behaviour has happened before. I believe that these developments stem from the privilege of not being part of the psychotherapy environment, as well as that they depend on a guest's freedom to rediscover a well-forgotten ethic.

Relationships between psychotherapists are more difficult to subject to ethical sanction than relationships between therapist and patient. One of the developments in these cases is to support the victim by sending him to supervision or therapy to begin to cope better with what happened. Another development is not to substitute the position that the behaviour is unacceptable and to be clear that the ethical position cannot be replaced by the therapeutic one.

From an epistemological point of view, this is also one-sided behaviour – we are dealing with one part, but we are not dealing with the norm of whether the behaviour is acceptable or not, whether it is ethical or not.

Here two problems are recognised – the first is about the nature of psychic reality – how to object, not only individually, but also collectively, and the second – about social reality – how the rest of the group to which you belong (or the therapeutic modality) takes or does not take a position on the situation in which you find yourself.

The ethical position is, I believe, for the group to support the person in objecting to violence, and not just to tell him to get treatment, and thus to help him regain his feeling that he is right when he objects to being treated improperly. This seems to be part of an ethical rehabilitation.

Against this background, the possibility of Psychomotricity in Bulgaria being psychotherapeutically treated is strong and will probably continue to gain even more momentum, remaining more in the field of the first development.

At the same time, I find that in world politics, psychomotor therapy is seen more as an ethics of relationships with people than as a modality that belongs to the class of overstructured and overregulated behaviours that fall into the register of psychotherapy.

Psychomotricity in the non-therapeutic key is quite vibrant, it meets with many different specialties, areas, approaches, people and relationships.

8. Power and therapeutic relationships

The contexts in which we practice therapeutic relationships in Bulgaria are complex and there are numerous and categorical references to the fact that power relationships permeate therapeutic ones and limit them, and sometimes even corrupt them. Of course, this falls urgently into the field of the ethical register and is resolved in a different way each time. We live in a country where we very often witness closure and a hierarchy of power, and against this background the possibility of psychomotor therapy being psychotherapeutic is strong and will probably continue to gain even more momentum.

9. Discussion

The ethical problems we encounter in short live of BAPMT are of these types:

1. Deontological – what rules do we follow and what are the consequences of following them (and not following them).

For example:

1.1. What is a good psychomotor curriculum? How relevant is it to the context of the local participants and their opportunities, abilities and skills for clinical work?

1.2. What, besides training in practical skills, does the development of psychomotor skills imply in an environment where they are absent?

1.3. What do we do with the expectations of the trainees for personal psychological care and to what extent this care, the so-called personal experience, comes into conflict with practical skills and theory, when the trainer/therapist is the same specialist. Does this quasi-incestuous situation encourage dependency?

2. Normative – what is good to do with the acquired knowledge/skills?

For example:

2.1. Should we "therapy" children with the method of psychomotricity or should we work for the humanization of their social environment and for their right to play and human connection? The first , the second or both? Why is the limitation to private practice so common and even widespread as a form of practical realization after training?

2.2. How to balance the "unlimited" possibilities of private practice to develop through solvent parents and the psychomotor needs of underprivileged social groups?

2.3. Is education/training the only way to develop Psychomotricity?

3. Conflicts of interest?

For example:

3.1. Should we spread psychomotor knowledge or use it as a bridgehead for our psychoanalytic schools, when we have accreditation for both trainings?

3.2. Who registers such abuses of training rights?

10. Conclusion

Psychomotricity is a new profession and an old new practice, whose professionalization takes an ethical risk in Bulgaria. Its defence creates conflicts with other territories that are regulated hierarchically and not always ethically. Its defence as a humanistic principle of the attitude towards children and people is far from uncritical, but on the contrary – it encounters resistance, which I believe comes from crystallized institutionalized forms of repression and control, as well as structural discrimination towards those in need.

In Bulgaria, family and institutional violence go hand in hand with the flow of children's mental life, which is not yet in the attention of psychomotor specialists. Trainees are not supported, prepared and equipped to assimilate this and keep it in mind while working with children. Attempts to practice occur as if thinking about the above dilemmas is unthinkable in any possible conceptualization and resisting it even less. One of the questions raised by the 5 BAPMT psychomotor trainings is whether there is such a thing as politically correct psychomotor training or psychomotor training that is done as if corruption in the environment in which it is taught is of concern to it. In addition to answering this and other ethical questions, we are about to plan a curriculum for the next psychomotor therapy training, in which the needs for dealing with these ethical dilemmas and conflicts are addressed and then to develop Bulgarian training contextualized, but at the same time licensed by European institutions, according to established standards.

Bulgarian society has many reasons to reflect on itself and to model itself to be more adequate to these problems.

The conclusion suggests that these problems will not be met solely by addressing them, but also by developing capacities. One of the urgent tasks for the society is to engage in such activities that help it navigate and make the burden of such conflicts less dangerous for the psychomotor process - such as opening the society to potential stakeholders and not only to the trainers and trainees whose interests it protects.

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[10] The author graduated with a master's degree in "Child and Adolescent Psychology: Diagnostics and Consulting" 2016-2019 at Sofia University "St. Kliment Ohridski".

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Section 2 | Practice insights: case studies and professional reflections

Designing Educational Spaces with Sand: A Higher Education Approach for Early Childhood Intervention

Annika Endres*, Marion Wieczorek*

* University of Education Ludwigsburg, Faculty of Special Education

Contact: annika.endres@ph-ludwigsburg.de; wieczorek@ph-ludwigsburg.de

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ABSTRACT

Designing educational spaces for free play for young children with disabilities or developmental delays (birth to six years) is a key component of early childhood intervention (ECI) programmes in Germany. Free play, particularly with sand, can foster exploration and creativity, especially in children under three years of age with developmental challenges. Sand play is central to young children's lives and commonly occurs in environments such as beaches, sandboxes, and daycare centres. Creating these spaces requires integrating knowledge of child development, disabilities, material properties, pedagogical principles, collaboration with parents, and spatial organisation. The "sandroom" seminar combines these elements, focusing on play development and the significance of sand play as a developmental activity for children with disabilities. Previously taught separately in the master's programme in ECI, these aspects are now integrated into a practice-oriented seminar for graduate students. This seminar introduces a practical intervention, teaching students to design educational spaces using sand while emphasising the importance of free play in fostering child development. By connecting developmental theories with pedagogical and didactic elements, the seminar creates a tangible link between theory and practice, preparing students for their future professional roles in supporting children and parents.

1. Introduction: The Importance of Designing Educational Spaces in Higher Education

Designing educational spaces tailored for young children with disabilities or developmental delays from birth to six years old is a crucial aspect of training students in early childhood intervention (ECI) programmes in Germany. To create developmentally appropriate environments, professionals must integrate a variety of concepts and materials. This includes an understanding of child development, the specific needs of children with disabilities, and the quality and properties of materials. Additionally, it requires insights into pedagogical principles for guiding children's play as well as collaborating with parents. Furthermore, aspects such as the organisation of the available space should be incorporated into the planning and design process. All these components were previously covered in separate seminars within the master's programme in ECI. In the "sandroom" seminar, those components are combined and put into practice, focusing on play development. For children under three

years with developmental delays or disabilities, free play provides crucial opportunities for exploration and creativity. In the daily lives of young children, playing with sand is central (Frost, 2010): it is an integral part of their world, explored and enjoyed in places such as beaches, playgrounds, sandboxes, and daycare centres. Although children gather extensive experiences with sand, research on how sand play supports child development is limited (Iivonen et al., 2024). Similarly, the quality of sand as a material for exploration has not been extensively studied. Schwarz and Mimler (2017) identify a gap in early childhood educational research in one of the few German-language articles on sand play. They highlight that sand is a popular yet under-researched medium for children's play.

2. Developmental Background: Sand as an Educational Material for Children's Exploration

The various types of sand, whether wet, dry, damp, coarse or fine, provide a wide range of play opportunities. Sand, as a material, offers unique properties due to its classification as granular matter (Iivonen et al., 2024). Although sand is granular and can be categorised as a solid, it also behaves like a liquid. Its granular structure allows it to be easily moved, shaped, and distributed. It can be piled into a mound and shaped when moist (Welland, 2009). Unlike water, dry sand has distinct flow characteristics. Its fluidity and malleability depend on grain size, particle shape, and moisture content (Nordmaier & Schlichting, 2006; Schlichting, 2017). From a developmental and educational perspective, sand is an intriguing material that creates diverse developmental opportunities in children's worlds. Sand provides countless opportunities for sensory development (Frost, 2010): touching, pouring, leaving traces, drawing shapes and burying items in sand all engage visual, auditory, proprioceptive, and vestibular sensory areas. When playing with sand, children use tools such as shovels and buckets, fill moulds, or let sand trickle through their fingers. Integrating these activities into sand play can support the development of fine motor skills, particularly hand-eye coordination (Iivonen et al., 2024). Furthermore, sand, as an amorphous material, allows children to be creative and develop symbolic thinking patterns (Roesler, 2019). They create imaginative worlds where castles are built, or "cakes" are "baked." Additionally, sand play areas provide room for collaborative play and interaction between children. Sharing materials and exploring the sand together can support socio-emotional development, such as reciprocal communication, enduring frustrations, and finding joint solutions to conflicts (Baines & Blatchford, 2010). Overall, sand creates developmental spaces for children's exploration and experimentation, which, due to its significant connection to their world, can be integrated into early childhood educational programmes.

3. A Seminar for University Students on Designing (Special) Educational Spaces with Sand in Early Childhood Titel

3.1. Conceptual Background, Design and Method

As demonstrated by the observational study by Schwarz and Mimler, the quality and quantity of children's play activities with sand depend heavily on the design of the sand play area. Observations of children in outdoor play areas at daycare centres highlight the sandbox as one of the most popular play zones. However, the findings also point to a limited variety of play activities within the sandbox. The authors attribute this outcome to the constrained assortment of classic sand toys, such as buckets, shovels, and moulds. They provide two key recommendations:

1) Offer a wider variety of everyday play objects that extend beyond classic sand toys.
2) Transform the "classic" sandbox into an expanded sand area that facilitates new spatial and motor experiences.

These recommendations can be conceptually realised in various ways. One such possibility is the "sandroom" concept (Strub, 2021), developed within the context of Pikler pedagogy. Unlike existing concepts such as sandboxes, sand trays, and sand tables, a sandroom permits the entire (indoor) space to be utilised for sand play. Different levels, tailored to the children's size and motor abilities, allow for play while standing, sitting, kneeling, or lying on the floor, thus accommodating the movement needs of young children. Other features of the

room designed for rest and movement complement the play offerings and encourage sustained attention and in-depth play. All the developmental and learning opportunities inherent in sand play manifest through free play. By playing freely and without external directives, children engage deeply and persistently with objects that capture their interest. They experiment with various activities, independently discovering the properties of materials, and thereby develop their skills. Through self-directed actions, they experience self-efficacy and build self-confidence. As they explore their environment, they raise questions and seek answers, learning to challenge themselves and confront these challenges (Tardos, 2010).

In our seminar, we advanced the sandroom concept emerging from early childhood education into a university course for graduate students. The course aims to guide students in designing and reflecting on sandrooms as (special) educational offerings. The target audience for this higher education approach comprises graduate students who will become future educational professionals in the field of early childhood intervention. The seminar aims to fundamentally connect theory and practice by linking theoretical knowledge on play development, the design of dedicated spaces, and parental cooperation to practical implementation.

The type of sand used in the seminar is washed and finely grained. The dry play sand exhibits unique pouring properties and invites exploration and experimentation (Nordmaier & Schlichting, 2006; Schlichting, 2017; Welland, 2009). Combined with diverse materials, it enables the development of relevant play themes for early childhood, such as filling, pouring and transferring, collecting and transporting, as well as symbolic play. By engaging with sand play using aesthetically appealing objects and through self-reflection, students are expected to understand the significance of free play and the learning and developmental opportunities inherent in sand play. The seminar provides students with various opportunities in each session to explore the sand both with and without materials. The seminar is delivered through team teaching, enabling students to experience the integration of diverse professional perspectives in a cooperative seminar environment. Consequently, the essential theory-to-practice transfer is inherently incorporated into the seminar.

3.2. Application

The seminar took place weekly over a period of 14 weeks, with each session lasting 90 minutes. The seminar began with an exploration of sand, focusing on personal experiences and memories related to playing in sand. Based on this, students examined play development and free play according to Pikler. They identified play themes and materials that children use when playing in sand. In this context, discussions were held about which materials facilitate specific play themes. Building on this, the students explored ways to design educational spaces using sand and various materials and tested specific objects for their play value. A central question was how an educational space should be designed to enable free play inspired by Pikler. This was based on the concept of "Strandgut" by Strub (2021). To practically apply the theoretical content, an excursion to a sand playroom was organised. In this space, the students were able to engage in play themselves, and also had the opportunity to speak with educators who work in this environment daily, as well as with parents who visit the room with their children. The observations and insights gained during the excursion were subsequently analysed in the weekly seminar. Open questions raised by the students during the excursion were collected and answered on the basis of scientific findings on sand play (Iivonen et al., 2024; Schwarz & Mimler, 2017). In this process, the characteristics of sand spaces, their materials, and spatial design were further examined in depth. Following this, the seminar focused on communication within the sand playroom. Drawing on early communication development, the seminar explored how children and parents can be supported in various ways in the sand playroom. Using videos and case studies, specific play situations in the room were discussed, contrasting the various possibilities for children's support according to Pikler, and expanding on this with Reggio Emilia pedagogy.

4. Conclusion

In conclusion, understanding and integrating the developmental aspects, themes, and materials of children's play with sand into the training of future early

intervention, professionals can equip students with the capacity to design developmentally beneficial and educational spaces in daily life for young children, particularly in the context of developmental delays and disabilities. The seminar is a practice-oriented, weekly offering for students, combining developmental theoretical aspects of children's play and communication with pedagogical and didactic elements of spatial design and the educational support of children and parents. The basic structure of the seminar can be flexibly adapted: for example, to strengthen the theory-practice connection, the seminar could also be designed as an intensive block seminar. In this format, a theoretical block session at the university could be followed by an extended practical session in an early childhood sand playroom, which would then be reflected upon back at the university. By fostering exploration, collaboration, and creative problem-solving, a teaching concept centred on children's play with sand can overall prepare students both theoretically and practically for the challenges they will encounter in their future careers in early childhood intervention.

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Section 2 | Practice insights: case studies and professional reflections

Psychomotor Approaches to Graphomotor Skill Development in the Classroom

Judith Sägesser Wyss*, Joséphine Schwery Klingele*, Michael Eckhart*, Michelle N. Maurer*,**

*Department of Special Needs Education, Bern University of Teacher Education, Bern, Switzerland, **Norwegian Reading Centre, University of Stavanger, Stavanger, Norway

Contact: Judith.Saegesser@phbern.ch

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ABSTRACT

Swiss psychomotor therapy is closely integrated into the national education system and plays a key role in promoting graphomotor development – an important foundation for writing and reading acquisition. This article presents two complementary tools: GRAFOS-2, a diagnostic tool for assessing the graphomotor skills of children aged 4 to 9, and GRAFINK, which provides teaching materials, a didactic framework, and guidelines for successful collaboration between psychomotor therapists and teachers. Both tools are based on a psychomotor approach that combines standardised assessments, qualitative observations, and practical strategies for inclusive education. They foster interdisciplinary collaboration between teachers and psychomotor therapists and promote developmentally appropriate, individualized support for children with and without graphomotor difficulties in the context of inclusive education. GRAFOS-2 is currently being adapted and standardised for Italian- and French-speaking regions, which underlines the international relevance of a psychomotor perspective on handwriting acquisition.

Introduction

Swiss psychomotor therapy is characterized by its institutional embeddedness in early education, particularly through mandatory inclusion in kindergarten and primary school curricula under national legislation. This framework ensures universal access for children experiencing challenges in integrating motor, sensory, emotional, social, and cognitive developmental processes—irrespective of socioeconomic or cultural background. The integration of psychomotor therapy into schools—and the department's internationally pioneering role in this context—can be traced back to its recognition as a school-based or therapeutic educational option around 50 years ago (Sägesser Wyss, 2024).

The structural integration of therapy within educational settings has fostered decades of specialized research in psychomotor therapy, for example in the field of graphomotor competencies development—a dedicated subfield of psychomotor therapy addressing the complex interplay between handwriting, fine motor control, and cognitive-emotional factors (Hurschler Lichtsteiner, 2023; Jurt Betschart et al., 2019; Maurer et al., 2023a; Maurer et al., 2023b; Sägesser Wyss, 2024; Sägesser Wyss et al., 2024; Sägesser Wyss & Eckhart, 2016; Truxius et al., 2025; Truxius et al., 2024; Vetter et al., 2009). This research and development is significant not only for Switzerland but also internationally.

This contribution provides an exemplary insight into Switzerland's longstanding expertise in graphomotor skills by presenting the diagnostic tool GRAFOS-2 (Sägesser Wyss et al., 2024). The instrument's design and application highlight the intersection between psychomotor therapy and education, emphasizing the essential collaboration between psychomotor therapists and teachers. GRAFOS-2 is intended to developmentally assess graphomotor competencies and to provide a foundation for supporting children with graphomotor challenges in both educational and therapeutic settings. As such, the tool is not only relevant within Swiss psychomotor therapy but is also currently being translated, standardized, and culturally adapted for use in Italian- and French-speaking regions.

This article begins by exploring the specific contribution of psychomotricity to graphomotor development and handwriting acquisition—expanding the traditional perspective of handwriting research. It then highlights the foundational role these skills play in the development of reading and writing abilities. Building on this conceptual foundation, it details the three components of the GRAFOS-2 instrument, illustrates the practical implications of a psychomotor approach, and outlines how lessons can be structured to support diverse learners in heterogeneous classrooms. The article concludes with discussing the ongoing adaptation of GRAFOS-2 for Italian and French educational contexts.

Theoretical Background

Description of a psychomotor perspective on graphomotor skills and handwriting acquisition

In Swiss psychomotor therapy, the acquisition of graphomotor skills is regarded as a complex psychomotor task. This perspective is grounded in the understanding that graphomotor development relies on gross and fine motor skills, sensory processing, and sensorimotor coordination (Sägesser Wyss, 2024).

Children develop graphomotor skills during early childhood through activities such as movement games or drawing long before they formally learn to write.

Core components of handwriting acquisition, such as visuomotor integration and fine motor skills, are therefore closely linked to broader aspects of early childhood development, as children draw upon foundational skills acquired early in diverse contexts (Vetter et al., 2021).

This approach emphasizes the acquisition of handwriting from a psychomotor rather than a purely linguistic perspective and introduces a diagnostic and supportive dimension that is often overlooked in both research and educational practice. Furthermore, psychomotor therapy attaches great importance to the full range of children's means of expression in their psychosocial environment (Vetter et al., 2009, 2021). The basic ability and willingness to communicate also form an essential foundation for written expression. In this respect, both psychomotor therapy and graphomotor research take a broader approach than traditional handwriting studies and offer a valuable link to the development of a child's general communication skills.

The importance of graphomotor competencies in literacy acquisition

Beginning writers must tackle the dual challenge of learning to compose texts linguistically while simultaneously mastering transcription processes, such as handwriting, typing, and spelling (Berninger & Winn, 2006). This occurs while their executive functions, which are fundamental cognitive processes (Evers, 2019), are actively engaged (Labrecque et al., 2013; Speck-Hamdan et al., 2016). In the context of graphomotor competencies, executive functions facilitate goal setting, planning necessary movements and actions, and evaluating, revising, and focusing on the writing process (Berninger & Winn, 2006). Working memory, a crucial component of executive functions, describes a memory system that supports our ability to maintain individual aspects while performing complex tasks (Baddeley et al., 2015). According to Odersky (2018) the limited capacity of working memory inevitably leads to conflicts during the simultaneous processing of subprocesses involved in written language production. When a child writes down an internally formulated idea, it must be held in working memory until the hand has transcribed it (Nottbusch, 2017). The duration of this process determines the length of interruption in the linguistic production of the text.

In the context of handwriting acquisition, it is therefore crucial to automate the subprocesses that can be

automated to free working memory capacity. This allows children to recall spelling rules or planning the next word to write. The subprocesses that can be automated, referred to as transcription skills, include the so-called "lower hierarchy" processes, which also encompass graphomotor skills (Sturm et al., 2017). In contrast, the processes of text production, i.e., the "higher hierarchy" processes, should not and cannot be automated (Odersky, 2018; Philipp, 2020; Sturm et al., 2017; Wicki et al., 2014). The distinction between "lower hierarchy" and "higher hierarchy" processes reflects the difference between automatable and non-automatable subprocesses (Sturm et al., 2017). This raises the question not only of how to identify processes that hinder the automation of graphomotor sequences in everyday school life, but also how to appropriately support children who struggle with those skills in the classroom. Although early difficulties with handwriting do not necessarily directly predict later handwriting (Duiser et al., 2020), research shows a certain degree of stability in handwriting among young children (Truxius et al., 2025). This suggests that graphomotor difficulties in kindergarten and early primary school years should not be underestimated.

Various studies show that graphomotor skills are central to handwriting acquisition: Children in early primary grades who copy shapes more accurately tend to write more legibly, their texts are of better quality, and they typically write more fluently (e.g. Duiser et al., 2020; Kaiser et al., 2009; Truxius et al., 2023). In contrast, children with difficulties in visuomotor integration often exhibit less legible handwriting (Feder & Majnemer, 2007; van Hartingsveldt et al., 2015). Similarly, children with poorer fine motor skills tend to show reduced handwriting legibility (Hamstra-Bletz & Blöte, 1993; Kim & Park, 2019; Parush et al., 2010) and lower handwriting fluency (Wicki & Hurschler Lichtsteiner, 2018). Fine motor skills and visuomotor integration, as central precursors of graphomotor skills, have also proven to be important predictors of early academic performance (Carames et al., 2022; Martzog et al., 2019; Suggate et al., 2018, 2019).

Moreover, a correlation has been identified between graphomotor skills and graphomotor self-concept (Schwery Klingele et al., 2025). It can be hypothesized that a low graphomotor self-concept is associated with decreased propensity to invest effort, reduced persistence in the face of challenging tasks, less ambitious goals, and increased avoidance behaviour (Denissen et al., 2007; Musu-Gillette et al., 2015). Consequently, this may have a significant impact on literacy performance (Connelly et al., 2005; Danna et al., 2016). These findings highlight the importance of early identification and targeted support for children experiencing graphomotor difficulties, for which the GRAFOS-2 instrument can serve as a valuable tool.

Diagnostics and approaches to support with GRAFOS-2

The diagnostic instrument GRAFOS-2 (Sägesser Wyss et al., 2024) is designed to assess the graphomotor development of children aged 4 to 9 years. The instrument is embedded in a child-friendly narrative framework and consists of three parts: a *screening* tool (quantitative method) for identifying children with graphomotor difficulties in a classroom context, an *observation sheet* (qualitative method) for analysing the writing process in everyday school life, and *differential diagnostics* (qualitative method) for detailed assessment of graphomotor development areas in children with difficulties. This comprehensive approach allows for a multifaceted understanding of a child's development, facilitating the creation of tailored support. The combination of quantitative and qualitative methods, as implemented in GRAFOS-2 (Sägesser Wyss et al., 2024), provides a solid foundation for holistic support.

The tool allows for a largely language-independent analysis of graphomotor precursor skills and the foundations for handwriting. This language independence is particularly important due to the complexity of handwriting acquisition. It enables the analysis of graphomotor skills as an automatable, "low-hierarchy" subprocess of text production (Sturm et al., 2017), independent of linguistic skills, and their targeted inclusion in support.

The *screening* is structured along the development of drawing geometric shapes and captures the central predictors of graphomotor skills: visuomotor integration and fine motor skills. The screening consists of two screening sheets. In Screening Sheet 1, all children draw

eight small basic elements of writing (i.e., line horizontal, line vertical, circle, cross, triangle, square, arc down, and arc upside), while first and second graders in addition draw four slightly more complex geometric shapes (i.e., connected loops, rhombus, drop, and horizontal eight) on Screening Sheet 2. On both screening sheets, children are asked to copy each of the shapes six times in 1 cm^2 boxes from a template. The small size of the shapes was chosen so that finger movements (as opposed to wrist and arm movements when drawing bigger shapes; the Visuomotor Integration Test (Beery et al., 2010) can be captured (Cameron et al., 2015). The accuracy of each copied shape is evaluated using predefined criteria and scored as either 1 (accurate) or 0 (inaccurate). For example, a triangle is considered accurate if it meets the following conditions: it consists of three straight lines, has no gaps, no corner exceeds 90 degrees, at most one line may be slightly curved, and the base of the triangle deviates no more than 20 degrees from the horizontal axis (Sägesser Wyss et al., 2024). The child's overall accuracy is then calculated as the mean score across all shapes.

Regarding the reliability of the screening, inter-rater agreement between two independent raters was assessed using Cohen's Kappa and yielded a value of $\kappa = 75$ (based on 712 shapes), indicating a substantial level of agreement (Altman, 1991). In addition, the internal consistency of the screening was high, with Cronbach's alpha values of .80 for the basic shapes (Screening Sheet 1) and .77 for the more complex shapes (Screening Sheet 2). These values are based on a norming sample comprising 670 kindergarten children and 2,016 school children (Sägesser Wyss et al., 2024). The screening procedure is standardized not only in its administration and scoring but also in its interpretation, ensuring consistency and reliability across assessments. This standardized approach enables the comparison of children's graphomotor performance and its classification within the graphomotor development trajectory, based on established norm tables. The tables are derived from the mean accuracy scores of children at specific ages. A mean accuracy score within 1 standard deviation (*SD*) of the age-specific mean indicates no need for graphomotor support. Scores exceeding 1 *SD* suggest a moderate need for graphomotor support, while scores exceeding 2 *SD* indicate a high need for graphomotor support. Such classification serves as a foundation for the development of targeted support. The screening is complemented by an observation sheet that supports targeted observation of the writing and drawing process, which is an essential component in developing support strategies. Observing posture and movement during GRAFOS-2 provides valuable insights into a child's stage of motor learning and the development of graphomotor coordination skills, without the influence of linguistic factors (Odersky, 2018). The observation sheet focuses on posture, movement ability, and the motivation with which children draw or write. For example, the following aspects are observed (Sägesser Wyss et al., 2024):

- **Sitting posture**: Maintaining a stable posture is essential for executing fine and graphomotor movements (Bertenthal & von Hofsten, 1998). If a child exhibits postural instability, this may indicate the need for additional support in developing gross motor stability, alongside age-appropriate graphomotor support.
- **Pencil grip and finger movements**: An optimal pencil grip supports efficient finger movements during writing or drawing, enabling control of the pencil primarily through the fingers—a hallmark of a mature pencil grip (Rolf, 2013). Mastery of this skill requires adjusting muscle tension and coordinating movements across the shoulder, arm, hand, and fingers while writing. It is often observed that children do not move their fingers adequately and tend to apply excessive pressure when writing, which can lead to quick fatigue and reduced writing endurance.

The observation is qualitative, based on theory-driven criteria. However, the need for support is also determined quantitatively here, i.e. by counting conspicuous areas. It is important to use the screening and observation sheet together to obtain a complete picture of the drawing result (Screening sheet) and the drawing process (observation sheet) in the school context. Some children may draw all the shapes on the screening sheets appropriately for their age, yet the drawing process may involve excessive

pressure, an immature pencil grip, and noticeable effort—, indicating a need for support despite the seemingly age-appropriate outcome. For children showing significant difficulties, the psychomotor specialist can conduct differential diagnostics with GRAFOS-2. The third part of the tool, differential diagnostics, enables an in-depth analysis of complex graphomotor development (Sägesser Wyss et al., 2024).

Additionally, fundamental, subject-specific analyses are conducted, such as the analysis of eye movements. Eye movements are important for the development of visual perception (Case-Smith & Clifford O'Brien, 2010). Coordinated head movements, which can be performed independently of shoulder girdle or trunk movements, form another area that is been analysed in the differential diagnostics. These are crucial for learning manual tasks and for adjusting the head appropriately when moving and acting in space (Bertenthal & von Hofsten, 1998). Another example of area of analysis in the differential diagnostics of children who showed difficulties in the screening is the analysis of selected perceptual aspects. These include basic tactile-kinaesthetic perception as the foundation of fine motor development and basic visual perception as a central foundation of visuomotor integration (Sägesser Wyss & Eckhart, 2016).

The results of the differential diagnostics provide detailed insights into child development in areas crucial for the development of graphomotor skills. This enables psychomotor therapists, in collaboration with teachers, to set targeted priorities for integrated support.

Psychomotor approaches to graphomotor skills

The diversity within a classroom is significant, with each child bringing different prerequisites for learning handwriting. This variety can be particularly challenging for teachers, as not all children achieve the same goals with the same tasks at the same time. However, if the teaching approach is adapted to the existing diversity (e.g. Sägesser Wyss et al., 2021), this heterogeneity can be seen as an enrichment and opportunity (Prengel, 2019). In this context, it is important to emphasize that the diagnostic process does not conclude with the administration of the GRAFOS-2. Instead, it should be continuously extended through ongoing classroom observations. The collaboration between the psychomotor specialist and the teacher plays a key role in fostering the continuous development of lessons that support all children. To support the success of multi-professional collaboration between psychomotor therapists and teachers, the GRAFINK framework model was developed at Bern University of Teacher Education (PHBern) (Sägesser Wyss et al., 2021).

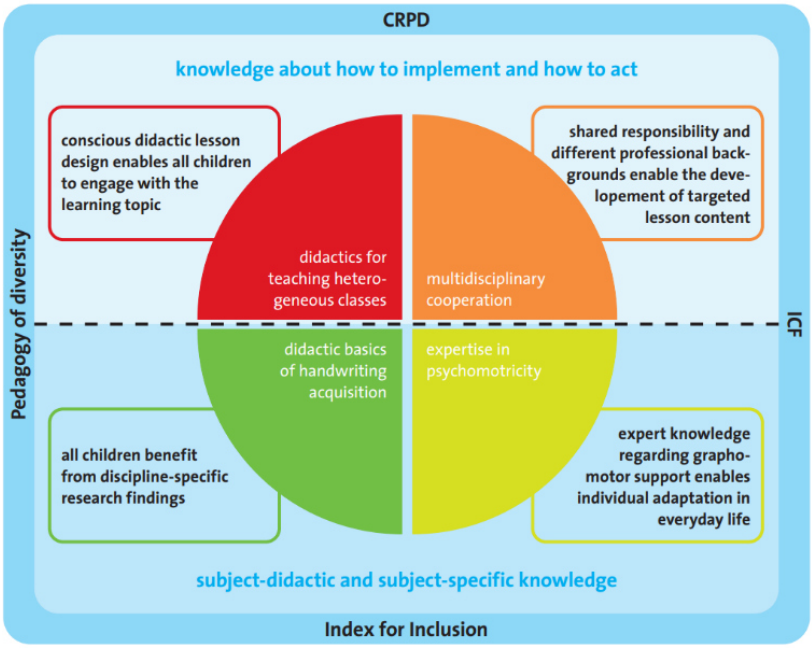

Figure 1. *The Frame Model GRAFINK (Sägesser Wyss et al., 2021)*[1]

The upper half of the model shown in Figure 1 underscores the importance of implementation and practical knowledge. This includes didactic competence in designing lessons for heterogeneous classrooms, as well as the establishment of clear rules and agreements that facilitate effective multi-professional cooperation.

The lower half of the model focuses on the integration of subject-specific didactic knowledge, typically contributed by the teacher, and subject-specific therapeutic knowledge related to supporting children with graphomotor difficulties, provided by the psychomotor therapist. Together, these areas of expertise form the basis for collaboratively developing inclusive lessons in which all children can actively participate.

The model is grounded in key international and theoretical frameworks, including the UN Convention on the Rights of Persons with Disabilities (UNO, 2006), principles of inclusive education (e.g. Prengel, 2019), the Index for Inclusion (Booth & Ainscow, 2002), and the International Classification of Functioning, Disability and Health (ICF) (WHO, 2017).

It is crucial to establish a strong foundation for each child to support long-term, motivated practice, as learning to write by hand is a complex and lengthy process (Achymy et al., 2022). Motivated practice over an extended period requires a variety of learning opportunities that ensure every child can engage with tasks they can complete successfully and independently (Sägesser Wyss et al., 2021).

This is where psychomotor approaches can be effectively utilized. Diverse sensorimotor approaches and individually tailored instructions enable different children to access shapes, letters, and writing (Santangelo & Graham, 2016). Letters and shapes can be perceived and recognized in different ways and can potentially be translated into drawings or written characters through visual, tactile-kinaesthetic, or auditory means. Children often find it exciting to identify shapes by the sound they make when drawn on a resonant surface, to feel letter shapes hidden in a bag, to draw letters on each other's backs and guess them, and finally to recreate what they have perceived through drawing.

To ensure that all children are both challenged and supported according to their abilities, it is important to adapt the level of difficulty to each child. One way to explore the same topic at varying levels of complexity is by grouping letters based on similar shapes. For example, one group of children might work with round shapes, another with letters that include curves, and a more advanced group with words or sentences containing curved letters. Using round shapes and letters as a common thread across activities can help unify learning experiences within the class (Sägesser Wyss et al., 2021).

For example, the lesson might begin with all children participating in a movement game involving circular motions, followed by a search for round-shaped objects in the room. Afterwards, some children might draw circular shapes on paper, others might write selected letters that feature round elements, and another group could look for words or sentences containing as many round letters as possible. Practicing shapes and letters is best done by involving as many sensory systems as possible (see Sägesser Wyss et al., 2021 for more information). It is important that a lesson includes activities that all children can engage in together, as well as differentiated tasks that cater to the individual skill levels of each child (Eckhart, 2019). Furthermore, it is essential for children's self-concept and motivation that they regularly reflect on what they have achieved during a specific lesson at their individual learning level, and consider what they would like to learn next (Santangelo & Graham, 2016). To strengthen a child's self-concept, they must recognize what they have newly learned and that they are making progress in comparison to their own previous performance (e.g. Lüdtke et al., 2005; Trautwein & Möller, 2016).

GRAFOS-2 in German, Italian, and French

Since its initial publication in 2016, the diagnostic tool GRAFOS has undergone continuous development (Maurer et al., 2023b) and is widely used by both teachers and psychomotor specialists. Due to its new perspectives on

handwriting acquisition and graphomotor difficulties, the instrument fills a critical gap in both educational and therapeutic settings. By emphasizing the key predictors of handwriting—particularly visuomotor and fine motor skills related to shapes and form sequences that are independent of any specific writing system—this approach is broadly applicable across countries and language regions.

GRAFOS-2 has recently been translated, adapted, and newly standardized for the Italian-speaking region through collaboration with researchers and practitioners in Italy, using a comprehensive sample. Following Italy, France and the French-speaking regions of Switzerland are preparing to translate and standardize GRAFOS-2 for use in their respective contexts. This growing international interest highlights that GRAFOS-2 addresses a gap in special education and psychomotor diagnostics, showing its relevance beyond national borders. However, transferring a diagnostic instrument across countries presents challenges—not only due to language differences, but also because of variations in educational systems and didactic approaches, all of which impact children's graphomotor development. For instance, psychomotor therapy is more firmly established within Swiss schools than in Italy or France. GRAFOS-2 places strong emphasis on close collaboration within educational teams and seeks to provide holistic support for children across both therapeutic and educational settings. While such interdisciplinary collaboration is more implemented in Switzerland, it remains an area for development in many other countries, where GRAFOS-2 may initially find its primary application in therapeutic rather than educational contexts.

Consequently, not only translation and standardization, meaning the establishment of new norms for Italy and France, but also adaptation to the local conditions is necessary to make the tool applicable in these regions. Comprehensive standardization within each region allows for comparisons of a child's development with peers from the same cultural and educational context, thereby helping to identify children in need of support. Early detection of graphomotor difficulties is crucial, as poor handwriting can negatively affect children's performance across various subjects and impact both their school motivation and self-concept (Duiser et al., 2020).

While the translation and adaptation of GRAFOS-2 for Italy are nearing completion, France and the French-speaking part of Switzerland are preparing to begin data collection in their respective regions to develop the respective norms. We have trained the project leaders from Italy, France, and the French-speaking part of Switzerland in the use of the diagnostic instrument, enabling them to carry out data collection and analyse the results, which will serve as the foundation for regional standardization. Looking ahead, our vision is to expand the usability of GRAFOS-2 to, for example, the UK and Spain, further broadening its accessibility. There is great potential in further developing and promoting a psychomotor perspective on handwriting acquisition and support internationally.

Discussion and conclusion

Handwriting is not approached as a purely linguistic or cognitive task, but as a complex psychomotor process shaped by fine motor skills, visuomotor integration, motivation, and self-concept. This perspective highlights the potential benefits of adopting psychomotor-informed and inclusive pedagogical practices in broader educational contexts.

The integration of psychomotor therapy into the Swiss education system offers a distinctive and effective framework for the early identification and support of children with graphomotor difficulties. The GRAFOS-2 diagnostic tool enables developmentally appropriate assessment of handwriting-related competencies, while GRAFINK provides a practical foundation for inclusive and differentiated handwriting instruction. Together, these tools create a valuable bridge between diagnostic insight and classroom implementation, underscoring the importance of interdisciplinary collaboration between teachers and psychomotor therapists.

As GRAFOS-2 is adapted for Italian- and French-speaking regions, careful consideration must be given to differences in educational systems, teacher training, and the structural conditions for collaboration between psychomotor therapy and schools. Its international relevance and language-

independent design offer promising potential; however, implementation may require context-specific solutions. In some countries, fostering stronger links between psychomotor therapy—often rooted in the medical domain—and the school system will be essential. Continued translation and adaptation of GRAFOS-2 could enable meaningful cross-national comparisons of early graphomotor development in relation to diverse educational frameworks.

[1] Figure reproduced from Sägesser Wyss et al. (2021), with permission.

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Section 3 | Global policy, professional horizons, and developments in Psychomotricity

Student's Academy Portugal 2025 – A report from a student's perspective

Franziska Hoffmann, Anna Saur

The Student's Academy Portugal 2025, held from April 3rd to 6th at the Faculty of Human Kinetics, University of Lisbon, brought together students and professionals in psychomotricity from across Europe for an enriching exchange of knowledge, practice, and perspectives. The event featured academic lectures, institutional visits, practical workshops, and cross-cultural networking, emphasizing the diversity and relevance of the field. Key discussions focused on the professional identity of psychomotricity and its interdisciplinary applications, from education to mental health and social inclusion. Through immersive experiences and collaborative reflection, the academy fostered meaningful connections and highlighted the importance of international cooperation in advancing the theoretical and practical dimensions of psychomotricity.

Keywords: Student's Academy Portugal 2025, Professionalization, International Collaboration

From April 3rd to 6th, 2025, the Faculty of Human Kinetics at the University of Lisbon (FMH-UL) hosted this year's Student's Academy Portugal. The event brought together mainly students and some professionals in the field of psychomotricity from across Europe, providing a rich platform for the exchange of knowledge, practice, and professional perspectives.

After the registration, the academy began with a formal opening ceremony featuring contributions from academic leaders, representatives of professional associations, and local authorities. The following lecture by Prof. Dr. Rui Martins (founder of APP, ex-President and Vice-President of APP and EFP, full teacher at FMH-UL) addressed key conceptual and methodological challenges related to the professionalization of psychomotricity, raising the fundamental question of a coherent professional identity – an issue of growing relevance in ongoing international discussions about the field. Right after the opening ceremony, the first connections were made with other psychomotricity students from across Europe, which deepened over the following days. Together, we were taken to the hotel in Paço de Arcos, where we spent the first evening together.

On the second day, the participants took part in small-group visits to specialized institutions across Lisbon, Sintra, and Oeiras. These included child and adolescent psychiatry units, a special education school, a therapeutic riding center, and organizations supporting the social and vocational inclusion of individuals with developmental challenges. The diversity of these institutions highlighted the broad spectrum of psychomotor applications, from early intervention and inclusive education to mental health care and community-based rehabilitation. After the various visits, all students came together for a shared lunch at the

Canteen of the Municipality of Oeiras. In the afternoon, the Municipality of Oeiras offered a visit to the Gardens and Palace of the Marquis of Pombal. Afterwards, there was time for sightseeing and personal exchange.

Saturday provided hands-on engagement through thematic workshops exploring current approaches such as psychomotor intervention in executive functions, graphomotor skills (reconnecting the body with writing), and trauma-related psychomotor therapy. The afternoon was dedicated to networking: students from each country presented the structure and status of psychomotricity training and professional recognition in their respective contexts. This exchange was complemented by an academic lecture on psychomotricity and neuroscience and a practice of the narrative in motion. The day ended with a sunset party, supported by the Student's Association of FMH-UL, who did a great job organizing the entire stay. It was a moment to share experiences and impressions from the Student's Academy 2025. Several members of the European Forum of Psychomotricity also took part. Conversations went beyond the student perspective and included deeper discussions about psychomotricity. Additionally, the evening offered diverse insights into the different European countries.

The final day featured a closing lecture by Prof. Vítor da Fonseca (author, researcher, founder and associate number 1 of APP, Professor Emeritus of the FMH-UL) on the role of embodied processes in neurocognitive development.

The closing ceremony followed, providing a space for shared reflection on the insights gained and the added value of international collaboration within the field. During these four days, meaningful connections and even friendships were formed, which made saying goodbye all the more difficult.

The Student's Academy Portugal 2025 clearly demonstrated the value of international cooperation in advancing both theoretical and practical dimensions of psychomotricity. By integrating academic discourse, real-world practice, and intercultural dialogue, the academy contributed meaningfully to the professionalization and visibility of psychomotricity across Europe.

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Section 3 | Global policy, professional horizons, and developments in Psychomotricity

In Dialogue for the Future of Psychomotor Therapy

A Review of the Research Colloquium by Psychomotorik Schweiz on March 22, 2025

Nadja Ulmann, Judith Sägesser Wyss

At the research colloquium organized by Psychomotorik Schweiz, the Swiss professional association for psychomotricity, researchers and practitioners convened to discuss ongoing and planned projects. Central to the event was the dialogue on how psychomotor research can be interconnected, further developed, and collaboratively shaped.

A Day Dedicated to Dialogue

As part of the sectional conference of Psychomotorik Schweiz, the research colloquium of the Swiss professional association took place on March 22, 2025, in Bern. The aim was to highlight current developments in psychomotor research and to foster dialogue between research and practice. Embedded within the Swiss educational and healthcare systems, psychomotor therapy operates at the intersection of pedagogy, therapy, and societal demands. The colloquium provided a space to collectively reflect on practical questions, effectiveness, and new perspectives.

The day was structured into two parts: In the morning, an internal exchange occurred between researchers from the French- and German-speaking regions of Switzerland. Simultaneously, the sectional conference of the professional association—a biannual meeting of cantonal representatives focusing on professional policy issues—was held. In the afternoon, both groups convened in a joint plenary session. Researchers presented ongoing and planned projects, followed by an open discussion addressing questions, perspectives, and shared concerns.

Morning: Research Perspectives

For the first time, the colloquium facilitated a scientific exchange among psychomotor researchers from various linguistic regions of Switzerland. Represented institutions included the University of Teacher Education Bern (PHBern), the University of Teacher Education Lucerne (PH Luzern), the Intercantonal University of Special Education (HfH), and the University of Social Work Geneva (HETS Geneva).

Participants gained insights into each other's research activities and had the opportunity to discuss their own projects in a collegial setting. Ongoing and planned research projects were presented, subject-specific topics were explored in depth, and methodological approaches were reflected upon. The atmosphere was open, constructive, and characterized by mutual interest—a strong impetus for a more interconnected research landscape within Switzerland.

Afternoon: Collective Exchange

In the afternoon, representatives from various regions of the association were offered valuable insights into current research endeavours. Projects presented included studies on graphomotor development, the effectiveness of body- and movement-oriented interventions, the role of psychomotor therapy in aging, and the impacts of early screen exposure.

The presentations vividly demonstrated the diversity of current psychomotor research—both in content and methodology. The goal of the exchange was to make research findings applicable to practice, address questions arising from daily professional life, and inspire new ideas. This objective was achieved: A space emerged for collective contemplation on the future of psychomotor therapy.

Questions for the Future – What Research and Practice Need from Each Other

In the concluding discussion, it became evident that the connection between research and practice thrives not only on retrospection but also on a shared forward-looking perspective. Central to this was the question of the effectiveness of psychomotor interventions and the conditions under which they can realize their potential.

The following research projects were presented by various individuals—some as their own work, others representing research teams:

The meta-analysis by Anja Solenthaler (HfH) indicated that specifically indicated, body-oriented interventions are particularly effective—provided they are conducted by qualified professionals.

The "grafset" study (Josephine Schwery, PHBern) emphasized the importance of the educational support setting and associated collaborative forms between psychomotor therapy and teaching staff: A positive graphomotor self-concept correlates with better graphomotor performance and is particularly supported in inclusive settings (team teaching by psychomotor therapists and teachers).

An individual case study by Nadja Ulmann (HfH) illustrated how the effects of interventions can be visible even on a small scale, showing that a graphomotor intervention led to positive changes in a child's classroom behaviour.

The analysis of therapy protocols (Simone Sager, PH Luzern) shed light on goal implementation in practice, revealing that during the therapy process, thematic shifts can occur: While the self-concept often takes centre stage at the beginning, motor or graphomotor goals become more prominent as therapy progresses. This finding can prompt a more conscious reflection on therapy progression and regular review of planned objectives.

The transfer of therapeutic successes to everyday life also came into focus: How can therapeutically developed competencies have a lasting impact? The research group led by Ayala Borghini (HETS Geneva) sought to answer this question in the context of early screen exposure. Preliminary results suggest that psychomotor-guided free play with parents can have positive effects on parent-child interaction after just a few minutes, manifesting as shared joy, richer play behaviour, and early signs of symbolic actions in the child.

Children were not the sole focus of the exchange: The project by Gemma Gebrael Matta and Delia Danesin-Démarest (HETS Geneva) demonstrated that psychomotor group offerings also have an impact on seniors—in the form of increased self-confidence, improved body awareness, and social participation.

Research itself also posed demands on practice: It relies on the participation and feedback of psychomotor therapists. For instance, the CSWin-Strega-DTW training (Martina Fuchs & Sibylle Hurschler, PH Luzern) was specifically developed to enable therapists to record and document graphomotor developments with digital support—a prime example of research-oriented application.

Finally, structural aspects were addressed: The Swiss research landscape aims to be more broadly positioned and better regionally networked—through new collaborations with additional universities such as the Scuola universitaria professionale della Svizzera italiana (SUPSI) in the Italian-speaking part of Switzerland.

A glance beyond national borders to Germany revealed that psychomotor research can also tackle societal issues. The contribution by Martin Vetter (PH Ludwigsburg) highlighted that questions concerning inclusion, migration, or sustainability are increasingly coming into focus in psychomotor therapy, thereby sharpening the profession's profile.

Dialogue as a Key to Further Development

The research colloquium clearly demonstrated that dialogue is not merely desirable but essential—both within the national research community and between research and practice. This is particularly important as research in psychomotor therapy plays a central role in the theoretical foundation and professionalization of the field.

The advancement of psychomotor therapy thrives on collective thinking, critical questioning, and mutual inspiration. Events like this colloquium create the conditions necessary for such progress. It is through dialogue that shared knowledge, diverse perspectives, and the courage to explore the unknown together can emerge—driving the future of psychomotor therapy.

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Further information concerning the project « Seniors et psychomotricité : une recherche action » (HETS Genf)

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Annual Meeting of the Scientific Association of Psychomotricity and Motologie at University Ludwigsburg

Henrik Göhle*, Martin Vetter*, Stephan Berg* & Judith Sägesser Wyss*

* WVPM Board of Directors

Under the theme "Future Topics in Psychomotricity and Motologie: Networking, Condensing, Linking and Moving", the annual conference of the Scientific Association for Psychomotricity and Motology (WVPM) e.V. took place on 18 January 2025 at the Ludwigsburg University of Education. The members met the evening before for the annual general meeting and then enjoyed a convivial exchange over dinner.

After the welcome by the board of the WVPM, the meeting began with an eventful introduction with shadow theatre. In the subsequent keynote lecture, the Ludwigsburg chair holder Prof. Dr. Martin Vetter presented the Ludwigsburg University of Education (PH) as a new location for Motologie and psychomotricity. In his lecture, Martin Vetter presented structural and research methodological outlooks and explained the special features and opportunities of the new location for the development of subject-specific study programs as well as for new research cooperations. From the point of view of the WVPM, it seems important to note that his appointment is of great importance for the subject, as the PH Ludwigsburg has the right to award doctorates and habilitations. Martin Vetter explained how motor knowledge and psychomotor ideas can enrich qualitative research.

Specifically, he illustrated this with two current pilot studies that he is conducting with Debora Yacoub and Yasmin Habaal: For those with a refugee migration background on the one hand and for young people with disabilities on the other, the movement-based approach impressively shows the gain in research data for typical steps of the qualitative research process. His remarks led to a lively discussion in the plenary.

Another highlight of the conference was the midday colloquium, at which various doctoral and research projects were presented through poster presentations. Nine doctoral students presented their projects in different "stages", from the initial considerations to completion. After a short presentation in the plenary session, the projects were presented and discussed in several rounds in front of changing small groups. The doctoral projects presented covered an impressive range of topics: Heike Einsiedler, who was unable to attend due to illness but provided her poster for the discussions, dealing with physical aspects of mathematics and examines how early childhood math learning takes place in movement and in the body. Stefania Ferraro is researching heart rates and exercise in outpatient psychotherapy and analyzes how these data could serve as indicators of psychophysiological health. In her project, Julieta Jacobi is developing a performance as a micro-city laboratory of different sensory appropriations of space with blind, visual

impaired and visually seeing actors. Josephine Schwery is investigating the graphomotor self-concept of first- and second-graders in German-speaking Switzerland. In a meta-study, Anja Solenthaler is analysing the effects of movement-oriented interventions on improving motor skills and mental health in children and adolescents. Debora Yacoub is researching the possibilities of access through movement to children who have experienced crises. Ellen Thuma is dealing with shame as a collective sensorium and examines the development of gender-related ways of feeling as well as the sensitization of the Kinaesthetic sense through the shame -effect in female biographies. Nina Holz presented the first frames of her doctoral thesis project with a preliminary focus on mindfulness in motor research.

In the afternoon, the conference participants were divided into three parallel working groups. The first group, moderated by Representative Prof. Dr. Stephan Berg, was dedicated to the topic of "Organizational Development and Health Promotion". The second group, led by Dr. Judith Sägesser Wyss, dealt with "Psychomotor skills and school inclusion". In the third group, headed by Prof. Dr. Henrik Göhle, the focus was on the topic of "Empiricism – qualitative & quantitative data of intersubjectivity" with a pilot study on the synchronization of heart rates in four-handed piano playing. The intensive discussion and careful securing of results illustrated the great interest in jointly developing and deepening the topics presented in the professional community. The conference impressively showed that, despite limited resources in the small sector, in the field of motologie and psychomotricity, fruitful topics can not only be further developed within one's own community through networking and links, but can also be made visible to the outside world. The literary café in which the conference took place was filled with a special atmosphere by the helping students, especially by allowing them to talk in between short recitations of their own works and this way refining the scientific conference with art and literature.

The Board of WVPM (from left to right): Dr. Judith Saegesser, Prof. Dr. Martin Vetter, Dr. Stephan Berg and Prof. Dr. Henrik Goehle

European Psychomotricity Journal

Information from the EFP Member Countries / European Psychomotricity Journal (2025) pages 124-130

State of Psychomotricity in Belgium 2024-2025

In 2024, psychomotricity in Belgium took major steps forward, while continuing to face challenges on the road to recognition. The national association (UPBPF) now gathers 460 members and plays a central role in advocacy, education, and research.

A milestone was achieved with the inclusion of psychomotricity studies as a paramedical profession in the Federal Government Agreement. This political progress followed intensive contacts with ministerial cabinets and parties during the 2024 elections. Ten social health insurances have continued to join as partners, showing stronger support within healthcare. Yet, legal recognition remains pending after a ruling by the Liège Court, which redirected efforts toward political lobbying and public communication.

Education remains solid, with the 6 Belgian schools offering Bachelor-level training and preparing for the AEQES revision in 2025. International cooperation is fostered through initiatives such as the EU Psychomotricity Journey.

Research gained new momentum with projects on psychomotor dynamics, clinical narrativity, interdisciplinary models, and prevention in early childhood. A study was also submitted to the KCE on the impact of psychomotricity sessions on children's attention before primary school.

The past year saw dynamic activities: conferences on law and ethics, participation in events on prematurity and sensorimotor development, and the December study day on body relations from adolescence to adulthood. Two issues of Reliance Psychomotrice enhance the profession's scientific discourse.

Looking ahead, a draft law recognizing psychomotricity as a paramedical profession is under review in the House of Representatives. The UPBPF board is highly available to respond to requests from policymakers, whether for statistics or questions about the profession, with the aim of supporting the passage of this law.

Nasschaert Benjamin

Union Professionelle Belge des Psychomotriciens Francophones

Short Report from France (2024-2025)

Profession developments

Haute Autorité de Santé

Several recommended best practices guidelines include the intervention of psychomotor therapists.

- Adaptated Sport Activities (Activités physiques Adaptées)
- Supporting the intimate, emotional and sexual lives of people with disabilities (Accompagner la vie intime, affective et sexuelle des personnes en situation de handicap)
- Mental Health and Psychiatry (Santé mentale et psychiatrie)
- Women with alcoholic risks (Alcool des femmes)
- Overweight and obesity in women (Surpoids et obésité chez la femme)

In July of 2025: +/- 157 HAS'Guidelines include PMT' intervention.

Research developments

We envisage a real and large increase of research projects in PMT in France. Below is a non-exhaustive list of the ongoing programs including programs supported by FRPMC https://frpmc.fr/ and recent PhD.

- Immersive relaxation – RelaxÉ
- Development and validation of a model for screening high intellectual potential in children with or without disorders, using a combination of digital and neuropsychomotor tools.
- Psy-MotDep: Influence of psychomotor therapy on the quality of life of patients with a characterised depressive episode: randomised controlled study.
- PREMADEV: Developmental trajectories of premature children assessed using Brunet Lézine Revised scale at 1 and 2 years and the Brunet Lézine scale at 3 years: a single-centre retrospective study.
- EMBODXR project, an egocentric simulator of motor control pathology in virtual reality. Induction of motor control adaptation disorders in virtual reality using a head-mounted display in non-pathological individuals.
- French adaptation and validation of the HPSQ-C writing questionnaire.
- Impact of multisensory care on the development of preborn infants: a clinical and experimental study of short- and long-term effects.
- Scaling of the Implicit Motor Imaging Test 2 in adolescents.
- Multidimensional and developmental study of empathy and self/other distinction in children with autism spectrum disorders (ASD) versus high intellectual potential (HIP): exploration of bodily and perceptual mechanisms.
- The value of modifying visual perception of traces in learning to write in children in Year 5. Optimisation of the light painting technique as an aid to learning to write in children in Year 5.
- HPIsens: Sensory profile in people with high intellectual potential – HPIsens.
- Role of parent-child interaction in the development of manual motor asymmetry in babies carried in the arms.
- Does the use of social media have an impact on body image and self-perception among adolescents?

Recent PhD's:

- Academic and non-academic impacts of psychomotor intervention on praxis disorders and graphic skills in children with high intellectual potential (H.I.P.) of heterogeneous type between 6 and 10 years of age.
- Study of the body experiences of rehabilitation professionals in therapeutic support situations.
- A mathematical understanding embodied in the body.
- Effects of attention orientation on gait parameters and prefrontal cortex activation in elderly individuals and individuals with Parkinson's disease.
- Conceptualisation and assessment of the effects of a primary prevention protocol for post-traumatic stress

disorder (PTSD) among professional firefighters in the Seine-Maritime fire and rescue service (SDIS).
- French adaptation of Barkley's program for families with TDA-H child.
- Procedural perceptive-motor learning.
- A few examples of the research team's productions:
- Transdiagnostic assessment of sensorimotor signs in neurodevelopmental disorders:
- The Scale of Sensorimotor Characteristics in Autism and Neurodevelopmental Disorders, 2nd version (EPSA-TND2).
- Two new tests to assess motor imagery skills in children and adolescents: The Implicit Motor Imagery Test, 2nd version (TIMI-2) and Qui Mot.
- Adaptation of Grafos test.
- The Functional Executive Function Re-education Programme (R-PFE) for adolescents with ADHD: Benefits of metacognitive strategies for mental health.
- Body schema and body image distortions in emerging psychopathologies in adolescence: Presentation of the Protocol for the Assessment of Body Representations in Adolescents and Young Adults (PRECORPA).
- Body awareness, a new key to understanding depression and the suicidal continuum.

Numerous publications by Laurence VAIVRE-DOURET's team (France) : Psychomotor therapist, AP-HP healthcare executive, psychologist and clinical neuropsychologist, psychotherapist, Ph.D. University professor in developmental neuropsychology, Paris Cité University Centre, Necker-Enfants Malades Hospital Director of the 'Neurodevelopment and Learning Disorders (NDTA)' research team INSERM Unit 1018 CESP and IUF Chair in 'Clinical Neurodevelopmental Phenotyping' which has just received the GB Soubiran Prize (FRPMC).

Approximately 20 PMT PhD students in 2025.

Recent/current activities

April 2024: AFEPP scientific day on psychomotricity towards reengineering!

October 2024: 50 years of state diploma – exceptional venues for the 50th anniversary with a symposium at the Maison de l'Unesco, Paris, with presence and interventions of former health ministers, ambassadors and directors of all the French schools in PMT; and foreign PMT + the PMT National Conference.

November 2024, City of Montpellier, "journées occitanes en psychomotricité".

March 2025: AFEPP scientific day on psychomotricity in interprofessional cooperation.

July 2025: Summer School by ISRP-OIPR-FRPMC: From clinical psychomotricity to research: 50 Years of Professional Evolution & New Societal Challenges

Psychomotricity in Italy: profession, education, and research developments (2025)

In Italy, psychomotricity is today represented by two complementary figures: the Terapista della Neuro e Psicomotricità dell'Età Evolutiva (TNPEE), a sanitary profession officially recognised within the Board of Sanitary Professions, and the Psicomotricista, a selfregulated profession widely practised across the life span, operating in care, preventive, and socio-educational contexts. Around 8,000 practitioners are currently active, of which 1,500 are TNPEEs and more than 6,500 are Psicomotricista, organised in professional associations

coordinated through CoNAPP (National Coordination of Professional Associations of Psychomotricians) and protected by law 4/2013.

In 2025 the entry into force of the new NACE-ATECO code psychomotor activity formally recognises Psychomotricians within the national fiscal system.

CoNAPP has also consolidated a unified professional and educational profile, endorsed by all associations, which now serves as the reference for admission and quality certification. Dialogue with political institutions is ongoing, with the aim of achieving a specific law for full legal recognition.

Education remains dynamic: demand for the three-year diploma in Psychomotricity is increasing and continuous education is expanding, including the specialization in Psychomotor Support for Parenthood, now entering its second edition. University bachelor programmes in TNPEE are active in several campuses.

Research is advancing through both academic and private initiatives. The standardisation of the GRAFOS-2 screening tool, conducted by the University of Bern, Ciserpp and La Sapienza University of Rome, is expected to be published in 2025. Further studies explore new topics such as post-traumatic disorder, new addictions, international recognition and health diplomacy, with expected completion by 2026. Looking ahead, the 20th anniversary of APPI (Italian Psychomotricians Professional Association) will mark an important milestone for professional visibility and intergenerational dialogue.

Psychomotricity in Luxembourg: Developments and Challenges in 2025

Psychomotricity in Luxembourg is advancing but still faces major structural obstacles. Negotiations between the Association Luxembourgeoise des Psychomotriciens Diplômés (ALPD) and the Caisse Nationale de Santé (CNS) over reimbursement for self-employed therapists have been ongoing since 2017. Despite progress, implementation is unlikely before 2026. Financial instability, late payments, and high living costs make private practice precarious, with many therapists closing after only a few years. Some must work up to 60 hours weekly to remain financially viable, creating risks for mental health.

Education remains dependent on Belgian and French programs, though new opportunities have emerged, including a university certificate on autism and inclusion and psychomotricity courses in social work training. The ISRP in Metz now offers nearby studies. Language continues to shape practice: French dominates in hospitals, while Luxembourgish is essential for private care. The LAP contributes through Airtramp training, workshops, and administration of the SCAP, supporting children with ADHD and related disorders.

Recent milestones include participation in international ADHD conferences, expansion of Airtramp facilities serving 500 children weekly, and LAP's 40th anniversary. National recognition is growing, with the Ministry of Health highlighting psychomotricity during its first conference on the "first 1,000 days of life."

Future plans involve a 2026 congress on autism spectrum disorders, new workshops on graphomotor skills, movement-based interventions, and parent-child sessions to strengthen attachment.

Overall, Luxembourg illustrates both growth and fragility: progress in education, practice, and international

collaboration, but continued struggles for recognition, reimbursement, and sustainable working conditions. Around 70–80 psychomotor therapists are active in 2025, united by their commitment to this body-based therapeutic discipline, yet challenged by financial constraints and generational shifts in professional engagement in the two Luxembourgish associations ALPD & LAP.

Lana Trombini

Delegate of Luxembourg for the EFP

Overview of Psychomotor Therapy (NVPMT) in the Netherlands 2025

The Profession

Psychomotor Therapy (PMT) is growing in the Netherlands. Around 2,500 professionals are active, registered through NVPMT and the national Quality Register for Arts Therapies. The protected title Psychomotorisch therapeut is recognized by health and education authorities. Demand is rising, but there is a shortage of trained practitioners. Founded in 1960, the NVPMT celebrates its 65th anniversary this year.

Research & Frameworks

Together with Windesheim, NVPMT developed Do and Measure: validated outcome tools for adult PMT, available via an app, enabling shared decision-making and research. For children and youth, outcome measures are under validation. The Professional Competency Profile (BCP) will be revised in line with national and international standards. The Dutch framework includes protected title recognition, credential evaluation via NVPMT, and oversight of education quality.

Working & Practice Settings

PMT is practiced in mental healthcare, rehabilitation, youth care, hospitals, special education, elderly care, and private practice. Registration requires a recognized diploma and Quality Register membership. Foreign diplomas are evaluated by Nuffic.

Insurance & Regulation

PMT is usually reimbursed by health insurers, depending on policy and treatment context. A medical referral is often required. For youth under 18, municipalities are responsible for financing.

Education

Two Universities of Applied Sciences offer PMT programs:

- Windesheim (Zwolle): bachelor (full-time & part-time) and master.
- HAN (Nijmegen): bachelor (full-time & part-time).

From September 2025, Zuyd University of Applied Sciences starts a new bachelor. Programs last 4 years (240 ECTS) and are taught in Dutch. NVPMT also recognizes KU Leuven programs with a 45 EC mental health specialization.

Strategic Plan Highlights

1. Connecting – strengthen membership value, regional presence, webinars, student focus.
2. Positioning – build stakeholder relations, claim place in care standards, raise visibility, foster European collaboration.
3. Evidence – expand outcome data, research, cost-benefit analyses, guidelines, and academic partnerships.
4. Innovation – follow healthcare trends, integrate into practice, update competency profiles.

Vaktherapie Nederland

NVPMT collaborates with six other associations in Vaktherapie Nederland. Member contributions fund shared services, advocacy, and positioning. United strength remains key.

State of Psychomotricity in Portugal 2024-2025

The Portuguese Association of Psychomotricity (APP) estimates there are about 2500–3000 Psychomotricians in Portugal at this moment. Professionally, significant progress was achieved with the July 2025 Parliamentary discussion and approval of resolutions supporting the Regulation of the Psychomotrician Profession. These advancements, mark a decisive step toward legal recognition, now awaiting further debate in the Health Committee and subsequent governmental negotiations.

On the Educational front, APP reinforced ties with the Universities with a Degree on Psychomotricity in Portugal (Faculty of Human Kinetics of the University of Lisbon - FMH, University of Trás-os-Montes e Alto Douro and the University of Évora - UE), presenting Psychomotricity and the APP to students in the FMH and UE, while successfully organizing the EFP Student's Academy 2025 edition, in Lisbon. This four-day event gathered around 100 national and international students, combining workshops, cultural activities, and institutional visits under the theme "Discovering Psychomotricity."

Research continued through the association's journal A Psicomotricidade, with issue 26 in press, issue 27 under revision, and a call for contributions for issue 28. Recent activities included the XXV General Assembly and the celebration of the European Day of Psychomotricity, encouraging grassroots contributions and raising visibility via social media campaigns.

Looking ahead, APP is revising regulations and procedures to align with forthcoming professional legislation and preparing actions with the ministries of Health, Labor and Education.

In 2025, Psychomotorik Schweiz, represented by delegate Judith Sägesser Wyss, continues to advance the profession through significant developments in education, research, and practice. The association counts 1,053 members, including 765 active practitioners.
Recent progress includes the official recognition of the Master's degree in Psychomotor Therapy at HES-SO Geneva and the first graduates of the new consecutive Master's program at HfH Zurich. Efforts to address the national shortage of trained psychomotor therapists are ongoing, alongside initiatives to strengthen early intervention services across cantons.

Research activity has increased, highlighted by a national colloquium in March 2025 fostering collaboration between

practitioners and academics. The association launched a new website, held a successful early childhood education training day, and continues to develop quality standards and professional indications.

Upcoming priorities focus on finalising and publishing these standards, enhancing the visibility of psychomotor therapy, expanding social media presence, and offering further education courses.