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Fostering a Synergy Between the Development of Well-Being and Musicianship: A Kinemusical Perspective

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Abstract

With amateur and professional musicians facing high risks to mental and physical health, it is important to reflect on the nature of instrumental music education and to design novel educational approaches that take the development of well-being into account. In this article, I plead for a "caring" stance towards instrumental music education, conceiving the development of well-being as an integral element of the development of musicianship. First, I define such a caring stance, conceiving of musical development and the development of well-being as the two chains of the DNA of music education, with the PERMA building blocks of well-being as the bases of the ladder that connects the two chains. Next, I discuss how a synergy between the development of musicianship and well-being can be achieved by a constraints-led approach to integrating these building blocks of well-being into the dynamics of a music lesson. Then, I present a novel approach to instrumental music education that seeks to achieve the synergy between developing well-being and musicianship by educating the performing body beyond a mere instrumentalist approach to the body and musical instruments through the incorporation of movement-based learning activities. After elaborating on the guiding principles of this "kinemusical" approach, I exemplify the presented framework by discussing two learning activities in relation to the constraints-led integration of the PERMA building blocks of well-being. This exploratory work is presented as an initial step in a broader research agenda. It invites critical engagement and dialog to refine and advance the proposed kinemusical approach, with implications for both formal music education and the wider field of music research.

Keywords: instrumental music education; Embodied Music Pedagogy; well-being; constraints-led approach; PERMA; kinemusical approach

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1. Introduction

Playing music is a wonderful activity, and yet it can also lead to displeasure and even to suffering. Different studies show that musicians, compared to the general population (see also Alessandri et al., 2020; Bernhard, 2023), are more often confronted with mental issues due to, for example, extensive comparison and competition, job insecurity, financial instability, personal sacrifice, long practice hours in isolation, and sleep quality (see Kegelaers et al., 2021; Vaag et al., 2016). Importantly, these mental health issues are not limited to in-service music professionals but also occur among music students (e.g., Aparicio et al., 2016; Demirbatir et al., 2013; Koops & Kuebel, 2021; Steemers et al., 2020; Wristen, 2013).

While many studies address the benefits of music for well-being (e.g., MacDonald, 2013; Sheppard & Broughton, 2020; Welch et al., 2020), a dearth of research addresses the

treatment of professional and student musicians' mental problems. Some of the proposed treatments or coping strategies are mind–body interventions such as mindfulness or yoga, psychotherapy, counseling, cognitive–behavioral, and self-psychology techniques (Bartos et al., 2022; Visser et al., 2022).

Mental health problems, such as depression, can be caused by physical problems (Kenny & Ackermann, 2015). The occurrence of musicians' physical problems is well documented in the research literature, revealing sometimes astonishing percentages of suffering musicians. For example, in a systematic review on playing-related musculoskeletal disorders (PRMD) in pianists, Bragge et al. (2006) found PRMD prevalence rates up to 93%. Problems concern mostly playing-related musculoskeletal pain and overuse injuries (e.g., Baadjou et al., 2016). Several solutions have been proposed to deal with physical problems, including different strategies related to optimizing body performance through fitness, general muscle exercises, strength and endurance training, yoga or Pilates, and stretching (for a systematic overview, see Stanhope et al., 2022), to developing deepened body awareness through somatic methods such as Feldenkrais (e.g., Chiang, 2023), Alexander Technique (e.g., J. Davies, 2020) or Body Mapping (Diaz, 2021).

While *intervention* programs for musicians, using such strategies, have been shown to be successful to some extent, this is not the case for health-related *educational* programs, e.g., combining theory sessions, practical sessions, and personalized instruction (Martin Lopez & Farias Martınez, 2013; Stanhope et al., 2022). Stanhope et al. (2022) therefore suggest delivering an education of the body in practical formats, including instrument-specific workshops.

In this article, I propose a practical format in the form of a novel educational approach that is not per se focused on dealing with health problems but seeks to educate the performing body beyond a mere instrumentalist approach to body and musical instrument, thereby promoting a healthy bodily involvement in performance. An instrumentalist approach focuses on increasing efficiency and productivity in view of adequately—often interpreted as: according to the teacher's or "master's" model—performing the music. As such, the body is often conceived as a recalcitrant object that needs to be controlled in order to master the instrument (Behnke, 1989). Arguably, an instrumentalist approach may, next to, for example, students' cognitive and psychological backgrounds (e.g., Alessandri et al., 2020), induce (some of) the above-described mental and physical problems, emphasizing and imposing templates of right postures and correct playing gestures, and requiring extensive mental and physical efforts. In Oswald's words, "the attachments of performers to their musical instruments can be a source of pleasure and satisfaction but may also be fraught with worry and discomfort" (Oswald, 1992, p. 113).

Here, I propose an alternative approach in which, through exploring the intrinsic music–movement relationship, the body becomes a locus of understanding, expressiveness, and creativity. In other words, the body becomes a subject, a primary source of individual musical signification processes through the articulation of the lived experience of the music through instrument-mediated body postures and body movement (see Nijs, 2019 on subjectification). The objective is the integration of personal, instrumental, and musical/expressive gestures, facilitated through the incorporation of the musical instrument (Nijs et al., 2013; Nijs, 2017). The latter is, although underestimated and underinvestigated, an important part of both musical and well-being development. Indeed, Simoens and Tervaniemi (2013) found that an optimal relationship with the instrument is beneficial to professional well-being.

Based on the theory of embodied interaction (Leman, 2016), Positive Psychology (Seligman, 2011), and non-linear pedagogy (Chow, 2013; in music: Bremmer & Nijs, 2020, 2022), I discursively elaborate on the potential of movement-based activities to promote a

synergy between developing well-being and musicianship. First, I position the presented approach in a broader view on music education, pleading for the adoption of a caring stance toward instrumental music education. Next, I discuss the didactic implications of such a stance, integrating the building blocks of well-being as presented by Seligman (2011) into the dynamics of a music lesson as described by Bremmer and Nijs (2020, 2022). Then, I connect these didactic applications to the use of movement in the instrumental music classroom, describing a "kinemusical" approach to instrumental music learning (see also, Nijs, 2019). Finally, I present three kinemusical activities and discuss them in relation to the presented framework.

For the sake of clarity, I emphasize that this article is written with *formal* instrumental music education (e.g., music schools and conservatoires) in mind. However, the approach may be adopted in other educational contexts, such as the private studio or school bands.

Also, it is specifically designed for those instruments that can be played while moving in space, such as the violin or alto, most woodwind instruments, and small brass instruments. Instruments traditionally played in a fixed sitting or standing position (e.g., piano, organ, cello, string bass) are considered outside the scope of this proposal. Nevertheless, I believe many of the elaborated ideas, the underlying theories, the empirical studies mentioned, and the practical implications may be of benefit to researchers and reflective practitioners who wish to consider the role of movement in adopting a caring stance to musical development.

In addition, it is important to note that, while instrumental music teaching, at least in the Western-European conservatoire tradition, often involves one-to-one tuition, the presented kinemusical approach advocates for learning to play an instrument in small groups.

Finally, I wish to emphasize that the presented approach is, despite extensive work on its theoretical foundations and despite the many workshops and ongoing empirical work, still in an early stage of development. Therefore, rather than advertising a new approach to instrumental music teaching and learning, this article wants to be an invitation to critically consider the approach, engage in dialog to further develop it, and design and conduct empirical research that addresses different aspects of the approach.

2. Towards a 'Caring' Music School: Defining the DNA of Music Education

Acknowledging well-being as an essential part of (formal) music education implies adopting what could be called a caring stance to music learning and teaching, i.e., conceiving the development of well-being as an integral element of musical development, rather than as a byproduct of musical training.

Well-being is a multidimensional construct, involving both hedonic, i.e., focus on preferences and pleasures of the mind as well as the body, and eudaimonic, i.e., focus on personal growth and development, dimensions (Ryan & Deci, 2001). Seligman (2011) advocates for a more integrative approach, relating well-being to eudaimonia but nevertheless integrating a hedonic component. In accordance with Smith and Silverman (2020), the perspective on instrumental music education as presented in this book adopts a eudaimonic stance à la Seligman regarding musical development, whereby "the value of making music is largely in the fulfillment derived from the doing, the process—not in any external value that may be placed on the output" (Smith & Silverman, 2020, p. 4).

In the past two decades, research on children's well-being has demonstrated the importance of the school in children's well-being. School-related variables such as school experience, satisfaction with school, relationships with teachers and classmates, safety and bullying, achievements and abilities, school marks and things learned at school, have been associated with overall life satisfaction and well-being (see, for example, Huebner et al.,

2014; see also Casas & González, 2017). As such, creating a school or classroom climate that promotes learning and well-being is valued as an important factor of healthy academic and personal development (e.g., Cohen, 2006; Jääskeläinen, 2022). Morris (2015, p. 8) therefore pleads for a re-orientation of schools, moving away from an *instrumentalist* stance that focuses on increasing efficiency and productivity, towards an *eudaimonic* stance that focuses on fostering well-being through "engaging in those activities that go to make up a life well-lived".

In instrumental music education, the prevailing approach to teaching and learning is the master-apprentice model (e.g., Burwell et al., 2019). This approach often adheres to an instrumentalist stance to the performing body, focusing on efficiency and productivity in terms of technical skills in relation to the canonized repertoire. Teaching typically occurs in a one-to-one setting in an isolated music studio, having "deep roots within the traditions of apprenticeship and [embodying] aspects of conservatoire culture" and thereby leading to a specific learning climate (Burwell et al., 2019, p. 373). According to Burwell (2012, p. 37), it involves a hierarchical structure "with authority strongly invested in the teacher as representative of both the state and the history of the art" (see also Burwell, 2020). The authoritative nature of the master-apprentice approach possibly induces an asymmetrical power dynamic that may lead to misconduct (e.g., Wickström, 2023) or create a sense of dependency (e.g., Kjølberg, 2015; Long et al., 2014), inhibiting the learner's autonomy, and leading to diminished self-esteem and feelings of inadequacy (e.g., Gaunt, 2005). Moreover, learners may feel compelled to conform to the master's expectations, potentially sacrificing their own artistic expression and personal development (e.g., Gaunt, 2008; Moberg & Georgii-Hemming, 2019; Presland, 2005). In addition, the master-apprentice approach often adheres to established musical traditions, repertoire, and techniques. While important for building technical proficiency, this emphasis on conformity may also limit learners' autonomy and creative exploration. As such, learners may feel hesitant to experiment, deviate from the master's guidance, or pursue their unique musical identity. Such constraints can hinder personal growth, artistic expression, and overall well-being (see also Allsup & Benedict, 2008; Bull, 2021, 2019). Also, the master-apprentice model may place considerable psychological pressure on the learner. Intense practice schedules, high performance expectations, and critical feedback can contribute to heightened stress, anxiety, and perfectionistic tendencies (e.g., Hanken, 2004). These pressures can undermine the joy and intrinsic motivation that music should ideally bring, leading to decreased well-being and increased burnout risk (e.g., Jääskeläinen et al., 2020). Finally, as Wilke et al. (2011) argue, the teacher and teaching style highly determine a learner's playing technique and therefore influence the possible occurrence of playing-related disorders at a later time.

To avoid perpetuating the master-apprentice model's problematic features and promote the well-being of developing musicians, I plead for acknowledging the importance of well-being from the very start of learning how to play an instrument, and for creating a synergy between musical development and the development of well-being. This means that musical training is not viewed merely as a means to an end—that is, it is not approached solely for its potential to enhance well-being through learning an instrument. Rather, as will be argued, adopting a caring stance in instrumental music teaching may shape learning and teaching strategies and the dynamic interaction between learner, teacher and learning content, by using the PERMA building blocks of well-being as guiding principles for the design of learning activities. Here, the dynamical systems perspective to instrumental teaching and learning as advocated by Bremmer and Nijs (2020) provides the underlying pedagogical framework, whereby task design, the creation of the learning environment and the adaptation to the individual learner contribute to a powerful environment that may foster caring *about*, i.e., feeling concern and empathy for someone, caring *for*, i.e.,

providing practical help and nurturing support, caring *through*, i.e., using activities to show care, and caring *with*, collaborating and supporting each other mutually (Hendricks, 2018; Silverman, 2023).

In this way, when adopting a caring stance in instrumental music teaching, development in and through music are intimately connected. Importantly, such a caring stance involves a dynamic and relational process emerging within the learning context, through which learners and teachers co-construct meaningful musical experiences that attend to both musical and well-being development. This process is characterized by mutual responsiveness, where teachers demonstrate sensitivity to learners' emotional and musical needs while learners feel safe to express vulnerability and take creative risks. The caring stance thus becomes embedded in the pedagogical interactions themselves, manifesting through responsive feedback, adaptive instruction, and the cultivation of musical identity within a supportive learning community.

Through this lens, instrumental music education transcends mere skill acquisition to become a vehicle for holistic development, where technical mastery and emotional well-being are understood as interdependent dimensions of musical learning.

As such, musical development and the development of well-being can be conceived as the two chains of the DNA of music education, with the PERMA building blocks of well-being (see Seligman, 2011) as bases of the ladder that connects the two chains (See Figure 1). As such, well-being can become an integral part of musicianship.

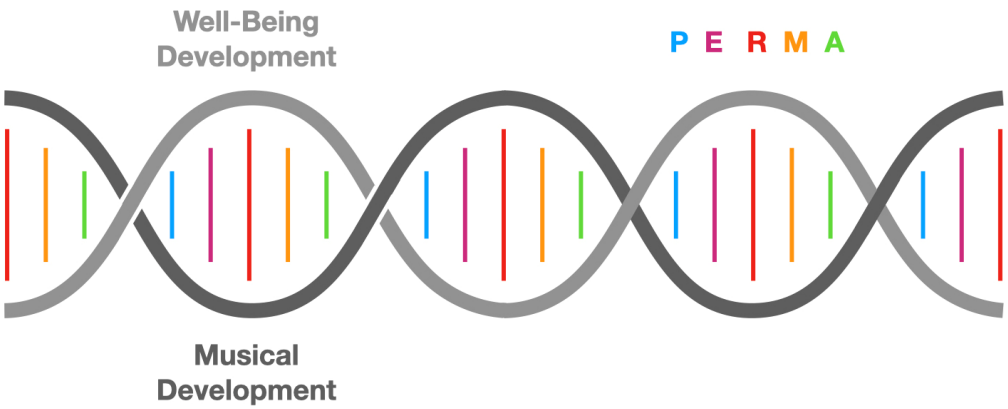

Figure 1. Musical and well-being development, conceived as the two chains of the DNA of music education, with the PERMA building blocks of well-being as the bases of the ladder that connects the two chains.

Seligman (2011) introduced the PERMA model as a framework for understanding and cultivating well-being. The model identifies five key elements that contribute to a person's overall sense of happiness and fulfillment: positive emotion, engagement, relationships, meaning, and achievement.

Positive emotion concerns the hedonic side of happiness, defined as the presence of positive affect and the absence of negative affect. *Engagement* is linked to the idea of flow experience, a mental state of focused concentration, of being fully immersed in an activity, with feelings of enjoyment and involvement (Csikszentmihalyi, 1990). *Relationships* encompass building positive social relations with others, feeling socially integrated, cared about, and supported by others, and a sense of belonging. *Meaning* refers to a feeling of being connected to something greater than yourself. It is about answering the question of 'why' we do what we do and the impact it has on others. Note that in the literature, this component is most often linked to a larger time scale, in the sense of having a purpose in life. However, I believe this can also be linked to the empowering nature of finding and

attributing meaning in the moment, such as happens in musical interactions (Leman, 2016). *Accomplishment* involves having a sense of achievement and success, and goal-directedness.

Kern et al. (2021) added the H of *Health* to the model, involving abilities and disabilities, conditions, and the perception of one's health condition. Given the fact that so many musicians suffer from physical and mental health problems, it is worth taking this into account.

Importantly, the components of the PERMA model are interconnected and mutually reinforcing. For example, positive emotions may contribute to increased engagement as they facilitate a positive mindset and enhance motivation. Engagement, in turn, can foster meaningful relationships by creating opportunities for shared activities and deeper connections. Meaningful relationships provide support and encouragement, which amplify positive emotions and engagement. Furthermore, having a sense of meaning and purpose can drive individuals to pursue accomplishments and set meaningful goals. Accomplishments, whether big or small, can generate positive emotions and reinforce one's sense of meaning and engagement.

The PERMA model is increasingly being used in scholarly work on active music making. Among others, Croom (2015) gives an overview of how music influences positive emotion, engagement, relationships, meaning, and accomplishment. Lamont and Ranaweera (2020) used Seligman's model when comparing the effects of amateur knitting and amateur music participation on happiness and well-being. Lee et al. (2017) aligned the lesson content of three Australian case studies to the PERMA model to understand how each well-being element was realized through music programs in schools. Faran et al. (2021) investigated the mediating role of emotion regulation between the use of music and flourishing in university students, using the Perma-profiler (Butler & Kern, 2015), an instrument based on the PERMA model. Bonneville-Roussy et al. (2020) adopted the PERMA model to study how autonomy-supportive music teachers increase students' well-being. Cara et al. (2022) studied the association between musical sophistication and beginning music teacher students' well-being. They found that a negative correlation between musical sophistication on the one hand and negative emotions (anxiety and anger) and loneliness on the other hand. They point to the importance of previous musical experiences as an important predicting factor of their well-being.

Also in education, some scholars have embraced the PERMA model. For example, Patston and Waters (2015) proposed the PIMS model as a way of introducing "*positive* instruction" in the music studio. This model advances 4 techniques to induce positive emotions, namely *positive priming* (begin the lesson positively, using Seligman's WWW, i.e., What Went Well technique; Seligman, 2011), *strengths spotting* (being flexible in meeting their students' needs), *positive pause* (stop after they get something right), and *process praise* (specifically praise processes such as problem solving, technical development, determination, or concentration). Ye (2020) proposed three strategies in the vocal classroom: the *hint function* (cultivate students' experience and perception of emotions), the *infection function* (infect students through demonstration teaching in the classroom teaching process, using words and expressions, and gestures and actions), and the strengthening function of positive emotions (integrate professional skills and positive emotional experiences reasonably). Regarding engagement, Riggs (2006) proposed a new model for studio instruction based on flow theory, encompassing five concentric circles representing four aspects, namely identity, experience, insight, and inspiration, that lead to the central notion of flow. In the author's view, "the potential of guiding a student toward the attainment of optimal experience is increased when all aspects are considered according to strengths and weaknesses present in the individual student". Also, Burzik (2003) turns to flow theory to posit 4 principles to optimize practicing a musical instrument: contact with the instrument, developing a

sense of sound, a feeling of effortlessness, and playing around with the study material. Note that the work of Patston and Waters (2015), Ye (2020), and Riggs (2006) demonstrates that traditional music teaching with its master-apprentice model music lessons may incorporate elements of the PERMA framework, given the teaching style and experience of the instructor. Parente (2015) applies the concept of flow to the practice of piano playing, demonstrating how student musicians can experience enjoyment and confidence from succeeding at something that challenges them to an engaging level.

However, to our knowledge, no music educational research has been undertaken in which Seligman's model is deliberately used to design and shape instrumental music learning activities. An exception is perhaps Van Der Merwe (2023) who, to some degree but not in-depth, elaborates on Seligman's PERMA model in relation to how we can teach musical instruments to help learners feel good and function well.

In my view, what is needed is a framework that helps teachers design learning activities and guides their daily practice of teaching. Therefore, in the next section, I propose a model that represents the way in which the synergy between the development of musicianship and well-being can be established by using the PERMA building blocks of well-being as beacons that direct the dynamic process of learning and teaching in the instrumental music classroom. Such a model can be seen as a lens that supports the reflective practitioner in adopting a caring stance.

3. Creating a Synergy: The Didactic Integration of the PERMA Building Blocks of Well-Being

In my view, adopting a caring stance and creating a synergy between the development of musicianship and well-being involves the integration of the PERMA building blocks of well-being in teachers' instructional design and their didactic implementation. In this section, I propose a model for such integration, based on a pedagogical framework, denoted by Bremmer and Nijs (2020, 2022, 2024) as "Embodied Music Pedagogy". This pedagogy acknowledges the fundamental role of learners' and teachers' physical and expressive interaction with music and each other and is developed for lessons in which communication through/with/in sound and music is the dominant mode (Bremmer & Nijs, 2022).

The foundation of Bremmer and Nijs' Embodied Music Pedagogy is the conception of a music lesson as a dynamical system, in which learning emerges throughout the dynamic interaction between teacher, learner, and learning content, as shaped by a set of individual, environmental, and task constraints (Bremmer & Nijs, 2022, 2024). Through task design (e.g., goals and conditions of learning activities), the creation of a specific learning environment (e.g., space, materials), and the adaptation to individual characteristics of the learner, the teacher creates a powerful learning environment.

Implementing a dynamic, non-linear approach to instrumental music education is a challenging endeavor. As previously mentioned, instrumental music teaching is most often characterized by a master-apprentice model of teaching, displaying many features of a linear pedagogy: it involves most often pre-defined goals (e.g., certain playing techniques) and solution models (e.g., certain postures or playing gestures) using scripted models of action (e.g., certain sequences of repertoire) (see Härkki et al., 2023). To adequately perform the repertoire, i.e., as defined or modeled by the "master", there is a lot of emphasis on reproduction of the master's model and error elimination. In addition, assessment is most often summative (e.g., an exam at the end of the year, imposing a specific repertoire; Zhukov, 2015; see also Schöllhorn et al., 2012). Note that this characterization of what goes on in the music studio does not seek to put all instrumental music teachers on the same page. Due to the idiosyncratic nature of the music studio, the diversity of teachers and their approaches, one could argue that teachers can be positioned along a multi-voiced

continuum, whereby the different voices represent distinct aspects of music teaching and learning, such as learner-centeredness vs. teacher-centeredness or repertoire-driven vs. improvisation. It is however important to make some aspects of traditional instrumental music education explicit so as to understand the typical nature of a non-linear pedagogical approach. The latter seeks to create a learning environment that is much more open-ended and adaptive. By requiring everyone to be involved in "deepening problem solving and learning through creative failures" (Härkki et al., 2023, p. 4), it broadens the envisaged transmission of specific instrumental and music skills, knowledge, or techniques with the development of transversal skills. These skills are often considered the cornerstone for the personal development of an individual (ERASMUS+ Virtual Exchange Competences Framework) and, as such, seminal to individual well-being.

Creating space for the development of transversal or soft skills, and the connection of these skills to personal development resonates with the idea of integrating the PERMA building blocks in the instrumental music classroom. Indeed, the different building blocks of well-being can be related to the so-called soft skills, and personal development is at the core of a flourishing life; hence the importance of soft skills in positive education, i.e., applying the science of well-being to educational best practices (Vella-Brodrick et al., 2022). For instance, transversal skills, such as communication and collaboration, play a crucial role in fostering interpersonal connections (relationships). They also aid in creating meaningful experiences by collaboratively generating and sharing ideas (meaning). Moreover, critical thinking and problem-solving skills are relevant to achieving goals (achievement) but also have an impact on finding meaning in tasks and situations. Additionally, transversal skills promote continuous learning, self-reflection, and personal development. By actively expanding their knowledge and abilities, individuals experience a sense of progress, accomplishment, and fulfillment. This pursuit of personal growth and self-improvement is closely intertwined with well-being and a sense of purpose. Furthermore, skills like focus, perseverance, and creativity support engagement in activities that induce a state of flow or deep involvement (engagement). When individuals can apply their unique skills and strengths to challenging yet enjoyable tasks (positive emotion), they experience a profound sense of engagement and fulfillment, contributing significantly to their overall well-being.

While a non-linear pedagogical approach creates the space for the development of transversal skills, integrating the PERMA building blocks as design principles for instrumental music learning activities may foster and intensify such development. As such, while developing musical competences ("in"), well-being is simultaneously promoted "through" music making by strategically supporting the development of the transversal skills.

Integrating the PERMA building blocks of well-being in the instrumental music classroom implies that teachers, whenever designing a learning activity, consider how the dynamic interaction within a music lesson can spur a learning process that appeals to each of the five building blocks. To do so, positive emotion, engagement, relationship, meaning, and achievement become guiding principles or beacons in the way constraints are introduced to shape the dynamic interaction (see Figure 2).

A constraint refers to the boundaries placed on learners, thereby shaping or limiting certain behaviors (Newell, 2003), helping them to focus on specific affordances, i.e., environmental properties providing learners with "opportunities for action" (Renshaw & Chow, 2019, p. 10; see also Gibson, 1979). Newell (2003) distinguishes between three broad constraints. *Individual* constraints refer to a learner's characteristics such as gross motor skills, cognitive skills (e.g., audiation, attention), or self-motivation. *Task* constraints include the goal of a task, feedback on the task, or questions posed by a teacher or peer during a task (Hopper, 2012). *Environmental* constraints refer to factors surrounding pupils, such as the size of a classroom, materials, or social factors (e.g., peer groups) (Hopper, 2012).

Noteworthy is the idea of the environment acting as a third teacher to promote learning and well-being, as adopted in the Reggio Emilia approach to early childhood (Miller, 2019). That is, acknowledging the "symbiotic and complex set of relationships that exist between the environment, the student and the teacher", classroom learning environments include social, cultural, temporal, physical, and virtual aspects that may foster communication, encounters, and relationships that promote learning (Miller, 2019, p. 241). Through the manipulation of these aspects, the dynamics within the learning environment can be shaped in view of promoting both musical and well-being development.

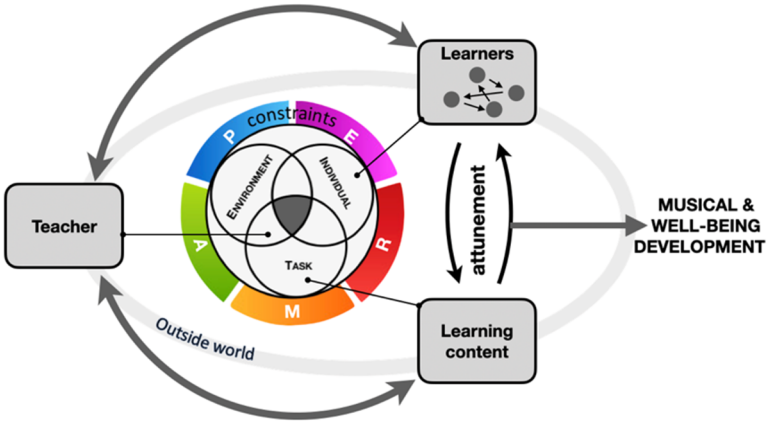

Figure 2. The integration of the PERMA building blocks of well-being into the model proposed by Bremmer and Nijs (2020). The PERMA building blocks are considered to guide the manipulation of the individual, task, and environmental constraints in view of steering the interaction between learners, teacher, and learning content towards the development of musical skills and well-being.

In education, the different constraints interact in a certain way, influencing learners' development and causing a wide variation in development (Schiavio & Van der Schyff, 2018). Therefore, manipulating the constraints is a powerful way to foster learning and development. It is important to note that the constraints can be seen as fixed or flexible. For example, leg length is a constraint that cannot be manipulated but has an effect on preferred tempo (Dahl & Huron, 2007). On the other hand, a person's state of arousal or motivation can, to some extent, be manipulated.

Integrating the PERMA building blocks of well-being in teachers' instructional design and didactic handling implies shaping or manipulating the constraints and their interaction through the lens of the PERMA model. For instance, learning activities can be designed that target the promotion of engagement or "flow" and, as such, not only induce intrinsic motivation but also trigger a positive emotional experience. This can be achieved by balancing task (challenge) and individual constraints (skills). Such balance might be supported by using certain materials (e.g., visual prompts) or specific types of interpersonal interaction (e.g., group, dyad). Varying interpersonal interactions is a viable way to promote relationship. For example, next to whole-group activities, it is important to integrate dyadic interactions. According to Bronfenbrenner (1979), the dyad is the most basic relationship, i.e., providing a critical context for development, onto which larger interpersonal structures can be constructed. Within a dyad, *reciprocity* (i.e., mutual influence), *balance of power* (i.e., degree to which one is more influential than the other), and *affectivity* (i.e., the feelings that the members of a dyad have towards each other) play an important role. Moreover, dyads can take on different functional forms, namely *observational* (i.e., one member of the dyad pays close and sustained attention to the activity of the other), *joint activity* (i.e., two members perceive themselves as doing something similar and complementary together), and *primary* (i.e., extending beyond physical presence). Task and environmental constraints

can be chosen to promote the different properties and functions of the dyad. Regularly changing the dyadic relationships (members, functions) and integrating dyads in large groups can be a powerful tool to promote the different building blocks of well-being, while working towards achieving a specific musical goal.

In the following sections, the above-presented model is exemplified by describing a kinemusical approach to instrumental music teaching and learning. Building on the pivotal role of the performing body for understanding, experiencing, expressing, and learning music, this approach brings the body at the center of the dynamic interaction between learner, teacher and learning content by combining body movement and instrument playing (see also Bremmer & Nijs, 2024). As will be elaborated on, movement-based instrumental activities may provide a valuable vehicle to realize the integration of well-being and musicianship.

The next section explains the kinemusical approach, elaborating on its underlying premises. The following section explains how the approach's use of movement may support creating the synergy between well-being and musical development.

4. A Kinemusical Approach to Instrumental Music Education

A kinemusical approach to instrumental music education involves the use of movement-based (hence: kine) activities when learning how to play an instrument.

In addition to integrating the movements inherent in playing an instrument (see Jensenius et al., 2010), such activities introduce extraneous movements in the instrumental learning process, i.e., movements that are not performance task related.

The basic idea is that integrating movement (see Table 1 for the different types of movement) in the instrumental learning process promotes the establishment of an optimal relationship with the instrument, i.e., the merging of musician and instrument, and as such promotes an embodied interaction with music (Nijs, 2017, 2019; Nijs et al., 2013). Such merging involves the incorporation of the musical instrument, i.e., the transformation of the musical instrument from a mere artifact into a 'natural' extension of the body (Nijs et al., 2013; Nijs, 2017). When this occurs, the instrument's use and functioning have become so natural that it seems like an organic component of the musician's body (Nijs et al., 2013). Consequently, instrumental gestures, both in producing sound and facilitating its production (Jensenius et al., 2010), can become constituents of the dynamic structure of the body (body schema) and thereby part of the somatic know-how of the musician (Behnke, 1989). As a part of the body as the stable background of every human experience, it is no longer an obstacle to an embodied interaction with the music (see Leman, 2007, 2016). The resulting attunement of the extended body to the musical environment (e.g., music, other musicians) enables the musician to engage in the process of musical sense-making and to freely and expressively communicate her artistic intentions based on the bodily articulation of the attributed musical meaning. Engaging in such a sense-making process is vital for a free bodily expressive response to the musical environment (see also Nijs, 2019).

Table 1. Different types of movement used in the kinemusical approach.

Type	Explanation	Example
Exploratory	Free movements to discover movements that fit the music and are possible with the instrument	Turning or bending the torso, walk freely around
Complementary	Movements that add something to the musical focus (e.g., meter) or facilitate an aspect of playing (e.g., feel the beat)	Perform a stepping pattern (e.g., right foot aside, join left foot, left foot aside, join right foot, repeat), walk to the beat

Table 1. *Cont.*

Type	Explanation	Example
Aligning	Movements that follow a certain element in the music (e.g., the melody)	Turn the body from left to right to bodily express the length of a phrase
Preparing	Movements that prepare a certain musical task	Loosen the joints by exploring the degrees of freedom in a joint while playing a note, a rhythm. . ., exercise a certain stepping pattern prior to playing
Independent	Movements that are decoupled from the music	Swing a leg while playing a difficult passage

Based on pedagogical and musicological insights, the kinemusical approach adopts a set of five premises.

4.1. Developing the Inner Musician

A basic idea of the kinemusical approach is that, to develop an inner sense of the music, the internal mechanism of associating movement and music can be emulated by movement-based sense-giving musical activities that allow discovering, exploring, and experimenting with the music–instrument–body connection. The movement-based activities seek to develop the inner musician by stimulating a process of internalization, based on the use of movement in different spaces, namely the external, the personal, and the internal space (see Figure 3).

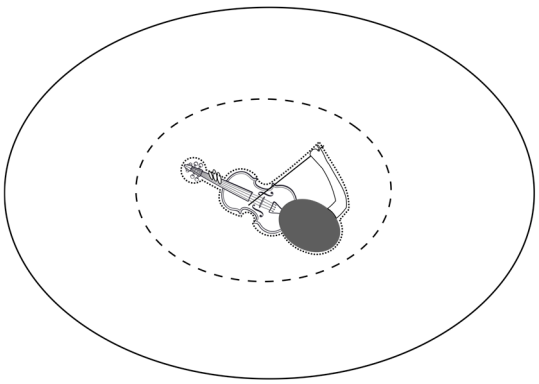

Figure 3. The external space (straight line) is the space in which we can move around. The personal space (dashed line) is the space we can reach with our body without displacement. The internal space (dotted line) is the space within our (extended) body's physical boundaries.

By gradually reducing the extent to which the movements occupy space, it is assumed that a process of interiorization is stimulated based on the kinesthetic memory of the invariants of the music–movement associations (see also Schnebly-Black & Moore, 2004, pp. 7–8). As an example, one might think of learning to play a musical phrase. Playing a phrase might first be accompanied by a locomotor movement (*external* space, e.g., walk in such a way that the intentional arc of the phrase is reflected in qualities of walking such as speed or stride length), then by a movement in place (*personal* space, e.g., a lateral movement with the torso in such a way that the walking qualities are mirrored in this lateral movement), and finally by the movement that is felt within the body (*internal* space) during, for example, blowing (wind instrument) or bowing (string instrument).

Obviously, the three spaces are not separate but nested into each other. Moving in the external space always involves movement in the personal and internal space. Moving in the personal space always involves movement in the internal space. Furthermore, in an

instrumental music lesson, these spaces are most often shared. Therefore, through interpersonal processes, movement in personal space (by a learner) might integrate movement in external space (by the teacher or another learner). Here, the movements of peers or the teacher can play an important role in facilitating or supporting a learner's enaction of movement-music associations (see also Bremmer & Nijs, 2020). For example, by entraining to the same musical pattern (e.g., a recurring rhythmic pattern, melodic phrase, or harmonic progression), the teacher and the learners can become physiologically entrained (e.g., breathing rate, heartbeat, and brain wave activity), enhancing their attentional and motoric coordination and strengthening cohesion (Cross, 2007).

4.2. Moving While Playing the Instrument

According to Jaques-Dalcroze, training the kinaesthetic senses with the whole body away from the instrument prepares to express music in any form and with any instrument by making it much easier to apply musical knowledge and skills to an exterior instrument than with other methods where learners begin directly at their instrument without any previous musical training (e.g., Manifold, 2008; Schnebly-Black & Moore, 2004). In contrast to Dalcroze's linear view (see also Gordon on the development of audition skills, Gordon, 2007, p. 11; Manifold, 2008) that certain musical skills need to be developed (through movement) before starting to play a musical instrument or away from the instrument, the kinemusical approach integrates movement in the development of instrumental skills in the musical learning process right from the start, and kinemusical activities most often involve moving while playing the instrument. Certainly, engaging in movement activities away from the instrument can be an efficient way to gain a repertoire of sensations that may lead to great dividends in musical performance and appreciation (Manifold, 2008; Schnebly-Black & Moore, 2004). However, in my view, the linear approach (first moving without the instrument, then performing on the instrument) tends to underestimate the impact of the musician-instrument relationship on bodily attunement. It can be argued that the musical instrument is not a mere channel for the communication of musical meaning that is separate from the musical signification process (e.g., Nijs et al., 2013). The addition of instrumental gestures in the expressive interaction with music, as opposed to, for example, dancing or moving à la the Dalcroze approach, changes the corporeal aspect of the interaction.

Therefore, in the linear approach, the musician has to recalibrate the bodily attunement to the music to a certain extent. Alternatively, one can develop bodily attunement from the start with the instrument. Nijs (2019) argues, from a theoretical point of view, that this promotes the integration between personal, instrumental, and musical gestures.

While it might be argued that the introduction of non-instrumental movements interferes with, especially, sound production gestures and maybe even with sound-facilitating or communicative gestures (categories of gestures: see Jensenius et al., 2010), it is important to note that a kinemusical approach does not seek to replace the "normal" way of playing. Rather, it is meant to play a complementary role to other didactic practices. Moreover, performing extraneous movements might even augment awareness of the right or natural movements. Imagine how a clarinetist doing a sudden movement might cause an increase in lip pressure to such a degree that no air can be blown into the clarinet. The intention to produce music while moving may bring attention to the embouchure and urge to consciously lower lip pressure. Such adaptability may be of benefit when playing in a dry concert hall, which often causes an increase in lip pressure. Finally, the process of integrating extraneous movements into one's playing might support restoring the body's original motility by expanding the learner's freedom to move while playing. Indeed, a kinemusical approach invites learners to engage in a creative use of the body by encour-

aging variations in movements. As such, it aims at the development of a "motile" unity of body and instrument rather than a "docile" body that is tamed into templates of right posture and movements in order to master the instrument. Evidently, it is important to emphasize that developing adequate postures and playing gestures is an important part of the instrumental learning process, and also may contribute to bodily freedom, and as such to the artistry and creativity of the musician (see also Nijs et al., 2024).

Note that, on stage, more and more musicians experiment with creative movement as part of their musical playing (see Figure 4).

Figure 4. From left to right: Dancing Violin Ensemble Barrage, Martin Fröst, Elsa Marquet Lienhart.

Such artistic experiments increasingly include the use of new sensor technologies, which make it possible to produce sound through movement, to influence sounds produced by an instrument, or to influence a digital visualization (see Figure 5).

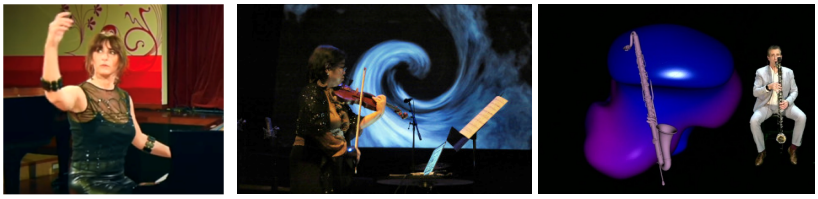

Figure 5. From left to right: Giusy Caruso with the Myo®, Mari Kimura with MUGIC®, Stephan Vermeersch with Sabre®. Permission to publish the photos has been obtained through personal communication.

Moreover, composers started using movement in their work. Consider Stockhausen's "Harlekin" (https://bit.ly/sh_harlekin, accessed on 15 September 2025), Hillborg's Clarinet Concerto Peacock Tales (https://bit.ly/hb_peacock, accessed on 15 September 2025), or the amusing performances of Igudesman and Joo (https://bit.ly/igudesman_joo, accessed on 15 September 2025). Sometimes, existing music is also combined with choreography. For example, the London Musical Arts Orchestra performs Mozart's Jupiter Symphony, among others, while the musicians perform choreography (https://bit.ly/lmao_mozart, accessed on 15 September 2025), or flutist Elsa Marquet Lienhart integrates movement in her performance of Debussy's Syrinx (https://bit.ly/lienhart_syrinx, accessed on 15 September 2025).

Given the use of creative movement in performance, one might ponder the question of why it is not used in instrumental music education, instead of, for example, waiting until a certain skill level is reached, which is often linked to a certain repertoire. Some educators do use movement in their instrumental music teaching. For example, Wil Offermans (1992) uses movement in ensemble playing, and Wedin (2015) in violin playing. However, both concern a top-down approach, using fixed choreographies. Greenhead (2016) lets students play while standing on a trampoline or sitting on a ball, to provide them with additional sensory experiences that help to find "color, movement, and fluidity". Nevertheless, the use of movement while playing remains a phenomenon in the margin, despite the existing plurality of educational realities and institutional contexts in the domain of instrumental music education.

4.3. Bottom-Up Approach

A third premise concerns a bottom-up approach. A kinemusical approach is not about the use of predefined choreographies (top-down), but about promoting exploration and experimentation with music–movement associations (bottom-up). As such, it provides a learning context in which variability of movement is introduced, allowing learners—as said—to move from "I must" (docile body) to "I can" (motile body). A priori defined idealized performance patterns ("templates") are replaced by subject- and context-dependent performance patterns, helping learners find their individual optimal way of performing (see differential learning; Frank et al., 2008; Savelsbergh et al., 2010). The deployment of this variability can stimulate the development of body awareness and possibly increase bodily—or enactive—knowledge, i.e., improved knowing in and through the body (Juntunen & Westerlund, 2001). Kinemusical activities induce a certain "noise" into the activity of playing the instrument. According to the dynamical system theory, a learner can detect an "ideal" movement through the addition of "noise" (Savelsbergh et al., 2010). Moreover, adding noise to a certain target movement (e.g., instrumental gesture) might provide a broader array of potential solutions. In a way, one could say that, through the noise, the familiar is made strange, and in doing so, it becomes possible to experience the degrees of freedom in one's movements (Sheets-Johnstone, 2010). According to Gordon (2003), the freedom to explore movement develops a relaxed feeling when moving, which is the best foundation for music instruction. A kinemusical approach introduces "noise" by inviting learners to use a combination of task-related and non-task-related movements. Task-related movements can be viewed as sound-producing, sound-facilitating, or sound-accompanying gestures (Jensenius et al., 2010). Non-task-related movements concern the learner's expressive and creative movement explorations (e.g., turning around, bending over, lifting a foot).

When trying to play in different ways, it becomes possible to find the invariant through variations, namely the felt quality of movement (Sheets-Johnstone, 2011). Learners become more sensitive to and aware of kinaesthetic sensations. This way, kinemusical activities might evoke an experience in which the body becomes an intimate context for knowing. It is assumed that, through the bodily sensing, feeling, and experiencing of music in combination with movement, such activities support developing the ability to feel the music from within and, accordingly, to gain an embodied understanding of the music (Bowman, 2000, 2004; Shepherd, 2002).

4.4. From Simple to Complex

Activities in a kinemusical approach are designed along a trajectory from simple to complex. This trajectory is established by adding layers in both music and movement, the addition of which leads to an expanded visualization of musical expressiveness through the body. A such, the approach can be used at different skill levels, ranging from beginners to advanced students.

Such a trajectory aligns with Bronfenbrenner's (1979) idea that development requires the repeated occurrence over time of increasingly complex activities. Importantly, a kinemusical approach does not involve a strict repetition of the same movements that increase in complexity, but always combines the repeated occurrence of movement or musical patterns with a portion of free and autonomously decided elements. In other words, improvisation with movement or with music is always part of the experience. For example, the same movement pattern might be combined with increasingly complex musical possibilities for improvisation, such as using pentatonics instead of only three notes, or a certain scale instead of pentatonics. Another way is to increase the complexity of rhythmical patterns on which a learner can improvise while doing a certain movement pattern.

In addition, within the trajectory of developing increasingly complex—imposed—movement patterns (e.g., a specific stepping pattern), free movements are continuously integrated, allowing learners to explore possible music–movement associations, to freely implement learned patterns, and to explore variations and elaborations. Typical activities are moments of free improvisation, inviting students to invent a kinemusical performance or to improvise with music and movement on some background music (see Figure 6 for a snapshot of a joint improvisation).

Figure 6. Kinemusical activity using free improvisation with music and movement.

Furthermore, activities often promote continuous movement, characterized by uninterrupted, smooth actions and contrasting with discrete movements, i.e., periodic actions preceded and followed by a period of no or little motion (Braun Janzen et al., 2014). Although musicians are mainly skilled at discrete and regularly timed rhythmic actions (Braun Janzen et al., 2014), the experience and development of continuous movement is beneficial. First, in line with Gordon's view that free movement is an important starting point, because—in his view—learners need to experience *continuous fluid movement*, i.e., free, unbound, lightweight, continuous flowing motion, exploring and filling all of the surrounding body's space (Westervelt, 2002), before they learn to focus on beat movement and before they experience movement focused on space and time (Gordon, 2003). Free movement allows learners to discover and develop a spontaneous interaction between movement responses and the music they play. Moreover, as Slepian and Ambady (2012) found that fluid movement can lead to enhanced creativity, promoting creative generation (e.g., musical ideas), cognitive flexibility (e.g., switching between musical possibilities), and remote associations (e.g., giving meaning to the music), all of which can arguably play an important role in interpretation and improvisation. Moreover, Nijs et al. (2024) emphasize the role of body movement in creative interaction with music. According to the authors, body movement supports creatively exploring the musical environment and developing a deepened musical understanding through purposeful affordance navigation. This was supported by the work of Fortuna and Nijs (2019, 2020, 2022), showing that not only does movement have an impact on the way children make sense of music, but also that the nature of that impact is linked to the type of movement used. Children perceive more and different elements in the music when movement is used while listening than when they talk about the music they listened to. In addition, such increased differentiated listening is enhanced by the type of physical movement (e.g., fluid versus rhythmic) used to express the music.

4.5. Preparing the Performing Body

Finally, a fifth premise concerns movement-based activities as a means to train the performing body. Performing is a physically demanding activity, and developing musicians may develop unhealthy playing habits while practicing, leading to discomfort or pain, and even to injury (Ackermann et al., 2002). Russell and Benedetto (2014, p. 260) therefore state that it is imperative to "develop healthy practice habits from the beginning of their study so that they may become lifelong music makers unencumbered by pain". In their

view, teachers should play an active role in preventing student pain. Baadjou (2018, p. 14) believes that, to improve the health of future musicians, it is necessary to integrate health education in music schools.

A typical strategy to prepare the performing body involves warming-up activities. While Williamon (2004, p. 84) mentions that such warming-up "does not mean playing scales and specific exercises for the instrument" but "stretching the arms above the head, stretching the neck in all directions, arm circling, elbow rotation, wrist shaking, knee bends, trunk rotation, and deep breathing" (see, e.g., Frederickson, 2002), Baadjou (2018, p. 14) asserts that such physical warming-up is, in contrast to sport athletes, only practiced by a small number of musicians. Musicians' warming-up concerns mostly practices with the instrument, such as slow scales, long tones, or finger exercises.

A kinemusical approach integrates both musical (e.g., long tones, slow scales) and physical (e.g., stretching, knee bends) warming-ups. For example, different musical warm-ups are used in an activity that seeks to loosen the degrees of freedom in the joints (see Figure 7). Learners explore the degrees of freedom in the different joints while interacting with the instrument and, as such, 'negotiate' possibilities with their instrument, preparing the creative use of the body in expressively responding to music. According to Torrents et al. (2021), the release of degrees of freedom promotes exploratory behavior and, as such, motor creativity, especially when doing it in a group (Kimmel et al., 2018). Considering the embodied nature of musical creativity, motor creativity in alignment with music may lead to musical creativity (Nijs et al., 2024). At the same time, this activity may help to increase awareness of the degrees of freedom and, as such, to counterbalance a tendency to freeze degrees of freedom at the beginning of the instrumental music learning process (Konczak et al., 2009).

Figure 7. Loosening the joints: learners explore the degrees of freedom in the joints while playing.

Finally, loosening the joints and exploring the different joints' degrees of freedom may contribute to the musician's flexibility, which is an important element in skilled physical behavior, such as playing music (Bernstein, 1967; Tuitert et al., 2017). For example, according to Wilke et al. (2011), violinists lack sufficient joint range in the shoulder and arms. In their view, this lack of flexibility may be addressed through training, improving coordination skills, and preventing muscle shortening. Training commonly involves muscle stretching and the mobilization of passive structures such as tendons, ligaments, and joint capsules. Kinemusical activities integrate such training into musical tasks.

Adding extraneous movement to playing an instrument may also contribute to developing task-specific endurance. Endurance is, next to flexibility, an important element of music performance (e.g., Wilke et al., 2011). Commonly, musicians' endurance is addressed and improved through activities such as walking, running, cycling, and swimming. Such activities may enhance general endurance, but not necessarily task-specific endurance. As kinemusical activities most often involve the instrument, endurance may perhaps be trained while playing.

As discussed earlier, kinemusical activities introduce movement variability in performance, which has been related to reduced fatigue as it distributes muscle activity (Bauer et al., 2017). It is known that the repetitive nature of practicing an instrument may induce muscle fatigue and constitutes an injury risk factor (e.g., Goubault et al., 2023). Variability has been observed to be a strategy to cope with endurance problems. Moreover, studies suggest that kinematic adaptations to enhance endurance can happen in different body segments depending on the task performed (Goubault et al., 2021). Interestingly, Turner et al. (2023), who conducted a study on the influence of proximal motor strategies on pianists' upper-limb movement variability, concluded that "pianists should consider incorporating trunk motion and a variety of shoulder movements as performance strategies while performing leap motions at the piano, as they might reduce exposure to risks of injury." Kinemusical activities typically involve trunk movement, in addition to, for example, walking or on-the-spot stepping while playing (see Figure 8).

Figure 8. Children walking around while playing.

The above-described premises guide the use of movement-based activities. Such activities are primarily group-based and can be used in different contexts, such as ensemble playing or group-oriented instrumental learning. While being group-based, activities provide ample opportunity to address individual development of technical, expressive, and communicative skills (e.g., Schiavio et al., 2019). In addition, playing by ear is an essential component of the approach, thereby potentially contributing to learners' listening, creativity, and improvisation skills (Varvarigou, 2017). Improvisation is a core musical activity within the kinemusical approach, giving space for the individual learner to explore and experiment with the connection between body, instrument, and musical parameters such as melody, harmony, or rhythm, and for the teacher to holistically observe and guide the students' learning process through differentiation in accordance with their individual needs. At the same time, exploring and experimenting together through improvisation may promote peer-to-peer learning. Indeed, while trying out connections between music and movement, learners are actively constructing knowledge together rather than passively receiving it.

Next to improvisation, the kinemusical approach can be coupled to repertoire, whether preparing it through activities that use the building blocks of a musical work (e.g., specific rhythms or scales), or exploring and experimenting with movement to specific parts of the work in view of learning how to interpret or expressively perform the music.

In this way, the kinemusical approach can be adapted to different skill levels, from beginner to expert, and to different subdomains of music education, such as classical or jazz training, folk or experimental.

5. Creating the Synergy Between Well-Being and Musical Development Through the Integration of Movement in the Instrumental Learning Process

In their article "Flourishing in Resonance: Joint Resilience Building Through Music and Motion", Nijs and Nicolaou (2021) argue that when combining music and movement, children engage in empowering musical sense-making processes that support them in growing together and deeply experiencing eudaimonic values such as self-awareness, confidence and self-esteem, personal autonomy, connection, belonging, and bonding. This very idea is paramount to the connection between a kinemusical approach and the adoption of a caring stance in instrumental music education. Both music playing and movement have been found to positively influence well-being, leading to, for example, increased experiences of pleasure, a sense of accomplishment, meaning, and a sense of self. Both also stimulate connection, bonding, and a sense of community (e.g., Savage et al., 2021; Behrends et al., 2012). Finally, movement has even been shown to increase the likelihood of developing a sense of purpose and increasing meaning in one's life (on music, see: Croom, 2015; on movement, see: Buecker et al., 2020).

In what follows, I describe two kinemusical activities that may exemplify the integration of PERMA in relation to the constraints that shape the interaction in a music lesson. The descriptions are not exhaustive but invite the reader to engage in a meta-reflection on how the presented framework might be used when reflecting on the design of musical learning activities.

"Meet 'n greet"

Consider the following kinemusical activity, called "Meet 'n greet" (see Box 1). The activity is based on the idea of 'shape' in Laban Movement Analysis, through which the body changes shape and attitude in relation to others (Bradley, 2008). This kinemusical integration of Laban's 'shape' concept extends beyond traditional movement analysis by embedding musical elements directly into the performing learner's kinesthetic experience. Where Laban's framework examines how the body's spatial relationships and postural changes communicate meaning, the kinemusical approach uses these changes in shape to guide and structure the creative use of musical parameters—such as rhythm, dynamics, and melodic contour. This creates a bidirectional relationship: the body's changing shapes influence musical expression while musical elements simultaneously inform movement quality and spatial awareness, thereby deepening participants' embodied understanding of both domains.

Box 1. Meet 'n greet.

In the first part, learners freely walk around (without their instruments) in the classroom. When passing somebody, they shake hands to say hello (no words!). The way of shaking hands is changed on cue, switching between different shape qualifications, namely *shape-flow* (self-directed; handshake without being interested in the other), *directional shape* (spoke-like and arc-like movement that bridges from self to the environment, like a professional handshake), or *shaping* (rich mutual and sophisticated interaction supported by full-bodied interactions, very expressive and somewhat exaggerated handshake as if meeting somebody you like a lot and didn't see for a long time).
In the second part of the activity (see Figure 9), students walk around (with their instrument) and, when passing somebody, they improvise a musical motif on their instrument to say hello in accordance with the different shape levels (uninterested, professional, expressive). Again, the way of musically saying hello is changed on cue.

Positive Emotion: According to Sheikh Asadi and Hojat (2020), educational programs emphasize the psychosocial characteristics of a learning environment, often ignoring the physical dimension. The authors plead for strategies that connect the physical and the

psychosocial to promote positive experiences. The "Meet 'n Greet" activity establishes such a connection. Moreover, it manipulates the emotional state and the arousal states of the participants, both considered individual constraints (Teune et al., 2022). Through the different ways of greeting each other (task constraints), whereby the three ways of shaking hands involve different levels of expressiveness, this activity induces an increase in arousal, easily culminating in enthusiasm and laughter. According to Leman (2016), in human interaction with music, not only mere movement but specifically movement in alignment with music may lead to a positive emotional state (Leman, 2016, p. 234) and, especially in combination with physical effort, to affective involvement (ibid., p. 264). This aligns with Riva and Gaggioli (2015, p. 42), who assert that "a positive emotion is achieved by increasing the valence (positive) and arousal (high) of core affect (affect regulation) and by attributing this change to the contents of the proposed experience". Note that arousal constitutes, in combination with motivation, the energy input into learning and, as such, impacts focus, effort, and behavioral regulation, and consequently learning (M. J. Davies & Davies, 2018).

Figure 9. Students walking around and musically greeting each other.

Engagement: The degree to which students are engaged in an activity (individual constraint) strongly relates to how they feel up to the task (Nakamura & Csikszentmihalyi, 2002). Carefully manipulating the task constraints helps establish a balance between the learners' skills and perceived challenge and is therefore a viable way to promote engagement (Csikszentmihalyi, 1990). Here, the task of greeting each other is manipulated in two ways. First, the activity switches from a movement activity to a musical activity, keeping the same overall task: greeting each other. Second, the overall task is manipulated through the three shapes.

The first part is not really challenging. However, the three styles of shaking hands involve increased expressiveness and may induce a more focused attention, which is an important element of engagement. Arguably, the three shapes increase the positive emotional stimuli involved in the interaction, and such stimuli have a unique capacity to capture attention (Gupta, 2019). Moreover, the three shapes manipulate the subjective dimension of the environment, creating a transformation of the atmosphere in the classroom.

The second part involves a change from a rather obvious and familiar action (shaking hands) to a more challenging (playing the instrument) action. The challenge may stem from the unfamiliarity with performing in such a situation or with the mere act of improvisation, but also from one's intention to match the emotional nuances of the handshakes with their musical expressions. Yet, the openness of the task allows students to balance their skills and the challenge and, as such, creates an important condition for having a flow experience or strong engagement (Csikszentmihalyi, 1990; Chen et al., 1999). Note that the skills-challenge balance may be manipulated by introducing extra task constraints. For example, the students can be invited to improvise their musical greetings in a pentatonic scale, or the teacher may accompany the activity on the piano and ask to improvise in the

tonality of the accompaniment. In this way, the premise of the kinemusical to go from simple to complex can be implemented.

Relationship: Promoting positive relationships is an important strategy to foster well-being in and through musical development. The "Meet 'n Greet" kinemusical activity creates a learning experience that may support building and strengthening relationships in the classroom. By changing the shapes (task constraints) throughout the activity, this activity affects how students connect and relate to each other. While the "shape"-way of greeting might elicit more positive emotions than the "shape-flow"-way, due to the more expressive and exaggerated handshakes, the former is also akin to meeting someone you like, while the latter involves minimal engagement with the other person.

Furthermore, while the "Meet 'n greet" activity is in essence a group activity, it promotes dyadic interactions (task constraint). According to Bronfenbrenner (1979, p. 56), dyads are the most basic relationships providing a critical context for development. Moreover, according to the author (Ibid., p. 77), it is important to foster different dyadic relationships within the classroom. This is exactly what this activity does. To promote development, dyads need to be *reciprocal* (actions of one member always influence the actions of the other), balanced in power (equal influence over each other), and *affective* (having positive feelings towards each other). Clearly, the "Meet 'n Greet" activity displays these characteristics. In addition, the activity promotes two functional forms of dyads, namely the *observational* (see/hear the other greet) and the *joint activity* (doing/creating things together).

Meaning: While in positive psychology and especially in Seligman's PERMA model, meaning is conceived from a more long-term and broad perspective, i.e., a sense that one's life matters or belonging to something greater than oneself, this building block can also be considered important in the immediate interaction. As Silverman (2020) states, expressing oneself creatively and the pursuit of freedom through music can be seen as examples of meaning as conceived within the PERMA model. Moreover, people who engage frequently in activities they find personally meaningful are likely to have their meaning systems reinforced and thus experience greater overall meaning in life (Bundick, 2011). As such, I believe it is important to acknowledge the importance of a repeated experience of finding and constructing meaning in music. Here, Leman's view on the empowering nature of musical expressiveness is of interest (Leman, 2016). In his view, musical meaning formation emerges from dynamic interactions with the (musical) environment, and "expressive interaction with music is meaningful in itself, because it is empowering" (Leman, 2016, p. 27).

As task constraints, the different shapes provoke expressive interpersonal interaction and, as such, support engaging in a meaningful experience. Moreover, as this activity also manipulates arousal levels (individual constraints), it heightens responsiveness to sensory stimulation and promotes expressive interaction (Reybrouck & Eerola, 2022). Within that expressive interaction, students have to freedom to experiment with musically expressing different intentionalities, such as not being interested in each other, greeting formally, and, finally, greeting expressively. The free walking through space and meeting different peers creates an atmosphere (environmental constraint) that promotes variation through connection. That is, students can inspire each other to express themselves in different ways, trying out different musical motifs while playing with musical elements such as pitch, rhythm, loudness, or timbre. Such playfulness constitutes meaningfulness and, as such, not only promotes positive emotions and connectedness with each other but also contributes to the process of musical sense-making. Arguably, the accumulation of such meaningful musical experiences fosters the perception of expressing oneself musically as something meaningful in life.

Accomplishment: The PERMA model emphasizes the importance of the perception of accomplishment (Seligman, 2011). A sense of accomplishment is the result of working toward and reaching a specific goal, controlling and mastering the process toward the goal, and having self-motivation to finish what one sets out to do. The Meet 'n Greet activity is a playful activity that allows learners to explore their own expressive abilities within their set of abilities (individual constraints), providing students with instances of accomplishment. Note that in traditional instrumental music teaching, accomplishment is often related to instrumental and interpretative skills in the context of score playing, and to hours and hours of deliberate practice. Here, the task is rather open, appealing to students' self-regulation skills (individual constraint). Self-regulation encompasses goal setting, the pursuit of realizing the goals through performance, and evaluating one's performance in relation to the goal (Schunk & Zimmerman, 2003). The latter also involves one's responses to self-evaluation, including feelings of (dis)satisfaction. In that sense, it can be related to accomplishment.

By manipulating the task constraints, for example by integrating certain boundaries such as tonality, new challenges can be created to develop new competences. In this way, the task—when repeatedly engaged in—can become increasingly complex, which is an important driver for development (Bronfenbrenner, 1979). The activity can be seen as a proximal process, working towards—often with incremental steps—and attaining the goal of greeting each other musically in different degrees of complexity or difficulty, which may reinforce a person's development and sense of achievement when adapted to the individual abilities (individual constraints). Importantly, the sense of accomplishment goes beyond individual achievements based on the complex interactions between an individual and their environment. Here, interacting with the environment mainly consists of interacting with peers, whose reactions may contribute to the sense of being successful in generating an expressive gestural or musical greeting.

Note that the description above of the "Meet 'n greet" activity indicates the interrelatedness of the different constraints. This is exactly what is foundational to the dynamics of the learning activity, as proposed by Bremmer and Nijs' model of a music lesson (See Figure 2). Through the interaction between the constraints, the interaction between the teacher, learners, and content self-organizes and leads to learning as an emergent process.

Step 'n play

The next activity (see Box 2 and Figure 10) focuses on synchronization as a fundamental and powerful mechanism of musical interaction (Leman, 2016; Timmers et al., 2021).

Figure 10. Three students engaging in the Step 'n Play activity.

Box 2. Step 'n Play.

Students start stepping together using a specific pattern, often used in folk dance, namely the sideward close step. They are instructed but given some time to find each other's tempo and synchronize. When they do, the teacher (or peer) gives a cue and part of the students (determined beforehand or by a sign of the teacher) start playing a whole note (w), at the next cue, a next group starts playing 2 half notes (h h). A next cue triggers a final group to play 4 quarter notes (qqqq). On a sign (e.g., explicit gesture), students switch to another pattern. At a certain point, the teacher may invite a student to improvise or play a certain melody.

Positive Emotion: In addition to the effects of movement discussed in the previous activity, this activity emphasizes synchronization and kinemusical coordination, i.e., the coordination of music and movement. Synchronization with others and with music, or the coupling of sensory (seeing the others, hearing the music) and motor (stepping) processes, is related to positive emotion (Janata et al., 2012; see also Mogan et al., 2017). When this is done in an effortless way, it leads to the experience of the groove (Janata et al., 2012). According to Vander Elst et al. (2021), the connection between music, movement, and the groove leads to the experience of pleasure and positive emotions. Interestingly, the effect of synchronization on positive emotion increases as group size increases (Mogan et al., 2017), which suggests organizing this activity with many students. At the same time, positive emotions foster synchronization (Smykovskyi et al., 2022). Arguably, this leads to a reinforcing loop between synchronization and positive emotion. Such a loop operates simultaneously as a cognitive–affective mechanism (through shared emotional processing, e.g., Phillips-Silver & Keller, 2012), an embodied mechanism (through motor coordination, e.g., Tschacher et al., 2014), and a social mechanism (through enhanced group cohesion and interpersonal understanding, e.g., Cheong et al., 2023). Similarly, Leman (2016) argues that musical expression intervenes in a cognitive–motivational loop that empowers people. In his view, this loop emerges from the transition process (see further) based on the mechanisms of musical sense-making.

The Step 'n Play activity fosters an important basic mechanism of musical sense making, namely entrainment, i.e., the alignment or coordination of bodily features with recurrent features of the environment (Clayton et al., 2005; Leman, 2016). Entrainment is the process of being pulled towards synchronization and happens between people (*interpersonal* entrainment) and between people and rhythm (*rhythmic* entrainment), often using overt movement (*motor* entrainment). Similarly to all kinemusical activities, the Step 'n Play activity involves playing and moving together, and therefore can support the different types of entrainment. Note that, according to Leman (2016), synchronization, as an expressive alignment with music, draws upon the ability to predict the music and to adjust the movements in agreement with the music, leading to arousal and positive valenced emotions.

Considering the above, one could argue that this activity manipulates emotion as an individual constraint. In addition, the activity facilitates coordination between students and, as such, manipulates the individual coordination and synchronization abilities. While individually synchronizing with music might be difficult for some, moving together can be said to mediate the synchronization with music (see also Leman, 2016 on facilitation, p. 205). This also relates to the manipulation of task (e.g., manipulating the rhythm patterns, tempo, melody) and environmental (social choreography, see further) constraints.

Engagement: Synchronization, or moving one's body in time with the music and with others, is a task that requires sensorimotor integration, which is based on the coupling of perception and action (Stupacher, 2019). According to Nijs et al. (2012), the perception-action coupling is related to flow dimensions such as skill-challenge balance, immediate feedback, sense of control, and merging of action and awareness. Chirico et al. (2015, p. 10)

go a step further and consider the sensorimotor coupling as "the core of flow itself and of its relationship with music". This resonates with the findings of Stupacher (2019), who found that successful perception-action coupling is an important factor for the experience of flow. In addition, the author (ibid., p. 356) states that "the coupling between perception and action—that is, entrainment between musical rhythm and body movements—induces a deeper musical and temporal understanding (compared to temporally incorrect or absent movements), which leads to a more intense experience of the flow dimension fluency of performance."

One of the most salient conditions for flow is the perceived balance between skills and challenge (individual constraint). Here, the premise of the kinemusical approach "from simple to complex" is important. It allows adapting the task to the individual constraints (e.g., motor abilities, instrumental skills) of the students.

However, it is important to go beyond the individual experience, as kinemusical activities always concern joint actions, involving an experience of interpersonal action and participatory sense-making (De Jaegher & Di Paolo, 2007). That is, learners engage together in different movement-based activities, thereby developing shared forms of communication and meaning-making through bodily gestures and musical utterances (Schiavio & De Jaegher, 2017). Arguably, this may facilitate experiencing flow (Sawyer, 2015). Here, the concept of group flow is important. Group flow is a state of collective optimal performance and heightened engagement experienced by a group of individuals working together towards a common goal (Pels et al., 2018; in music, see, e.g., Borgo, 2022, pp. 239–240). Both music making (see Chirico et al., 2015; Habe & Biasutti, 2023) and moving together (e.g., Łucznik & May, 2021) have been found to promote flow experience.

Both for the individual and group dimensions of flow, the environmental constraints can play an important role. The kinemusical approach works with different *spatial* and *social* choreographies. Here, the term choreography does not refer to a predetermined set of movements but to how action is organized. The former concerns the spatial organization of the group, such as free moving, standing in a circle, facing each other, or standing next to each other; the latter concerns the social organization, such as individual, dyad, small groups, or whole group. Such choreographies can be considered environmental constraints that can foster the conditions for flow. For example, moving together in a circle or facing each other in a dyad might support visual feedback on the movement and facilitate synchronization (e.g., Colley et al., 2020; see also Leman, 2016, p. 205 on facilitation). Standing next to each other while doing a stepping exercise might help to perform a movement pattern and, as such, support the balance between skills and challenges. The Step 'n Play activity can adopt different social and spatial choreographies.

Relationship: Moving together is bonding together, or in other words, is establishing positive relationships with each other. A plethora of studies show that engaging in joint music making, and, in particular, due to the synchronized nature of it, promotes social skills and interpersonal bonds (see, e.g., Mogan et al., 2017 for an overview). Some would call synchrony even a form of social glue (Fujiwara et al., 2020). Some aspects of interpersonal synchrony are worth mentioning in the context of the presented kinemusical activity. For example, children synchronize better when instructed to do so (Howard et al., 2021). In the Step 'n Play, children are asked to synchronize (task constraint). Moreover, research has shown that synchronizing with others improves when an external rhythm, such as the musical patterns that are played in this activity (Gipson et al., 2016), is available through multiple modalities. In this activity, the external rhythm is available in the movement (doing it yourself) and thus in the visual (seeing the others), and in the auditory modality (hearing oneself and the others). As such, it can be argued that the Step 'n Play activity promotes synchronization and, as such, supports the development of positive relationships within

the group. The task constraints can be modulated through different stepping patterns (e.g., sideward vs. for/backward sidestep) or by inserting moments where everybody plays the same musical pattern before switching patterns. The environmental constraints can be manipulated through the spatial and social choreographies. For example, the visual modality can be intensified by working in dyads or by positioning according to musical pattern (see Figure 11).

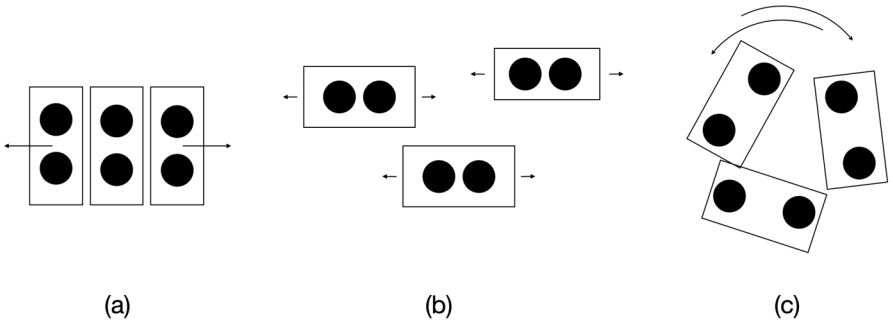

Figure 11. Example of keeping the same social choreography (dyad) with different spatial choreographies: aligned (**a**), grouped (**b**), and a circle (**c**). The arrows indicate the direction of stepping or walking.

Meaning: Given the focus on synchronization in this activity, it is of interest to elaborate on the connection between synchronization and meaning or (musical) sense-making (i.e., the creation and appreciation of meaning; De Jaegher & Di Paolo, 2007). Two types of synchronization need to be considered, both being task constraints, as learners are invited to synchronize movement and music. A first type concerns interpersonal synchronization, involving the planned interpersonal coordination of music and movement. In a sense, participating learners become coupled systems, "participating in, and thus can form and transform each other's sense-making, enacting unique shared worlds of meaning" (Schiavio & De Jaegher, 2017). With Fuchs and De Jaegher (2009), we can say that the kinemusical activity creates a mutual coupling between learners' lived bodies, mediated by the close step pattern and the musical patterns (w, h h, qqqq). Playing oneself, but also watching and hearing the others, may in the end turn a sense of I-agency into a sense of we-agency, through the process of mutual incorporation, i.e., when the lived bodies of individuals extend and form a common intercorporality (Fuchs & De Jaegher, 2009; see also Pacherie, 2014). Arguably, this process facilitates and supports the basic mechanism of musical sense-making as forwarded by Leman (2016). As such, it also contributes to the second type of synchronization, namely the (individual) synchronization between music and movement.

By manipulating the environmental constraints (e.g., social and spatial choreographies) and the task constraints (e.g., switching between patterns, tempo), this kinemusical activity introduces variations in the way learners need to address these basic mechanisms. For example, switching between a pattern may interfere with entrainment, and as such with synchronization, urging the learner to adjust at the sensorimotor level (see Leman, 2016, pp. 165–166). Such variations are essential in the learning process (e.g., Schmidt, 1975; Schöllhorn, 2000).

Accomplishment: A sense of accomplishment can be related to a sense of empowerment, i.e., "the process of gaining some control over events, outcomes, and resources of importance to an individual or group" (Fawcett et al., 1994). In the domain of music, empowerment has been defined as the process of "becoming stronger and more confident in our interactions with our environment, thanks to successful meaning creation processes during interaction with [music]" (Lesaffre & Leman, 2020, p. 48). In this process, a state of equilibrium—or: homeostasis—emerges through a cognitive–emotional loop that is

"based on emergent pattern processing [cognitive], the biosocial drive to display affect, attitude, feelings, moods, and the reinforcing effect of arousal and pleasure [emotional]" (Leman, 2016, p. 140) and that is established throughout expressive alignment with the music. The presented kinemusical is based on such alignment with music through the stepping patterns.

According to Leman (2016), empowerment emerges from a set of transition processes. The first transition process concerns *predictive* processing, leading to a sense of agency: being able to predict what comes next in the music and to successfully align one's movements to music induces a feeling of being in control, and this may cause feelings of satisfaction, reward, and immersion (Clarke, 2014). The task constraint of moving together supports the facilitation of timing, "outsourcing" the counting to the step close movement (Leman, 2016, 205 e.f.). This helps focusing on the musical patterns. This is also of particular interest for the improvising learner, as cognitive resources can be more fully devoted to inventing melodies on top of the different rhythmic patterns played by the other learners. Rather than keeping track of timing by counting, timing is read from the trajectory of the stepping pattern, and all attention can go to the improvisation. Moreover, such outsourcing is additionally supported by seeing others moving (environmental constraint).

The second transition process concerns *energetic* processing. Physical activities to music may induce physiological and psychological states of being awake, alert, and excited and, thereby, improve executive functions (Byun et al., 2014) and facilitate higher cognitive functions (Audiffren & André, 2014).

The third transition process is about *expressive* processing, leading to the attribution of an emotional value to music, such as pleasant vs. unpleasant, happy vs. sad (Roda et al., 2014). Here, the task constraints can be manipulated by introducing specific musical elements such as minor vs. major chords or moving happy vs. moving sad. The improvising students might be asked to invent something happy or sad. Doing and seeing the movements of others may have a reinforcing effect on the individual state (individual constraint) (Shafir et al., 2013), thereby contributing to the collective sense of agency.

In the foregoing, I have focused on synchronization as the core of the Step 'n Play activity. As a final note on this activity, it is important to address the possibility of integrating improvisation. At some points, a learner may be invited to improvise. Here, the new individual task constraint addresses the individual constraints, such as the ability to invent music, creative abilities, and audiation (see also Bremmer & Nijs, 2020, 2024). Following the "from simple to complex" premise, it is possible to align with such individual constraints. While environmental constraints such as social and spatial choreographies are less important in this case, I would like to point out the atmosphere in the classroom as an important environmental constraint.

6. Discussion and Conclusions

This paper introduces a view on instrumental music education that seeks to create synergy between musical development and the development of well-being, considering such a caring stance as the DNA of music education. As argued, the caring stance is realized by connecting musical development and the development of well-being through the integration of the building blocks of well-being into a constraints-led approach to designing the instrumental music lesson.

The presented view resonates with "positive education", i.e., the teaching of both traditional school skills and skills for enhancing well-being (Seligman et al., 2009). Certainly, regarding the use of PERMA in music education, different approaches exist that, to some extent, come close to the work presented here (e.g., Burzik, 2003; Parente, 2015; Patston & Waters, 2015; Riggs, 2006; Ye, 2020). However, to our knowledge, there is no work

in the domain of music education that proposes an educational approach that builds on Seligman's PERMA model of well-being as a tool for educational design, nor frames that within a broader pedagogical perspective such as the Embodied Music Pedagogy as presented by Bremmer and Nijs (2020, 2022).

Additionally, the presented work introduces an approach to instrumental music education, emphasizing the embodied nature of learning. This so-called "kinemusical" approach builds on the intrinsic link between music and movement but differs from approaches such as Dalcroze's Eurhythmics in its use of deliberate extraneous movement *while* playing the instrument. In this way, it seeks to educate the performing body beyond a mere instrumentalist approach to the body and musical instrument.

This is a rather controversial approach, but one that, given the amount of theoretical and empirical science-based arguments, is worth considering. Indeed, next to the idea that such an approach might counter a certain rigidity to the body in the traditional training of musicians (see Box 3), the kinemusical approach to instrumental music learning and teaching potentially promotes the building blocks of well-being. As argued in this work, the approach lends itself adequately to adopting a PERMA lens in the constraints-based design of activities.

Box 3. Movement and music performance.

> The most astonishing thing about the Berlin players is that they move when they play. You can see the violinists putting their entire bodies into many bow strokes. You see them bend forward, then swing their bodies back. The basses were especially dramatic. The principal bass at Tuesday night's concert all but spun his instrument during the Mahler Ninth. He just about danced with it. Sometimes the entire section almost danced, each player in his own way.
> So here comes the punch line, a truly brutal one. Classical musicians are taught not to move. I've heard that from my Juilliard students. Their teachers tell them not to move when they play. It's undignified, they're told, it's not artistic. And after last night's Berlin concert, after Das Lied, I ran into a musician I know who plays in one of America's big orchestras. He was terrifically moved by the concert, and, like me, he'd noticed how the players move. He loved it, and understood, just as I did, how the movement helps the Berlin Philharmonic produce its sound. But at his orchestra, he said, he and his colleagues are forbidden to move.
> This rigidity has got to go.
> http://www.artsjournal.com/sandow/2007/11/berlin_moves.html (accessed on 15 September 2025)

The kinemusical approach seeks to move away from a mere focus on templates of right postures and playing gestures and to free the performing body through the integration of extraneous movements that build on the natural connection between music and movement. While some scholars and musicians are exploring this avenue in performance (e.g., Newland, 2014), in education, this is rather unexplored. Often, it is assumed that musicians need to "rehearse their physical actions until they achieve fluency, or an incompressible minimum time to execute them" and that it takes years to achieve such fluency (Davidson & Brighton, 2009, p. 576). Here, bodily freedom, often connected to expressiveness, is associated with the degree of expertise, adopting a linear conception of technique and expressiveness (e.g., Meng, 2024): once technical accuracy is secured and attention is freed from technical concerns, the expressive layer can be added. In other words, a musician's bodily freedom is cultivated through the acquisition of expertise. A kinemusical approach starts from the idea that the cultivation of bodily freedom from the very start of the instrumental learning process may contribute to expertise, contributing to a deepened relationship between musician and instrument. In addition, it builds on the idea that the combination of music and movement has an empowering impact (Leman, 2016) that may contribute to well-being and musicians' health. While theoretical arguments

for this idea have been provided in this paper and elsewhere (see also Nijs, 2019; Nijs et al., 2013), it is necessary to further empirically investigate this potential.

Also, the kinemusical approach emphasizes group learning, whether integrated in regular instrumental teaching or as a complementary class. In the Western conservatoire tradition, one-to-one teaching is still prevailing. However, an increasing body of research points to the benefits of learning to play an instrument in a group (e.g., Roden et al., 2012). Hanken (2016), for example, demonstrates how complementing one-to-one lessons with group lessons in instrumental music education promotes peer learning, contributing to students' enhanced self-efficacy, improved ability to provide constructive feedback to peers, and the development of critical reflection skills essential for professional musicians. Nevertheless, it is important to acknowledge possible drawbacks of group-based learning (Brandler & Peynircioglu, 2015). Furthermore, group learning in the kinemusical approach involves creative exploration and experimentation with music and movement through improvisation. Interestingly, according to Burnard and Dragovic (2015), creative instrumental music group learning supports instrumental music learning and enhances pupils' sense of well-being. In a collaborative online music course with four adult novice clarinet students and special emphasis on creativity, mutual interaction, and bodily movement, Bremmer and Nijs (2022) point at the importance of establishing meaningful relationships with the musical instrument as well as with other students to build musicality, and of the interplay between creativity and control in individual and collective music-making activities.

Finally, the presented work is based on a tight connection between theory and practice. According to Kurt Lewin's Maxim, there is nothing as practical as a good theory. Both the PERMA model and non-linear pedagogy based on the constraints-led approach are, in my view, theoretical frameworks that support the design and development of good practices, and provide good models to be applied in teacher education in view of training reflective practitioners. As such, the presented work hopes to inspire pre- and in-service teachers to reflect on how theory and related research may inspire practice. Rather than conceiving theory as separate or distinct from practice, it is important for teachers to acknowledge the organic relationship between theory and practice and the benefit and even critical usefulness of drawing on formal (learning) theories to develop their subjective learning and teaching theory and to shape effective practice (Royea & Nicol, 2019).

Therefore, I believe that the presented work may inspire music educational researchers to investigate different aspects of instrumental music learning. Currently, the approach is theory-based, evidence-informed, and practice-based. However, a solid empirical foundation is needed, in combination with empirical studies that address possible effects on musical and well-being development. For example, longitudinal studies may look at the use of the PERMA model in view of avoiding dropout, and the use of movement in the instrumental music classroom may be investigated from the viewpoint of each of the PERMA building blocks. Do kinemusical activities promote engagement or flow? What is their effect on relationships? On how meaning is attributed to a performed composition? The presented work might be used to study movement-based music making in community music projects or related to educational technologies. Studies could look at the potential of a kinemusical approach to prevent playing-related musculoskeletal disorders (PRMDs). Another important element to address in research is teacher training and the development of the necessary skills to effectively guide or teach movement.

More than anything, the presented work aims at spurring a deepened understanding of and a dialog about the very fundamentals of instrumental music education, both regarding its pedagogical underpinnings and the didactic implementation of such underpinnings. Moreover, it invites others to fuel such dialog with insights from other disciplines than music pedagogy, such as musicology (e.g., embodied music cognition), educational sciences

(e.g., non-linear pedagogy), or sport sciences (e.g., constraints-led approach). As the French philosopher Gilles Deleuze writes in his *Différences et Répétition* (Deleuze, 1968), "*something in the world forces us to think. This something is an object not of recognition but a fundamental 'encounter'.*"

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