

Multisensory Musical Design: Views for Music as a Phenomenal Framework for Human, Phenomena-Based Education

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Abstract: Emotional capacity in music creates an innate human resource for well-being, learning, and interaction, inspired by sound environments, and integrated into life experiences through holistic, multisensory experiences. Sounds connect with natural instincts and cultural history. Today, the weak position of the arts strengthens the negative perception of them, shown in hardening societal values. In musical-artistic experiences, individuals and societies breathe better, and cultural phenomena and societies are thus recreated. This article proposes Multisensory Musical Design (MMD) as a musical cornerstone for human-oriented education. MMD is motivated by an understanding of human sensitive, social, and emotional qualities as they relate to tacit knowledge supported by music. I contemplate human artistic resources as a support for societal wellbeing, grounded in education. At the core of the MMD model, sounds and music create a natural power for human behavior via three basic concepts: faces, spaces, and timelines. Fetal multisensory processes linked with musical sounds for multidisciplinary dialogues are defined in music. The emotional dimension with flow (Csikszentmihalyi 2008), and the comprehension of multiple ways of knowledge with experience connect with music and tacit knowledge (Polanyi 1983), highlighted here as a foundation for human nature.

Keywords: Emotions, Flow, Multisensory experiences, Music integration, Tacit Knowledge, Holistic wellbeing

Music for the Arts and Soft Ethical Values in Human Societies

According to an African, Dagara tribe story told by Sobonfu Somé (1999), songs are part of life from the very beginning. To prepare for the child, a young woman will wait to receive a song of the baby, and teach it to the child's prospective father, whom with to invite the child together during the conception. Later, the child will be recognized by the song throughout the village, also after their death (Somé 1999). This song brings together child, family, and tribe. Throughout fetal development, they maintain a musical dialogue via multisensory communication and learning in the form of this song (Marjanen 2009). The song represents a phenomenal human power: expectation, expression, well-being, interaction, and culture. Music starts from emotional sounds.

The constructivist learning approach (Copple and Bredekamp 2009; Dewey 1956, [1934] 2005, [1938] 2008; Driscoll 2000; Elliott et al. 2000; Ernest 1994; Fox 2001; Oliver 2000; Tam 2000; Vygotsky [1930] 1978) is an accepted principle in learning music. Constructivist principles support the understanding from learning to teaching. Music benefits communication between master and novice, thereby serving the constructivist approach. From the laws of musical interaction, master-novice dialogue may be more comprehensible as a shared process, whereas in some other disciplines, trends of the behavioristic tradition learning-teaching dialogue may sometimes narrow interaction, or conversely, the dialogic space may be understood as too open, with no clear sounds admitted by the teacher; this impedes group learning.

A constructivist learning process may never exclude actors, being interactive or reciprocal. The phenomenal ability to share music is grounded in prenatal learning, connecting music and language, and even our oneness with nature. The multiple sensory—multisensory—world of experiences, thus explain why severing this connection is detrimental to man: holistic musical

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and sound experiences are conducive to listening and feeling both, the surroundings and the inner self. Hence music is conducive to recognizing and expressing our own and others' feelings. Music is a strong silent language, breathing in our lives.

Ryan and Deci (2000) describe intrinsic motivation in their self-determination theory. Learners clearly need to undersign their own learning processes to find a direction, and access teachers to share the whole learning processes. Motivation connects here with musical resonance: music in individual, communal, and cultural reflection, in civilized ways of life.² Observing the delicate strings of music individually, culturally, and globally is meaningful for the understanding of the dialogical processes. The power of music is magical and elusive. The significance of musicians to capture a fruitful, living soil in music can serve human culture and society and help people to connect.

I define "music" here both literally as vibrations transmitted through the air and figuratively as messages heard or felt through mental or physical experiences, due to multisensory human abilities. Music refers to the sounds experienced in life, from prenatal communication, transformed from the first bodily expressions into vocalizing and speech acquisition (Marjanen 2009). This innate expression is here observed as a core phenomenon connecting all the arts. Sound experiences are indispensable to all learning. We can hear nature's speech, smell and feel it, in whispers or thoughts. Prenatal experiences are multisensory, a tool to understand music integration. Appreciating human nature with soft ethical values creates value in decision-making: acknowledging the individual inner, mental, human instincts and multiple senses as necessary for holistic well-being—connected with music, sounds, arts, and the comprehension of knowledge. Conversely, hard values are those mainstream principles currently used to lead societies with thin listening abilities. Soft values connect communities; disconnected communities harm society (Ehrnrooth 2014). The thinning of human values and reduction of quality music performances reflects this (Harju 2015; Serrá et al. 2012).

Music connects learning and life (Costes-Onishi 2019; Honing et al. 2015; Huotilainen 2004; Ketovuori and Marjanen 2020). Musical experiences should help us acknowledge our values and reflect a dialogical-integrative way to learn and teach (Gruber 2019). In this article, music will be explained ultimately as a quality of a mankind. Despite all evidence of the connections between music in our lives, in a dialogue with the meanings of musical talent, it is not seriously observed. On the contrary, the declining position of the arts in education is evidenced in the termination of several arts education programs and curricula changes negative for music since 2011 in Finland. However, positive transformations due to the learner-centered, phenomena-based understanding have been recreated. MMD aims to situate concepts of music and sounds as experiences in life to enhance the understanding of musical education impinging on a sociocultural level.

All the connections of the wide, multiple connections of music cannot be presented here.³ Instead, the present focus is set on the real challenge of creating and explaining the MMD model itself. MMD is comprehended as a basic framework and explanation for music integration, a philosophical-pedagogical choice. It also aims to define the origin of music integration as actually equivalent to music. Holistic multisensory processes connect with a [musical] living space in multiple ways. When learning musical skills, the undeniable multisensory power of music affects us. A music learning pathway excised from the educational environment inhibits the understanding of knowledge and impairs interaction, abilities of being present and recreating cultural wellbeing: without music, the ability to read between the lines, listen to all modes of knowledge, and thus use language profoundly is weakened. Sense-based experiences connect with the innate need of beauty. They are defined via the prenatal world of

² Behavior and attitudes with mutual respect, social responsibility, human rights comprehended, and appreciation to diversity as richness: societies to better breathe.

³ For example, the theories on music and emotions as a deep-level orientation will be observed in detail later.

experiences. I next seek for the structures and connections to utilize integrated music pedagogies towards syntegeation (Russell-Bowie 2012), meaning deep-level arts-integration, a holistic pedagogical synthesis in arts for education.

Goals

The Dagara story by Somé about the tribe’s songs described how music, sounds, and languages affect people at the beginning of their lives (Arms 2002; Marjanen 2009; Somé 1999), connected with sensory experiences and holistic ways of learning and interacting. Music contributes to life-comprehension (Boyce-Tillman 2000). Music in experiences should make a change in mentality. Music comprehension and experiencing should be part of all education. A musical link between various learners can bridge the gap between academia and society in general. With MMD, I aim to increase the awareness of the value of the arts in higher education, which is explained from the very core of music to define the MMD core phenomena: faces, spaces, and timelines.

Note the challenge in Figure 1 below: absence of arts in education creates a deepening and strengthening negative circle to distance people from their ultimate nature. We may think of MMD as arts-based pedagogy from intrinsic human values, universally accessible. The goal is to break the vicious circle with the missing musical trend in education, and to confirm human-oriented musical-artistic significance. I contend adding musical-artistic elements to education, 1) presence and communication (Dillon 2006; Marjanen 2009; Marjanen and Cslovjecssek 2014); 2) well-being and motivation (Csikszentmihalyi 1990; Polanyi 1983; Ryan and Deci 2000); and 3) societal-cultural meanings will be better acknowledged. This is especially phenomenal for the human-oriented, multi-professional fields, e.g., social services, early childhood teacher, and schoolteacher education. Music integration as a pedagogical grip supported by professional music educators, toward the target groups helps access the ability of music to speak in us.

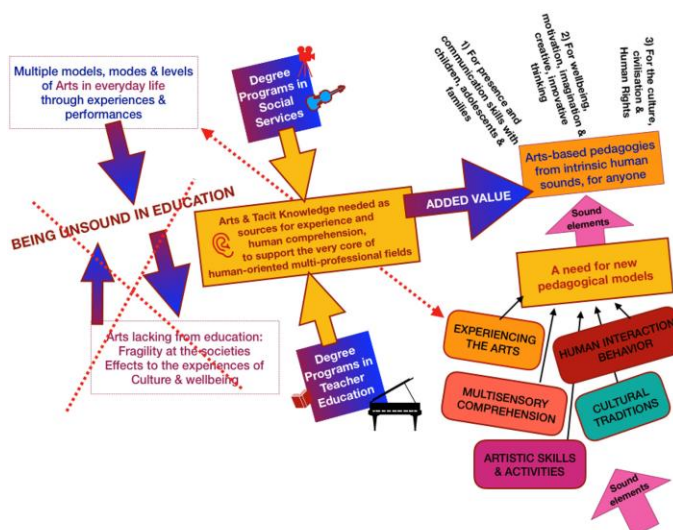


Figure 1: The Goals of the Article
Source: Marjanen

I define music as a flexible, multicultural, interactive tool. How to describe the multisensory, artistic factors in music to strengthen arts-based awareness of educational needs with wellbeing as a rule in learning, and as soft human values supported by human sciences

and phenomenological philosophy?⁴ The interactive nature of music helps transcend the learning levels of the European Quality Framework (EQF) (European Commission 2008). The following questions explore the basic MMD phenomena, with aims to benefit education and society in general:

1. **Faces:** To recognize and express ourselves and understand the other in sensitive ways, and to support the well-being of society, we should connect with our natural instincts and tendencies. How and why should we musically interact with the EQF?
2. **Spaces:** Musical sound is a strong factor in our experience of the environment. Comprehending these natural experiences may help us comprehend real and virtual learning spaces. How do we motivate positive changes in attitudes to foster music- and arts-based learning spaces in higher education, and musically strengthen the access for EQF?
3. **Timelines:** Music connects strongly with time from both individual and societal experiences, and from evolutionary history. How do we understand the meanings of music as timelines of education to refocus higher education curricula toward the EQF, supported by music?

I will explore the interactions between science, the arts, and pedagogy. I believe that models for arts in education could better serve everyday life. Weak, unsound, or negative aspects of the arts can and will be adjusted positively, toward well-being.

MMD frames the comprehension of scientific phenomenologically oriented knowledge via core identities in music as innate and undervalued within education. With MMD, we can design human-oriented education for numerous degree programs with better musical presence (Marjanen and Cslovjceksek 2014), and openness in education (Marjanen 2015, 2016a, 2021), to strengthen societies and cultures. Acknowledging that music, the arts, and language share the same structures is necessary to understand music in transversal learning. The dialogue around this subject will foster the transformation of traditional pedagogical designs to sound-inclusive ones, thus continuing Polanyi's ([1966] 1983) theory of tacit knowledge, and meanings of musical expectation. This initial work is the basis for MMD and the inclusion of the faces, spaces, and timeline concepts, searching for a musical cornerstone in education to serve the human society and culture.

Cornerstones of MMD as Bases to Music Pedagogies

Ontology and Epistemology of Music for Human Societies and Soft Values

Hermeneutic, phenomenological, qualitative research philosophies aim to explain human experiences as they are. Research into the arts connects two philosophies of existence and experience: ontology and epistemology (Tuovila 2003). Ontology is the study of being, explaining mental-spiritual-physical phenomena, such as music. Epistemology is the study of knowledge. These two philosophies are suggested to support and define experiential music learning, through methodological choices and development.

Music is a language of emotions. Theories on music and emotions, as expression, recognition and meanings at the levels of evolution, cognition and bodily knowledge, create an ultimate resource for the current comprehension. The design is, however, being currently described in a holistic view. A separate paper will follow to focus on music and emotions. Here, it is important to keep in mind, that emotions⁵ can be observed in affects and states of minds

⁴ Orientating with Edmund Husserl's (1859–1938) ideas, toward a number of rich approaches later.

⁵ “e-motere”: movement of the mind toward in(side) and out(side) (e away)

(Kokkonen 2010; Greenberg and Päiviö 1997), being automatic, biological reactions in the body, mind and behavior (Goleman [1995] 1997), and preceding and following the feeling (Damasio 2004). Collectively, affects can be observed in social moods, connecting with the feeling of atmosphere, shared among people.

Nussbaum's (2012) philosophy connected the ontology of music with meaning and emotion. The feeling of tone, the sense of movement in musical space, emotional arousal via specific emotional responses, and being supported by cognition are fundamental human ideals. Music as a concept sits between the physics of sounds, the ontological, and the organization of the human mind, the epistemological, a living record of evolutionary history with art as a cognitive function. Nussbaum (2012) describes music beautifully as a balance of extremes, with expectation with a deeply rooted human evolutionary ideal at the core of music. This philosophy with soft values supports recognizing human instincts as a natural resource in life.

Musical communication enables dialogues across boundaries of discipline, time, and space (Gruber 2012). Emotional influence for these dialogues translates between human societies and cultures, beginning with the prenatal interaction (Marjanen 2009). Music is connected with timeline ontology and event ontology (Raimond et al. 2007). Steane (2018) described the embodiment principle, science and religion, biology, uncontrolled change, and Darwinian evolution. Connections between music, human values, and the integration of science and the arts support experiences of beauty toward "general goodness"⁶ in society, with moral values and ethics. Music exists in breathing, silence, and the human self, in mind and body (Steane 2018), creating a narrative (Schmid 2009; Rantala 2014), and ecological framework for music (Schmid 2009). From the receiver's experience, music connects with time and space (Christensen 2012; Di Bona 2018). According to Di Bona (2018), we do not only hear the sounding space, but also the space itself, with vision and imagination. Music as embodiment connects listening and movement with individual and social narratives (for discussion see Anttila 2011; Ketovuori 2007; Nussbaum 2012; Steane 2018). Spaces in music have multiple roles, metaphorically but also literally (DiBona 2018).

Integrating music involves more than combining existing elements or inserting nonmusical elements into existing ensembles. Integration for a profound understanding of music must connect with the framework in question, and acknowledged, with subject-oriented expertise and the sum of those as a result of integration (Cslovjecsek and Zulauf 2018; Gruber 2012). Several fields of expertise are explained in inter- and intracultural, disciplinary, and personal development (Cslovjecsek and Zulauf 2018; see Figure 2).

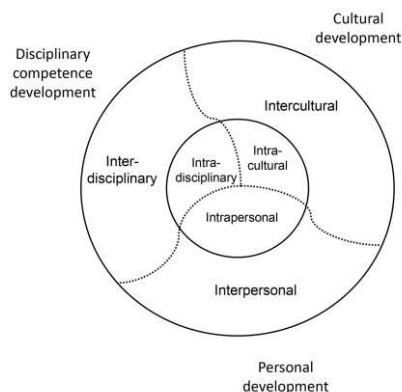


Figure 2: A Model of Integrated Education in Three Facets and Six Fields
Source: Cslovjecsek and Zulauf 2018

⁶ This is being observed as the core dimension and as a law for the human society, with musical impacts, eventually.

Music has strong connections with near-universal structures (Trehub 2000). As in Greek mythology, or the Finnish national epic “Kalevala,” with oral-poetical cultural tradition, MMD can be used to direct value-based education. Wallin, Merker and Brown’s (2000) evolutionary musicology theories provide a unique lens to contemplate Bowlby’s (1982) theory of attachment, closely connected with sound-based interaction between mother and baby. Darwin’s observations of smiling infants (Miller 2002) and Dissanayake’s (2000a, 2000b) investigations into various cultures’ early interaction processes suggest a bond between caregiver and infant as a synchronized attachment system (see Marjanen 2009). Odent (2007) believed this attachment was a natural instinct, connected with nature within a paradigm of evolutionary musicology (Wallin, Merker and Brown 2000). Music offers esthetic experiences as meanings for life (for further discussion, see Dewey [1934] 2005). Evolutionary utility with gratuitous esthetic pleasure should be carried on in music, to foster imagination and creative thinking (Nettl 2000; see also Hargreaves, Miell and MacDonald 2012).

Prenatal Development and Transversal Learning as Multisensory Internal Processes

Blacking’s (1973) ideas of music as humanly organized sounds, through childhood experiences and flow (Csikszentmihalyi 2008) are phenomenal. People first have multisensory musical experiences prenatally (Marjanen 2009), and this can be used to formulate sound education (Cslovjecsek 2000a, 2000b; Marjanen 2015, 2016c, 2021) to carry through to transversal learning, sound-based pedagogies and professional development (Ludke and Weinmann 2012; Marjanen 2012c, 2016a, 2016b; Marjanen and Cslovjecsek 2017).

Prenatal development is strongly affected by sounds and silences (viz., sounds of the mother’s body, the uterus, external sounds), to facilitate facing the postnatal world. Wordless information is transmitted prenatally, via tactile and sensory channels, and hearing (Chamberlain 2003; Marjanen 2009.) For human learning, prenatal experiences are phenomenal. Rhythmic coordination and positive emotional development are connected (Zentner and Eerola 2010). In the twelve senses of the fetus-model, multisensory experiences are described in: 1) Touch; 2) thermal sensing; 3) pain sensing; 4) hearing, starting at fourteen weeks’ gestation; 5) balance, gravitation, and orienting in space; 6) the chemosensors of smell, in close connection with; 7) taste; 8) mouthing; 9) sucking and licking; 10) vision; 11) telepathic sensing with connections to clairvoyance; and 12) transcendent sensing (Chamberlain 2003; Marjanen 2009).

Multisensory processes are shown as imprints in the brain and are in control of movement; coordination; memorizing; interpreting sensory input; and strengthening creativity, imagination, and rational thought (Thompson 2009). The limbic system connects body and mind, explaining emotions, the body, and cognition as physiologically inseparable features (Damasio [1994] 2001; Hannaford [1994] 2004). It also connects the auditory and tactile senses (Damasio [1994] 2001; Parncutt 2009; Tomatis [1963] 1997; Whitwell 1999). Transversal learning processes connect with the limbic system of the brain (Hannaford [1994] 2004; see Table 1) and support the recreation of music from the surface-level integration towards deep level musical synte-gration (Russell-Bowie 2012).

Table 1: Transversal Learning in the Limbic System of the Brain

Part of the Brain	Process it Controls
Thalamus	Incoming feelings, emotion and memory
Hypothalamus	Control of pituitary, body temperatures, appetite, and thirst
Amygdala	Cognitive processes and feelings, bodily states and gesture language
Hippocampus	Incoming feelings, short-term memory, and latter permanent long-term memory at all parts of the brain
Basal Ganglia	Connections and impulses between the cerebellum and the frontals. Movement and muscle memory-based functions.

Source: Hannaford 2004

Multisensory experiences interact with natural instincts. Loss of this connection makes people lose their ability to listen to themselves and orientate to their location and task in the world. This connection can be strengthened with living musical experiences. Huutilainen (2004) and Marjanen (2009) showed that prenatal musical experiences are holistic, affecting physical growth while the internal development of senses and multisensory processes clearly affects babies' postnatal interactive behavior. The emotional bond between mothers and babies strengthens with music (Izard 1977, 1991; Juslin 2001, 2005; Krumhansl 1997; Marjanen 2009; Peretz 2001). Hallam (1996) connected Multiple Intelligences Theory (MIT) (Gardner 1983, 2011) deriving from music, supporting Hannaford's ([1994] 2004) ideas.

The core component of musicality shares a brain region with language processing (Honing et al. 2015), possibly explaining the human, sophisticated way of using sounds. Despite disagreement over what qualifies as music, musicality as a natural, spontaneous set of traits with a biological and cognitive basis, and music as a social and cultural structure connected with musicality enjoys general acceptance (Honing et al. 2015).

The Comprehension of Knowledge

Arts-based experiences enhance cultural exchange in a human society. In this respect, arts are tacit knowledge (Polanyi [1966] 1983). Merely sensory-based or bodily knowledge, as implicit knowledge cannot be entirely put in words (Schindler 2015). Music connects the past, present, and future of all cultures (Chatelain and Marjanen 2018; Marjanen 2016a). Competent integrative knowledge includes experience, verbal meanings, systematic inquiry, critical reflection, ontology, epistemology, methodology, and transformation likewise tacit knowledge (being similar and yet distinct from transversal learning). Competent integrative knowledge (Ketovuori 2007) through arts, science, and ethics creates special value for the humanities. Imaginative artistic play fosters science mastery due to the significance of experience for understanding, and the appreciation of ethics and imitation. The arts, play, and imagination enhance people's abilities to consider value-oriented questions (Ketovuori 2007; see Figure 3).

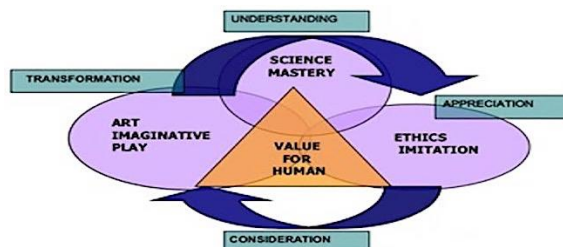


Figure 3: Competent Integrative Knowledge

Source: Ketovuori 2007

The value of arts education is beauty for beauty's sake, self-esteem, personality, creativity, and comprehension of purpose and meaning. Natural processes of musical learning and language acquisition are intrinsically connected, and when music speaks philosophically within a person, we can conclude that music affects values and learning (Nussbaum 2012). Music-making is being connected with self-making and making meaning (Page 2019; St. John 2006). The embodiment in music learning is essential (Juntunen 2004; Vass 2018), connecting automatically as biological responses in the behavior and the mind (Goleman [1995] 1997).

Tacit knowledge explains the relationship between knowledge and skills within the theory of multiple intelligences (Anttila 2008; Gardner 1983; Kurkela 1993; Pullinen 2003; Pöyhönen 2011). Educators need to acknowledge knowledge openly, with multiple senses, as an important resource for phenomena-based education. Learners absorb multiple types of information, such as physical, intuitive, cultural, technical, and skill-based; connecting skill and knowhow when learning (see Figure 4; Damasio [1994] 2001). These knowledge recreation processes include theoretical and factual knowledge; cognitive, intuitive, creative, practical, and methodical skills. Qualifications through levels of responsibility and independence interact with the relationship between skill and knowhow and the relationship between skill, theory, and ideology. These include ways of thinking, tools for working, ways of working, and ways of living in the world, as described in the ATC21S program (e.g., Binkley et al. 2012; European Commission n.d., 2008).

Detailed information on the facets of knowledge helps to dialogically create learning incidents, at a certain moment. Musical phenomena, tacit knowledge, cognitive information, and information in time are at the core of learning, connecting with deep learning processes (Hannaford 2004), and the added value of music, supported by intrinsic motivation (Ryan and Deci 2000), an understanding of man (Pöyhönen 2011), flow-experiences (Csikszentmihalyi 2008) and the deep connection between music and learning (Nussbaum 2012). Teachers' subject knowledge includes situational awareness, didactic skills, common sense, asset information, and theoretical and pedagogical comprehension (Anttila 2011, 2017; Varto 2000) as well as learners' multiple intelligences (Gardner 1983, 2011; Pöyhönen 2011).

Cultures and values markedly influence ways of knowing, which transform over time. General attitudes impact our learning comprehension, philosophies, and values. Listening skills connect to Ryan and Deci's (2000) understanding of the self and intrinsic motivation. Musicians, music teachers, and music educators should understand these holistic connections (Huotilainen 2017; Linnavalli et al. 2018; Overy and Molnar-Szakacs 2009; Thompson 2009; Virtala et al. 2017), coinciding with Bronfenbrenner's (1995) idea of human development within the infrastructures and spaces of society, in time, and because of music in time (Pöyhönen 2011). Tacit Knowledge was not included in behavioristic thinking before the constructivist comprehension (Bruner 1996, 1990; Dewey [1934] 2005; Pöyhönen 2011; Vygotsky [1930] 1978). It is, according to Pöyhönen (2011), observed in the theory of multiple intelligences, MIT (Gardner 1983), and explains the relationship between knowledge and skills (Anttila, 2008; Kurkela, 1993; Pullinen, 2003; Pöyhönen, 2011). With phenomena-based curricular models, the comprehension of knowledge, transversal learning, and music-integrated teaching interact (European Commission 2008). In Figure 4, the comprehension of knowledge is found at the core of learning through experiences, because music helps understand how to listen and feel, connecting with tacit information: in music education active bodily, cognitive, artistic, and emotional processing is deemed phenomenal. This also concerns research thinking.

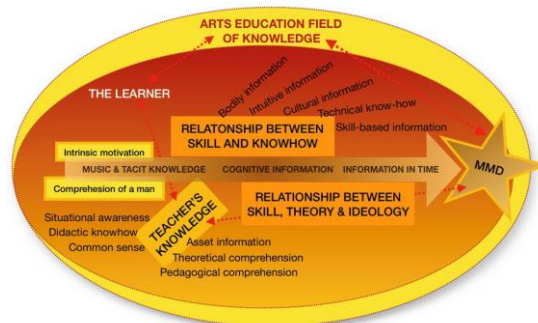


Figure 4: Arts, Comprehension of Knowledge, and Phenomena-Based Education toward MMD

Source: Marjanen

Musical-Linguistic Elements and Communication

Musical elements define languages and musical cultures (Dissanayake 2000a). A child's social behavior builds on sound-grounded interaction (Dissanayake 2000a, 2000b; Marjanen 2009). Music and language are constructed of shared elements: dynamics, pitches, tones, structures, rhythms, durations, tempos, and harmonies. Spoken language may form harmonies only in speech-chords when several speakers speak collaboratively. In addition to this traditional model, also elements of distance and direction may be understood as musical elements (Patel 2008), discussing with tacit knowledge (Polanyi [1966] 1983) and the ontology and epistemology of the musical phenomenon (Nussbaum 2012). Forms of tacit knowledge are part of an exchange between generations and cultures (Bronfenbrenner 1979, 1995), with a musical-linguistic fingerprint and a tonal center originating at the core of prenatal and early postnatal sound experiences as people begin to interpret, organize, and understand the world (Krumhansl 1990; Patel 2008; Rosch 1973, 1975). Early emotional-social interactions make no distinction between sounding music and language (Brown 2000; Mithen 2005). Music is an emotional, acoustic mode, and language is a meaningful, linguistic mode (Brown 2000), with the strongest correlation between musical syntax and linguistic phonology (Lerdahl 2013). Early awareness in physical-emotional-chemical dialogue (Chamberlain 2003; Hannaford 2004) continues later with vocalizations.

Speech acquisition is grounded on musical-linguistic elements, providing an analytical tool in scientific research on human interaction and development (Marjanen 2009; Marjanen and Cslovjecssek 2017). This was benefitted in collecting information on 2- to 8-year-old children from different backgrounds: their choices of languages, sounds, and music (Marjanen 2014b, 2016b; Marjanen and Cslovjecssek 2017; Marjanen, Tu, and Trevino 2018; Tu 2016, 2017). The prosody of speech as musical features in spoken language is important for the mother tongue acquisition process. Musical integration (Ludke and Weinmann 2012; Patel 2008) and syntegration models (Russell-Bowie 2012) help further explore music, language, and other arts and the pedagogical inclusion of the arts in education.

A person can express moods, emotional states, and thoughts musically (Juslin 2005; Malloch and Trevarthen 2012; Overy and Molnar-Szakacs 2009; Paynter and Aston 1970). Theories on music and emotions describe emotions in musical-vocal expression (Izard 1977, 1991; Juslin 2001, 2005; Krumhansl 1997; Peretz 2001).

MMD-Grounded Music Education

The whole MMD framework connects with holistic wellbeing, being emphasized in Finnish music education. In an optimal joy experience, flow, skill, and task result in a flow of deep

learning and high satisfaction (Csikszentmihalyi 2008). Flow profoundly captures and motivates an individual. Creativity connects tacit knowledge and flow (Bocconi, Kampylis and Punie 2012; Csikszentmihalyi [1990] 2008; Dillon 2006; Kaufman and Beghetto 2009; Kurkela 1993; Cruywagen 2018; Polanyi [1966] 1983). In creating a core for the human arts, flow is powerful (Koivunen 1997; Pöyhönen 2011). Experiences of silence, speechless or wordless information, and body language create intercultural exchange (Chatelain and Marjanen 2018). Tacit knowledge affords the ability to read between the lines (Koivunen 1997).

Music, as a natural vehicle for emotional transmission (DeNora 2000), supports the intensification and acknowledging of values, constructive attitudes, musical works, and expressiveness as meanings for life and reasons for music education (Cruywagen 2018; Marjanen and Lage-Gómez 2015). Personal and social-sonic interactions with people’s circumstances and needs are important (Elliott and Silverman 2014), and musical atmosphere helps to act through gestures, concepts, and emotions (Chatelain and Giglio 2018). Musical significance in experience, commitment to learning, a positive environment, and the identification of musical elements afford learners satisfaction (Huotilainen 2017).

Artistic experiences inspire thoughtfulness, self-awareness, and meaningful experiences (Csikszentmihalyi 2008; Gardner 1983, 2011; Kaufman and Beghetto 2009), and values in pedagogies and societal well-being (Dillon 2006). Flow experiences work alongside inner motivation (Csikszentmihalyi 2008; Ryan and Deci 2000). Social and emotional intelligences (Gardner 2011, 1983) with esthetic features support phenomena-based learning in creative classrooms (Bocconi, Kampylis and Punie 2012). Music learning goals are clearly tied to learners’ motivation and talent: high set targets for music have their own important defining. The needs of music education on both various educational and music-grounded levels merit further attention, but this is beyond our present scope.

Motivation for Music Education

Being musically moved manifests emotionally in the body (Kypourgous 2012), in intrinsic motivation (Ryan and Deci 2000), and expectation (Nussbaum 2012), beginning with nature’s speech and in primitive ways (Perlovsky 2010). Due to better listening skills and presence abilities, it supports individual, social, cognitive, emotional, mental, spiritual, and physical development and deep-level holistic understanding in many ways (Ludke and Weinmann 2012; Marjanen 2012c). When professional music teachers worked with children, their language skills were clearly enhanced (Linnavalli et al. 2018). Finnish early childhood music educators found musical skills for well-being, holistic development, and children’s individual personal qualities as a motivation for their work (Marjanen 2016a), as described in Figure 5 below.

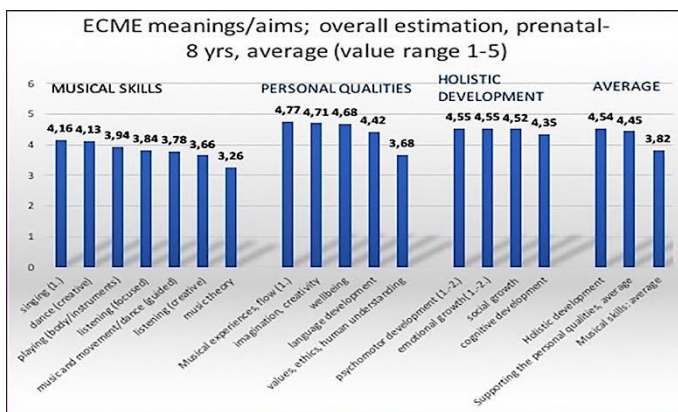


Figure 5: Finnish Early Childhood Music Educators’ Motivation for their Work
 Source: Marjanen 2016

Teachers appeared more aware of and present in the pupils' learning processes due to a music-integrated course (Marjanen and Cslovjecssek 2014). Virtual listening interaction with other students, to perform arts-based, creative tools, seemed to motivate, capture and help prospective early childhood teachers to learn about equality, diversity, and inclusion (Marjanen 2021). A positive circle of trust, supported by music, creates reciprocal interaction: listening one's expressions and interpretations and connecting with positive understanding and attitude (Marjanen 2015).

The European Qualifications Framework (EQF) and Curricula

MMD connects with the EQF (European Commission 2008), supported by the approaches for comprehension (ways of knowing). Capturing educational levels is supported by the constructivist learning approach (see Vygotsky [1930] 1978). The integration of the arts should cover higher education and reflect a philosophy of life-long learning. The Finnish national curricula starting from early childhood with a phenomena-based approach and learner-centered foci (Finnish National Agency for Education n.d., 2016a, 2016b, 2016c, 2017, 2018, 2019; Opetushallitus 2017a, 2017b) create benchmarks for soft-oriented degree programs. Due to targeting learning with individuals or societal groups, the need to comprehend the arts is obvious. The EQF defines education quality at various levels (European Commission 2008). At the bachelor's (6) and master's (7) levels, the EQF defines learning outcomes relevant to the present article (see Table 2).

Table 2: EQF Learning Outcomes at Levels 6 and 7

	Learning Outcomes: Level 6	Learning Outcomes: Level 7
<p>Knowledge (Music as art, skill and experience; pedagogues, science and way of knowing)</p> <p>Individuals being deeply touched by musical speech.</p>	<p>Advanced knowledge of a field of work or study, involving critical understanding of theories and principles</p>	<p>Highly specialized knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields</p>
<p>Skills (Music as art, skill and experience)</p> <p>Delicate, accurate learning processes for skills.</p>	<p>Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problem in a specialized field of work or study</p>	<p>Specialized problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields</p>
<p>[Professional] competence (Music as art, skill and experience, science and way of knowing, pedagogues and didactical models, growth and development of professional identity)</p> <p>Individual abilities to reflect, recognize, share, situate and sense.</p>	<p>Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups</p>	<p>Manage and transform work or study contexts that are complex, unpredictable, and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams</p>

Source: *European Qualifications Framework for Lifelong Learning 2008*

Synthesis exists between musical learning and the structuring of knowledge, skills, and competence for professional expertise, connected to the ability of music to speak to us and support creative thinking. This moves learners toward the formulation of knowledge, innovation, and integration and motivates toward responsibility, and sharing and developing strategies.

Pedagogical Approaches to Music Education

For pedagogical inspiration, a non-musical model Laurea Learning by Developing (Raij 2007) is given as an example to musically deepen. It is founded on active collaboration with working life partners. In the model, active cultural interaction creates new learning (Marjanen and Chatelain 2016; Raij 2007, 2014). Intensifying this with music pedagogies (Elliott 1995; Regelski 2016) would enable new approaches, following Reimer's (1989) idea of aesthetics in music. Inclusive education and informal learning define early childhood (Dewey 1956; [1934] 2005; [1983] 2008). Innovative learning approaches can only begin from an open dialogue (Freire 2005).

Musical elements serve as a bridge for languages and other arts, explaining the logic of music integration (Marjanen 2016c). This means a strong focus on the musical elements and activities, with an emotional cue with direction (Ludke and Weinmann 2012; Marjanen 2012c). The application of musical counter pairs (Marjanen 2012c) serves not only children but any learner. Music education pedagogies are complex, being learning stage rather than age oriented, or then both; in constructivist learning, the background defines the interaction between learner(s) and teacher, and thus without previous musical background the learning stage for a child and an adult may be the same. Setting goals for music learning towards holistic learning and development is important. Connecting with our innate multiple senses, and natural instincts, is supported by a dialogue between music(al) elements, and learning through music, and e.g., socioemotional, psychomotor, cognitive, and esthetic experience and learning with developmental grounds and constructivist approaches (Marjanen 2012c)

Cslovjecsek (2002b) describes the need for music to serve a role in an educational process, due to its nonverbal, action-oriented and instructional communication. Music connects with imagination and memory (Marjanen and Cslovjecsek 2014), multimedia, and various choices of pedagogical solutions or trends, including virtual, reverse, or remote learning (Marjanen, Gruber, and Chatelain 2020). Choosing the proper music pedagogical application benefits education. Explaining and defining these choices, deriving from music as naturally inherent in life, fosters actual pedagogical development (Marjanen, Cslovjecsek, and Gruber n.d). Pedagogical development, and the needs of curricular work, requires a genuine interest to identify the needs of various scientific disciplines in inclusive communities. Flexibility and business-oriented quick reactions may connect with musical innovations and connect with creativity, but in music, the content with individuals and value-orientation should be essential.

Results: Multisensory Musical Design

The MMD Dialogical Basic Concepts: Faces, Spaces, and Timelines

Laine (2015), describes phenomenological philosophy as a complex dialog toward a holistic human-oriented comprehension, connecting with the intertwined components of MMD: faces, spaces, and timelines. The aim is to find support for human societies from a deepened understanding of soft, ethical values, strengthened through the arts (Pöyhönen 2011). Defining these core phenomena helps find ways to include arts in education. The theoretical evidence presented supports defining core structures with a component of expectation in music to be further explored within MMD (see Goals section for questions posed). Sound experiences create the foundations for faces, spaces and timelines.

Faces: Musical Encounters as Holistic Experiences

Musical communication refers to actors with their voices, with a minimum requirement of musical sounds and a listener (Kankkunen 2018). Musical expression conveys emotions at a level word alone cannot (Brown 2000; Odent 2007). A fetus can sense the mother's emotions acutely, through sound resonance and the body (Chamberlain 1994).

Sounds deliver messages as sound waves via the ear but also as physical-bodily-tactile experiences (Tomatis [1963] 1997). Learning as a social-emotional process starts from the ability to recognize faces with tones of sounds, and communicate vocally, musically, and holistically. Music strengthens self-confidence and personal identity, enabling us to understand reciprocal encounters. Individual learning pathways grow stronger by facing one another—being seen, heard, touched, and recognized. The arts support this feeling of appreciation to motivate life, beginning from song and speech, grounded in musical-linguistic elements, such as pitch, tone, and rhythm.

Musical activities connect faces with simultaneous combinations of musical elements. The individual human voice possesses expressive, mimetic versatility and cultivated dimensions in songs (Cross and Morley 2008; Darwin 1998; Dissanayake 2009; and Donald 2001), imitated by hand movements in instrumental music and dance, for the needs of communication (Trevarthen 2012). Shared interpersonal or intercultural processes support inclusion. Meaning making is possible by perceiving and responding to holistic sound experiences (Waldenfels 2005, 2017). Bodily sounds and silences act as a condition for tacit knowledge, even if deaf. We need social networks to learn (Bandura 1977; Wenger 1998). Sounds in speech and songs connect people (Dissanayake 2000a). Musical communication is determined via a) musical performance, b) the people creating music, and c) the situation (Kankkunen 2018).

To answer question 1, starting prenatally, music and sound experiences form and strengthen our identity, help acknowledge our inner motivation with meanings of musical expectation, cultural comprehension and generational inheritance, and help express, understand science and pedagogy, reflect, situate, connect, and be present, benefitting all levels of education, including higher education due to the deep level emotional speech of music to a man. It connects with knowledge, skill and professional competence, because of the bodily, emotional and cognitive sub-processes holistically in the limbic system of the brain, always included in musical functions, thus supporting our abilities towards soft-oriented, ethical, human values. Musical sounds are expressed in our bodies, minds, and cognition.

Spaces: Learning Surrounded by Sounds

Children's experiences of the domestic-cultural space with familiar sounds support them towards a wider sociocultural space (Bronfenbrenner 1995). The comprehension of learning environments as spaces to exchange information enhances the comprehension of tacit information. Individual and social learning spaces are supported by multisensory speech in musical or sound-regulated environments. Bridges between different cultures or generations create learning spaces (Marjanen 2015, 2016a). Spaces, both concrete and virtual, support making sense of experiences connected with MMD faces.

Sound environments influence our musical-linguistic identity within cultural-emotional spaces. In music, the dimensions between sounds, frequency, and faces (instrumental, natural, or mechanical) define and identify spaces. Rhythms included or excluded in the sound environment affect the emotional feeling and atmosphere as spaces, being essential for the emotions in the learning process. Familiar or strange tones affect our state of mind. We regulate our sounds using tones of voices and cultural features. Chords, open or closed, with dissonances or consonances and the dimensions between pitches, convey an experience of the space. A multisensory sounding atmosphere regulates learners in a space and can affect long-term

memory. Instead of art, the individual will be at the core (Lierse 2017; Shaeffer 1977). This reverts to the experience of musical elements: pitch, tone, harmonies, rhythm, distances, and directions, to nurture imagination.

To answer question 2, prenatal exposure to sound environments prepares the ground for mother tongue acquisition processes, and abilities to regulate the sounding environment connect with wellbeing. Because of the musical living space experienced, the comprehension of knowledge will be widened, supporting one's ability to remember, and recognize multiple cultural and generational spaces. Remembering inculcates the principles of higher education. Within the MMD framework, learning spaces for skills and knowledge at the individual and social levels and intercultural spaces, towards competence, foster reflection, recognition, localization and sensing, in a way that is only possible in music: we also learn listen and feel the silent space.

Timelines: Learning Processes and Music in Time

Timelines, as a parallel concept to space, can be observed in musical elements such as rhythm, tempo, and duration and also as developmental lines or societal-cultural timelines (e.g., Bronfenbrenner 1995). Time is inherent in our lives individually, socially, and historically. The experience of time is at the core of musical pieces, enabling us to live in time with sounding or silent experiences connected to imagination and expectation. Repetitions and variations of rhythm, tempo, structure, or other musical elements affect our experience of time; this is essentially the ability of music to capture us in flow, with time and place forgotten (Csikszentmihalyi 2008), supporting concentration.

The timelines grounded in music learning create individual flexibility. Music experiences connect individuals and groups in mutual learning processes, with living individual sound experiences, in time. Vygotsky's ([1930] 1978) theory of socio-constructivist learning explicates the structures regulated by musical sounds (Krumhansl 1990; Patel 2008; Rosch 1973, 1975). By regulating timelines for dialogical, individual, and social learning processes, educators will reach faces better. Musical experiences support the synchronization of individuals in time (Marjanen 2009). Educators need to understand and synchronize timelines to best serve their students, musically.

To answer question 3, music lives in time, and we learn competences and skills as constructivist processes in time, with processes for ways of knowing, beginning prenatally. Supported by the evolutionary, cognitive and bodily emotions, our skills to process and regulate time needed for learning will be more advanced, connecting individual and collective needs, complemented with the deepened abilities towards faces and spaces. This reflects in curricula contents and the temporal pedagogical plans created, with temporal comprehension transformed for pedagogies. Abilities of being present and discreet listening skills help the teacher – student dialogical performances with detailed multisensory abilities, better remain in the long-term memory due to the musical processes supported by the limbic system of the brain.

MMD Elements in Brief

Figure 6 presents MMD in faces, spaces, and timelines. Note the meaning of expectation (Nussbaum 2012) created in music and connected in learning. Expectation always seeks responses, and musically, expectation can be created in natural ways, but also technically.

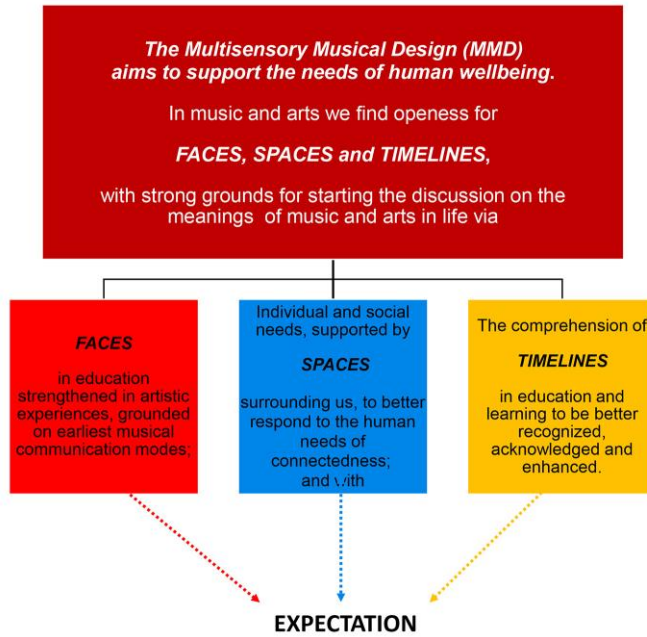


Figure 6: MMD Elements in Brief
 Source: Marjanen

MMD Socially and Individually

Hormones circulate through the body carrying messages within 30 days of conception (Chamberlain 1995) as the beginning of internal interaction, to musically define human growth. An organized and intelligent fetal network of bidirectional, chemical, physical, and mental communication begins, with phases of wakefulness and sleep (Chamberlain 1995). This is internal integration: our inner emotional, bodily, and cognitive processes with the basis of the multisensory fetal processes to connect in bodily and brain development. It is an integration of strands of intertwined learning sub-processes. It creates the internal physical, emotional, cognitive interaction needed for individual development processes (see Figure 7). Sharing musical sounds enhances this process (Marjanen 2009).

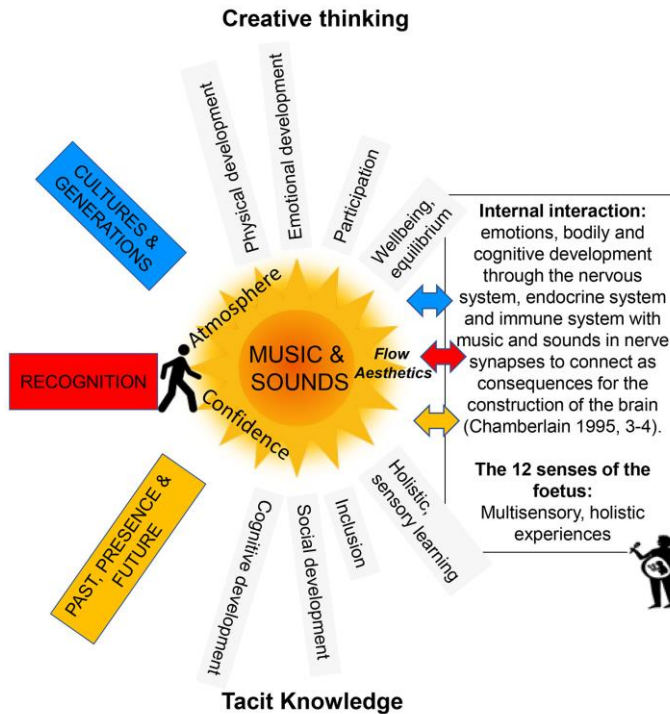


Figure 7: The MMD Holistic Connections from the Individual, Inner Perspectives
Source: Marjanen

Arts experiences, connecting individually and socially through emotion, motion, and cognition, are complicated processes in brain and body, strengthened by shared experiences (Honing et al. 2015; Huotilainen 2004; Overy and Molnar-Szakacs 2009; Peretz 2001, Putkinen et al. 2013; Putkinen et al. 2015). Additionally, these support the comprehension of external integration. Humans with multisensory and socioemotional qualities create the core for MMD, serving human-oriented education providers and families. Recognition (faces), cultures and generations (spaces) and past, presence, and future (timelines) are regulated by dialogical process, and support positive atmosphere and individuals' feeling of confidence with esthetic experiences, flow, and tacit knowledge, fostering creative thinking and holistic development with inclusion and participation.

Sound-based dialogues are a foundation for music and language (Dissanayake 2000a; Thompson 2009), connecting music and life. Music joins people emotionally despite age or cultural background from the imprints of prenatal development. Individual music integration can be adapted to a social-cultural framework due to the ability of music to support communication, presence, and trust. In music, we remember, even collectively – due to the images awakened. Odent (2008) described the transmission of emotions in multisensory arts experiences via sounds, visual signals, body movements, and rhythms, digestion, perfumes, and eroticism. They strengthen memories. We can adopt the meaning of musical elements in languages and other arts. This multiplies the power of music even further in the multiple senses as faced and experienced in holistic arts phenomena.

We end up with a global benefit from a seed of an individual life, defining a space for music and arts to speak and connect people (see Figure 8). Etienne Wenger (1998) explains the social nature of learning beautifully: learning supported by communities (as belonging), by doing (as practices), by experiences (as meanings), and by becoming (as identities). Music as

shared experiences, starting at the prenatal stage, supports the individual abilities to connect, communicate and learn to understand each other (Marjanen 2009). Music delivers emotions, being essential to the shared processes of learning.

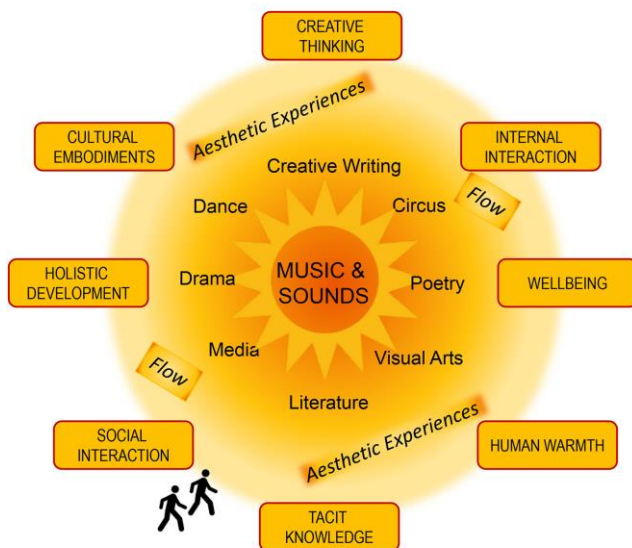


Figure 8: The Main MMD Societal Connections of Musical Sounds for Life from the Social Dialogical Perspectives

Source: Marjanen

An image of the sun (Wood 1982⁷) is located at the center of the MMD figures. Music is a sound-based holistic phenomenon intertwined around individuals and groups, holistically surrounding us. We observe sound-integration to construct interaction and recreate culture in relation to tacit knowledge. Children connect with their communities through musical sounds, even before birth (Marjanen 2009). Music as art is needed as a framework of live arts, and as a motivation for music education and musical education: education through music.

MMD as a Meaning for Human Comprehension

Using music for tacit knowledge serves the dialogical needs of human civilization, culture, and well-being. The historical era with personal background and history influence individuals and communities through general attitudes and atmosphere. Tacit knowledge connects cultural groups and generations. This highlights the need to strengthen music and the arts in education. See Figure 9 for a modified design combining two previous designs (see Figures 7 and 8) in response to the research question (see the Goals section): MMD main elements create a core for the music-grounded benefits when included in education—aims, performances, models, methods, and pedagogies—in curricula and courses.

⁷ “Music is like the sun, with the sun’s rays to touch all areas of the child’s development” (Wood 1982). In her book, Donna Wood describes through detailed practical examples and instructions, how and why music education connects with the child’s holistic learning, and how to gain support for the child’s social, emotional, cognitive and aesthetic learning processes, intertwined with wellbeing and equilibrium experiences.

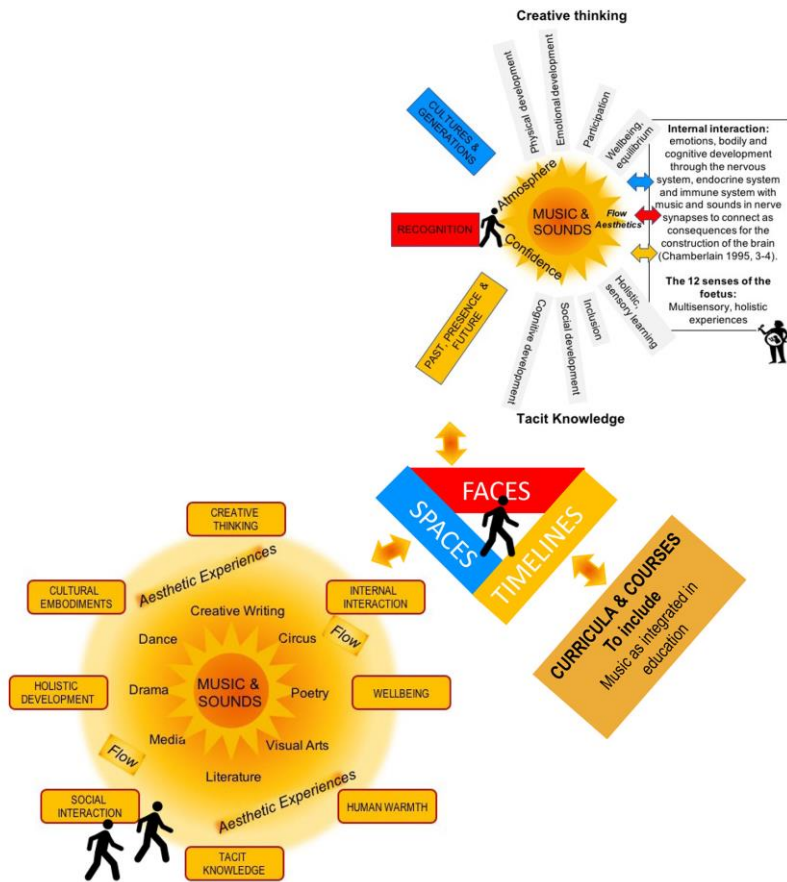


Figure 9: The Multisensory Musical Design (MMD) Theoretical Model to Serve the Development of Education through Music
 Source: Marjanen

Within MMD, learning occurs in spaces to support the cultural and generational mediation processes (blue); in timelines via experience of past, present, and future (yellow); and with recognition of faces with individual sounds of oneself and others (red). Learning interacts with music to benefit humanity. Musical elements connect with prenatal sound experiences with expectation to foster learning due to the tonal center created and musical-linguistic fingerprint experienced. Sound experiences with music and arts in learning interact and will be processed within the body, the brain, mind and emotions, and the cognitive-holistic awareness. Because of connecting musical elements with the MMD main elements, musical communication and atmosphere will be strengthened, and learning through tones of sounds and silences, imagination, sense of trust, motivation, self-confidence, wellbeing, social networks, experience and knowledge, recognition of abilities, synchronization, listening and expressing and domestic-cultural spaces will be fostered: music simply strengthens us (see Figure 10).

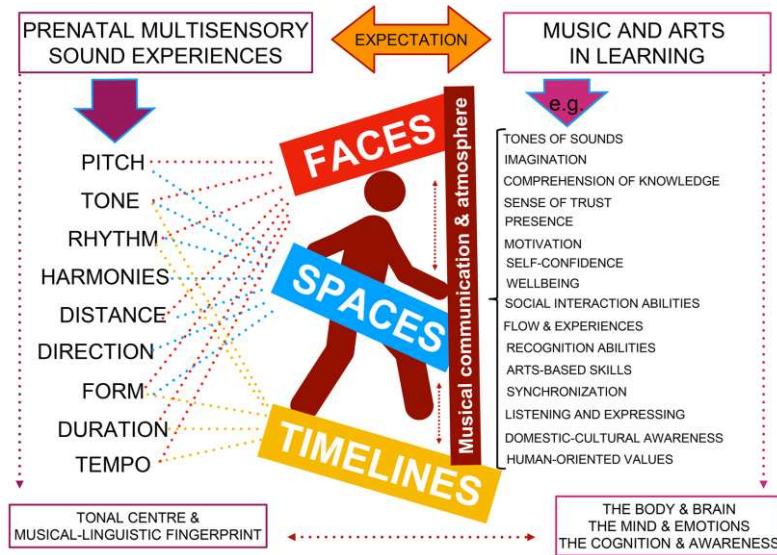


Figure 10: Multisensory Musical Design and Learning Processes to Support Education
 Source: Marjanen, Gruber, and Chatelain 2020

From the dimensions of music, we can develop new pedagogical models. Artistic experiences have potential in education, with imagination, creativity, and critical thinking, to meet the needs of EQF 6–7 (European Commission 2008) for the comprehension of knowledge, emotional, social, cognitive and bodily skills, and professional competence, due to more profound awareness as a means to reach the goals set.

At the levels of faces, spaces, and timelines, connecting with the EQF (European Commission 2008), emotional speech, detailed skill-based active processes, and the abilities to reflect, recognize, situate, and sense ourselves and our environments are strengthened in arts. It will support gaining a phenomenal comprehension of education. The experience of education will thus be deeper, with better reflections in our culture, society, and the global world: the soft human “general goodness” through beauty will foster identities through education, starting from early childhood.

Discussion

A collision of paradigms may occur when introducing MMD to a traditional non-arts program, possibly leading to complex processes with new realizations and innovations. A collection of theories with detailed examples to explain MMD demonstrates the benefit of music as philosophy and pedagogy for higher education. Viewing the world through a musical lens and seeing the MMD core phenomena motivated this paper. Music is needed to cross boundaries and connect scientific subjects in education to support society with an appreciation of human nature, as a value in itself and a value for decision-making. Musical and arts-related experiences help reach this atmosphere (see Figure 11).

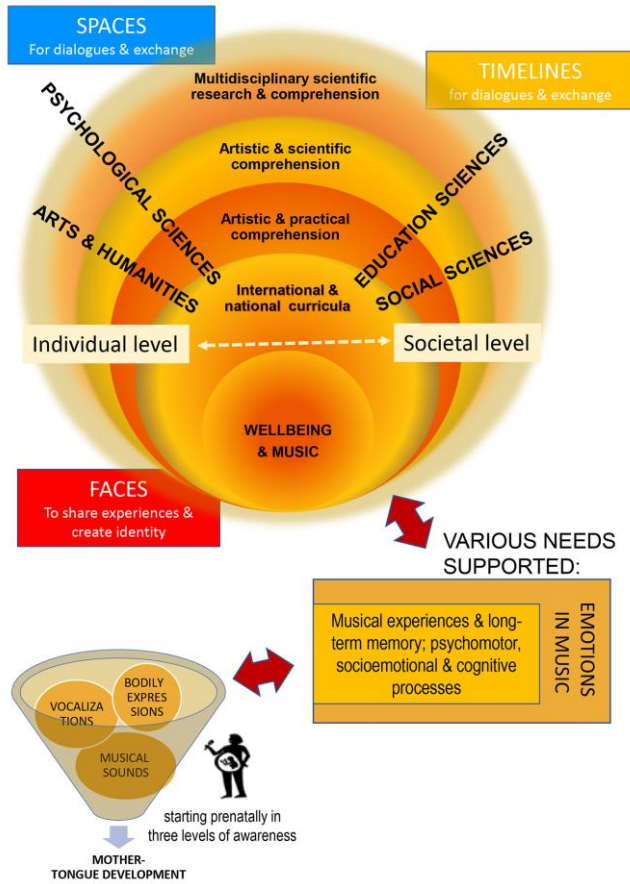


Figure 11: Musical Comprehension as an MMD Core for Developing Human Societies with Soft, Ethical Values
 Source: Marjanen, Gruber and Chatelain 2020

Potential to influence children is at its peak during prenatal development (Chamberlain 1994). Music supports mother-tongue development in 1) vocalization sounds, 2) musical sounds, and 3) physical-bodily expression, especially because of emotions in music (Marjanen 2009). Musical and multisensory experiences with long-term memory, psychomotor, socioemotional, and cognitive processes, can be shown prenatally at three levels of awareness, as described by Chamberlain (1994): chemically, physically, and mentally. This realization affords vast scope for scientific, artistic, and practical dialog and development in education. Long-term philosophical investment in MMD will more than recuperate the resources invested in the development of education with enhanced abilities to understand faces, spaces, and timelines as motivation for learning and life well-being. MMD design with the core elements used for the development of education may have various effects on culture and civilization, to improve the flow of tacit knowledge, and encourage a wider comprehension of knowledge toward EQF 6–7:

1. Defining music as an innate capacity for well-being, and sensitive, social, and emotional qualities in people (faces);
2. Establishing flow and meaningful experiences for life (spaces); and
3. Situating the importance of the arts in Western societies and in education (timelines).

Multisensory learning is grounded in individual comprehensions and interpretations (Kiviniemi 2010). MMD exists in music as attitudes within individuals and societies, to value our individual, living arts relationships. This personal art experience connects with research methods and with theoretical evidence. It supports a general development towards open discussion for the educational targets set, reflected in Open Science (Bueno de la Fuente n.d.), and fosters discussions of various approaches in subjects like medicine, brain research, educational research, psychology, music, and the humanities to understand transversal learning processes (see Figure 12).

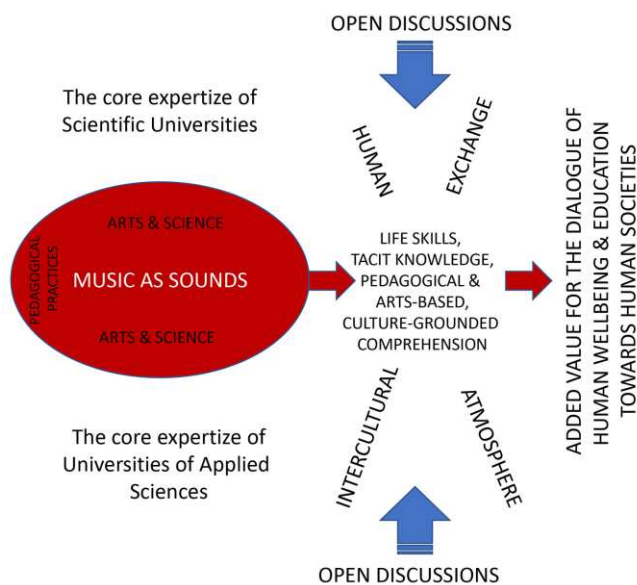


Figure 12: Open Discussions Starting from Music as Sounds to Support Societal Well-being via Education
Source: Marjanen, Gruber and Chatelain 2020

The current globalization with inter- and transcultural movement necessitates learning about and understanding various cultures. Music helps comprehend human meaning, with expectation and arousal, with values for human societies, and for the general good of humanity. All three: science, the arts, and educational pedagogies, demand recognition in education. As a condition for the arts to serve education, it is phenomenal to understand that arts only function through active and real, alive learning experiences, when offered fruitful circumstances. This was described in MMDesign (faces, spaces and timelines).

Access to Music is a Human Right

The European Agenda for Music defines five Music Rights for all children, adults, and musical artists, including expression, musical languages and skills, musical involvement, artistry communication and facilities, and fair recognition and remuneration for the musicians' work (European Music Council n.d.). Music should convey evolutionary utility with gratuitous esthetic pleasure to foster imagination and creative thinking (Nettl 2000; Hargreaves, Miell and MacDonald 2012; Perlovsky 2010). We should musically support the sensory-based experience awakened in arts with significance for human societies, shown in higher education. Only: we cannot grow to understand music without experiencing music, transmitting expectation, and arousal. Special meanings help find the core of music as an innate human evolutionary ideal (Nussbaum 2012).

The all-around aims of MMD define the comprehension of musically connected, natural learning dialogues and well-being. This requires observations of the earliest, holistic, communicative processes with even biological and evolutionary grounds. Music education is also highlighted in The Finnish Vision 2030 for Music Education as a social capacity (Auramo et al. 2020). The holistic power of music with needs for education providers to acknowledge were defined, see Figure 13.



Figure 13: Vision 2030 for Finnish Music Education
 Source: Auramo et al. 2020

MMD as a model is not a readymade pedagogy: superficial solutions do not connect with music, lacking connection to the other layers. In MMD music is observed as essential in all education and pedagogy, and in any education layer towards high quality. It always comes back to music: learning in music, musically, about music, musical skills, and with the support of musically based pedagogical innovations. In learning to breathe music and communicate musically emotions transmitted through music are essential in making music alive and making people alive. Multisensory musical experiences help people share, trust, and understand. Music through sensory experiences interacts with abilities for connecting musical activities and life to capture all kinds of knowledge, highlighting tacit knowledge (Polanyi [1966] 1983) and flow (Csikszentmihalyi 2008).

Among the Dagara people, every child is seen as embodying an irreplaceable contribution to the world, not just to their family and community. Each child must be honored as a visible means of ensuring the continuance of the very soul of the community, as well as a direct link to the ancestors. (Sobonfu Somé 1999)

We carry the seeds of music within us. The beauty of art and music is beauty for beauty’s sake, with purpose and meaning. Music may connect with intrinsic values in songwriting. Here, readers are referred to my composition “Good for Yourself.”⁸ The song was inspired by my

⁸ <https://www.youtube.com/watch?v=vhQRjiiQO-s>

grandfather's life lessons, to reflect the notion of music passing down ancient wisdom to new generations (Marjanen 2018). This is concise information with multiple layers and open visions to serve the holistic approaches to deep learning. Prenatal sound-based experiences and music as language connects in tacit knowledge with breathing societies, creative cultures and as responses to the ultimate, innate human yearning for beauty. Songs describe the condition for how music—or other arts—function: they remind us to breathe.

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