



EDUCATIONAL MANAGEMENT ASPECTS OF THE SOMATIC INTELLIGENCE

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Abstract

Somatic intelligence is a type of human intelligence that includes self-regulation, emotional awareness, and listening to the body. Analyzing the scientific literature, it becomes clear that there are few theoretical works and empirical studies of somatic intelligence in Lithuania, but this does not mean the absence of discourse. Recently, the concept of somatic intelligence has been actively explored in the foreign scientific field using concepts such as somatic awareness, body awareness or interoceptive awareness; creating different models that enable detailing and structuring the concept of somatic intelligence; when constructing assessment systems (questionnaires). The concept of somatic intelligence, from a theoretical point of view, is a new and rarely studied phenomenon that requires in-depth research on a global and (especially) Lithuanian scale. Analyzing the research field of somatic intelligence, it was found that somatic intelligence is of interest to many researchers in various aspects related to the topic of kinesthetics: concept development and modelling, evaluation, education and management processes.

The aim of the research – to reveal the features of kinesthetic and sensory cognitive processes as the somatic intelligence parts in the educational management. The method of empirical research of the work is qualitative, which is based on phenomenological methodology. The qualitative research method (instrument) is a semi-structured individual interview. For the qualitative research, questions were prepared based on the model of somatic intelligence.

The research results showed that, the somatic intelligence of primary school students in Klaipėda city formal education institutions is developed in a rather complex way. Methods and means of developing sensory intelligence include: creating a positive atmosphere, creating a sense of trust and security; the use of educational senses to create knowledge, cultural and environmental knowledge, training of critical thinking; involvement of students' and teacher's feelings, use of feelings for the development of critical thinking. Kinesthetic intelligence training methods include: training of fine and gross motor skills; methods and tools promoting discipline, methods and tools for overcoming stress and solving problems; physical involvement through role playing and other games. Research results related to other aspects of somatic intelligence (emotional and spiritual intelligence) will be presented in next article.

KEY WORDS: educational management, somatic intelligence, kinesthetic, emotional, spiritual, cognitive processes, inclusive education

JEL classification: D83, D91, I21, I31, M12

Introduction

In today's fast-changing world, humanity experiences a lot of stress, which negatively affects the quality of life. Therefore, there is an increasing number of interdisciplinary scientific research aimed at solving this problem. The awareness of the importance of developing somatic intelligence is focused on new competences, actions and ways of responding to the threats and opportunities of the external environment. Using body-centered psychology and kinesthetic learning, somatic intelligence training creates rapid, effective, and lasting change.

By developing somatic intelligence, it is possible to switch to a new way of education, which enables more effective implementation of the set goals (Blake, 2009), provides opportunities for new participation in the educational process. It is a practice to awaken to who we really are through the gift of self-embodiment – not what we mistake for our “body” as an “object,” but as the embodiment of our space here and now (Kaparo, 2012).

Non-verbal communication plays a crucial role in the communication and education processes. According to P. Kováčová, O. Drahotský (2022), non-verbal communication refers to the ways of communication without using words such as facial expressions, gestures, body language, proxemics (distance between communication partners) and others. It gives valuable

information to communication partners about what is going on under the surface, how the person is feeling, how the person agrees or disagrees with what was said. Greater engagement with experiential somatics could be a way for educators to develop new ways of pedagogy (and andragogy) that enable learners to achieve “special knowledge” (Bannon, 2010, p. 50).

The complexity of the phenomenon of somatic education describes the interrelationships of movement, emotions and sensations, which cause a sense of interaction that touches the spiritual sphere. In this way, the somatic experience is enriched. By combining cognition with many areas of somatic education, education itself becomes holistic, and the body becomes a multifaceted force that gives meaning to human experience.

The development and empowerment of somatic intelligence in the educational process contributes to the improvement of the students life quality, a deeper understanding of themselves and the surrounding environment, and an increase in awareness, mindfulness.

In addition, the greater use of somatic intelligence in the educational process will encourage students' motivation, which can be motivated by multiple experiences of certain cognitive phenomena through sensorics, the body, emotions, and the spiritual field.

Analyzing the research field of somatic intelligence, it was found that somatic intelligence is of interest to many

researchers in various aspects related to the topic of kinesthetics: concept development and modeling (Anderson, 2006; Hill, 2016; Barratt, 2013; de Silva, 2017; Rimmer-Piekarczyk, 2018; Rufo, 2023; El Wardi, 2023; Magalhães, 2023), evaluation (Anderson, 2006; Mehling et al., 2012; Freedman et al., 2022), education and management processes (Green, 1998; Crowdes, 2000; Clark, 2001; Amann, 2003; Blake, 2009; Batson, 2009; Eddy, 2009; Bannon, 2010; Kaparo, 2012; Hill, 2016; Tántia, 2019; Wait, 2019; Vancea, 2020; Williamson, 2021; Ramadanova, Kulbekova, 2023; Fraleigh, 2023; Zulfahmi, Roza, 2024; Skelton, 2024; Craycroft, 2024; Olech et al., 2024; Berkley, 2024; Karakus et al., 2024).

However, there is a lack of somatic intelligence research in Lithuania. This shows the relevance of the topic under consideration and the need for deeper research.

The research raises a problematic question: How to empowering of the kinesthetic and sensory cognitive processes as the somatic intelligence parts in the educational management?

The object of the research is the kinesthetic and sensory cognitive processes as the somatic intelligence parts in the educational management.

The aim of the research – to reveal the features of kinesthetic and sensory cognitive processes as the somatic intelligence parts in the educational management.

The tasks of the research:

1. To perform a theoretical analysis of the somatic intelligence phenomenon.
2. To identified the importance of kinesthetic and sensory intelligence like cognitive processes on the basis of the somatic intelligence model.
3. To reveal the ways of developing students' kinesthetic and sensory cognitive processes on the basis of the somatic intelligence.

The method of empirical research of the work is qualitative, which is based on phenomenological methodology, when it concentrates on the perception of the researched subjects, their social context, individuals are accepted as active creators of meaning, when it is revealed how people understand and interpret the facts and events of their lives or ongoing phenomena.

The qualitative research method (instrument) is a semi-structured individual interview. For the qualitative research, questions were prepared based on the model of somatic intelligence (Table 1).

Theoretical Background

Phenomena of the Somatic Intelligence (SI). In general, different aspects of intelligence or components of expression are presented in the widespread theory of multiple intelligences by H. Gardner (1983). Humans are said to have all intelligences, but each person has a unique combination or profile. Everyone has the opportunity to improve their intelligence, but some people have natural inclinations in certain areas. H. Gardner (1983) recognizes seven areas of intelligence, including visual-spatial, verbal-linguistic, musical-rhythmic, logical-mathematical, interpersonal, intrapersonal, naturalistic and bodily-kinesthetic.

The historical basis of the concept of somatic intelligence is the emergence of somatic psychology and some early body-centered therapies (de Silva, 2017). According to B. B. Barratt (2013), somatic psychology is the psychology of the body, a discipline that focuses on our embodied experiences as human beings and recognizes these experiences as the foundation and origin of all our experiential potential. I. Ginot (2010) mentions a theoretical delay related to somatics, research on somatic intelligence, as well as other issues of body practice. This delay does not mean the absence of discourse, but shows how difficult it is to verbalize something related to experience and subjectivity. In fact, the actualization of SI became evident after the book „Somatic Intelligence: The Conversation Every Body Wants to Have with You“ published by American holistic disciplines doctor S. Hill (2016). According to S. Hill (2016), the better a person feels, perceives and controls his body, its condition and mobility, the higher his level of SI. Although the SI is described as a lived experience that passes through us, its materiality is the categories of poetics, corporeality, and expressiveness, which do not translate into metrics that can be measured or quantified. In this way, SI are difficult to explain and understand, but easy to feel and realize.

It is worth mentioning a very popular assessment model – an instrument that enables one to assess the level of somatic intelligence. A highly detailed, somatically oriented instrument is the Multidimensional Assessment of Interoceptive Awareness (MAIA) (Mehling et al., 2012). This instrument helps assess self-regulation, emotional awareness and listening to the body. The instrument has been thoroughly psychometrically validated and has been translated into more than 20 languages (Freedman et al., 2022). Below is a model of the MAIA instrument framework covering the main dimensions of somatic intelligence (Fig. 1).

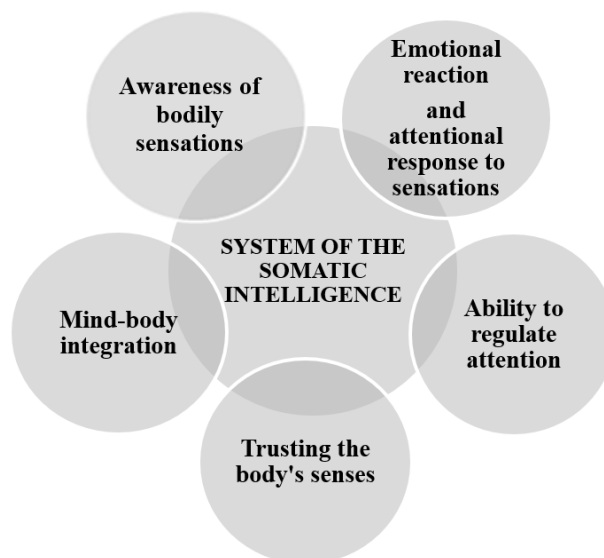


Fig. 1. MAIA System of Somatic Intelligence
Compiled by author based on W. E. Mehling et al. (2012), Freedman et al. (2022)

According to W. E. Mehling et al. (2012), Freedman et al. (2022) MAIA's conceptual framework can be understood as follows:

1. Perception of body sensations includes perception of negative, positive, and neutral sensations, without subdimensions or distinctions as to whether they are perceived actively or passively. The sensations of breathing are understood as neutral sensations.

2. Emotional reaction and attentional response to sensations include four subdimensions: a) affective response to a sensation, expressed in its annoyance or pleasure; (b) suppressing, ignoring, or avoiding sensory perception, such as through distraction; (c) narrative, judgmental awareness, which „analyzes“ sensations, including anxiety that something is wrong; (d) awareness of the present moment with negligible sensory awareness, i.e. attentive presence.

3. The ability to regulate attention is related to various ways of managing attention as an active regulatory process. This includes the ability to: a) maintain awareness; b) actively direct attention to different parts of the body; c) narrow or widen the focus; d) allow the sensations to be without trying to change them. This dimension is based on the division of „quality of attention“.

4. Trust in body sensations, beliefs about the importance of sensations show how much awareness of body sensations is useful for decision-making or beneficial for health.

5. Mind-body integration is considered the ultimate goal of mind-body therapy and includes three subdimensions: a) emotional awareness, the awareness that certain physical sensations are the sensory aspect of emotions; b) self-regulation of emotions, sensations and behavior; c) the ability to feel an embodied sense of self, reflecting the interconnectedness of mental, emotional, and physical processes, rather than a sense of disembodied alienation and disconnection from one's body.

R. F. Kaparo (2012) states that somatic education provides discipline for new participation in life. It is a practice to awaken to who we really are, receiving the gift of our embodiment – not what we mistake for our „body“ as an „object“, but as the embodiment of our space in the bloom of life, here and now.

It is clear that the aim of somatic pedagogy is to work from the inside, not to objectify the body (Rimmer-Piekarczyk, 2018). Bannon (2010) suggests that greater engagement with experiential somatics could be a way for educators to develop new ways of learning that allow learners to “access knowledge that is special” (ibid., p. 50).

Somatic Intelligence Development. Like other types of human intelligence, somatic intelligence can also be developed. According to T. Amann (2003), the development of somatic intelligence involves the body in the educational experience so that the learner is always actively involved in the educational process. Somatic education is felt by the body, and the definition of such knowledge rationally limited not only the understanding of somatic education, but also its development. Embodied learning literally means giving the body to education.

Somatic education often takes place in experiential learning where the learner becomes an active participant

in the knowledge acquisition process through activities such as role playing and discussion. C. Clark (2001) further generalized somatic education, describing it as „how we learn from our bodily experiences” (p. 3). M. S. Crowdes (2000) also used experiential somatic and emotional education methodologies with sociology students exploring power relations. She interprets somatic education as conscious embodiment, which is not limited to simply connecting the emotional and cognitive spheres in experiential education. Furthermore, „it implies the integrity of mind, body and action, accompanied by a certain awareness of the wider social context“ (ibid., p. 27). Conscious illustration includes, but is not limited to, body posture, style, emotions, and simple body actions (Crowdes, 2000). According to M. C. Magalhães (2023), in the context of somatic experience, it is not about erasing past experiences or old patterns of the body, but about creating new possibilities and alternatives, expanding the body's possibilities to move, feel and express itself.

Since somatic simply means relating to or affecting the body, the development of somatic intelligence can be divided into four main domains, each of which is somatic in nature: kinesthetic, sensory, emotional, and spiritual (Amann, 2003). This systems model of somatic intelligence offers a visual explanation of how somatic education often functions as an umbrella for many types of body learning and education, and that each of the four domains also often intersects with each other (Fig. 2).

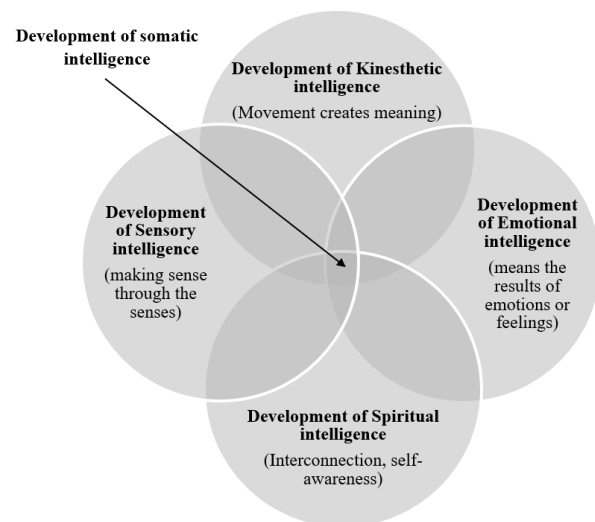


Fig. 2. Systematic development of Somatic Intelligence
Source: T. Amann (2003)

The areas of somatic intelligence development according to T. Amann (2003) are detailed below:

1. Development of kinesthetic intelligence involves movement. Using fine and/or gross motor skills, the body begins to function. It creates movements and actions that often provide lessons/tasks about discipline, diligence, coping with stress or problem solving. Kinesthetic learners need to actively engage in learning through

hands-on manipulation, physical engagement and role-play.

2. Development of sensory intelligence. Using the five senses to create knowledge or make sense of education is considered sensory education. The senses of sight, hearing, taste, touch and smell require a separate function of the body, and since information is accumulated through each sense, a person relates that information to his experience and extrapolates meaningful meanings to life. In this way, the educational program could include feelings, awareness of perception and thinking, arising through the senses of the learners. Since eyes, ears, mouth, nose, and the ability to touch are parts of the body, sensory education is somatic in nature.

3. Development of emotional intelligence. It is the acquisition of knowledge by paying attention to and honoring one's feelings and emotions. Many times in life we find ourselves at a decision point and even though our mind explores the rational choices we can make, our gut or feelings tell us otherwise. Knowing our emotions and being able to recognize them allows us to reflect on the impulses caused by certain emotions. We then choose how to respond – we can choose our first impulse or we can decide on a mutually beneficial response for all parties involved. The development of emotional intelligence requires the same interactive, experiential methods as kinesthetic and sensory education. Cooperative learning that includes discussion and role play can be useful for understanding different perspectives, resolving conflicts, and improving communication. Again, the use of the body is an integral part of such activities. According to V. Kontautienė (2019), students are united by stimulating interaction and cooperation (the ability to express and receive physical emotional support), which facilitated the formation of a positive psychological climate. This allowed the creativity of the students to be revealed and developed the ability to be confident and self-reliant.

4. The inclusion of the development of spiritual intelligence in this model makes sense, primarily because spirituality is basically giving meaning to the meaning of human life. One definition by E. J. Tisdell (2003) states that spirituality is how people create knowledge, and this process is often carried out in symbolic and unconscious ways, such as creating art through music, dance, images, symbols and rituals. Symbols can then be a concept, a person, a physical object that has a particular meaning, or a movement or gesture (Tisdell, 2003). Much of the spirituality literature makes direct connections between spiritual development(s) and development(s) through our feelings, sensations, and movements. According to S. Fraleigh (2023), spiritual qualities are embodied. We dance and sing them into being.

Based on T. Amann (2003) systematic model, it is important to emphasize the phenomena of kinesthetic and sensory intelligences in the context of empirical research's first part. Therefore, it is appropriate to further distinguish and discuss each of both concepts in the somatic field.

Kinesthetic Intelligence (KI) concept in the somatic field. Gardner (1999), who proposed dividing intelligence into several types, states that kinesthetic

intelligence involves controlling all or part of one's body to solve problems, communicate, or fashion products. It is used, for example, in athletics, surgery, dance, and dramatic performances.

KI is the intelligence that is predominant in people who can control their bodily movements and accomplish their goals successfully. This intelligence includes skills such as coordination, dexterity, balance, flexibility, strength, speed. The ability to use his/her body or hands for explains one's feelings or ideas reflect this intelligence (Armstrong T., 2003; Moran S. Et al., 2006). KI uses the body to solve a problem, understand, or learn (Zobisch P. et al., 2015). Gunawan, S., et al., (2023) points out that KI refers to the capacity to utilize various body parts to address challenges or create objects.

A. El Wardi (2023) uses phenomenological research to analyze how the common characteristics of physiology, psychology and the environment create a unique ecosystem of the body's cellular consciousness, in which a person perceives the totality of being. Through the intersections of soma, perception, and vibration, the body's connections to the mind, the field around the body, and the matrix that connects all dimensions are explored. „Corporeality means something real, something solid, something imbued with animation, something that can resonate and interact with the environment... even in silence“ (Mejia, 2019, p. 2). T. Amann (2003) supports these views by stating that our body and the way it experiences emotions, feelings or movements simultaneously engages and makes sense of information. Cognitive and kinesthetic functions work together with our cultural environment to derive meaning from our experiences.

The inclusion of kinesthetic-based learning activities into educational management is an essential necessity in developing students' creativity (Kusuma, 2014; Taher et al., 2023). Kinesthetic-based learning allows for a more active engagement of students in the learning process, as it involves the incorporation of physical abilities in the comprehension of the material (Gunawan et al., 2023).

Therefore, somatic intelligence is the development of human relationships, because it begins with the body, which stops to listen to itself. And if the body stops listening to itself, it will listen more to time, space, others and what is happening (Magalhães, 2023). The SI field can be thought of as a set of approaches that examines the body in perceptual, motoric, cognitive, creative, and expressive aspects. Body in situation, body in context (ibid.). Although based on the inside, SI is not closed in on itself, but expands into contact with the outside world: somatics enables inner knowledge within us.

In recent years, a more complex, multidimensional view of body awareness has emerged, distinguishing modes of attention such as thinking about the body and being in the body. A person's ability to move from thinking about physical symptoms (explaining, evaluating and ultimately worrying) to a state of awareness in the body, often referred to as mindfulness, is both an object of philosophical discourse and an awareness of a certain quality of the body. W. E. Mehling et al. (2012) define body awareness as the sensory perception arising from the body's physiological states, processes (including pain and emotions) and actions (including movement) and

acting as an interactive process that involves personal evaluation and shapes attitudes, beliefs and experiences in their social and cultural context.

Sensory Intelligence (SnI) concept in the somatic and emotional field. Analyzing scientific research in the context of sensory intelligence, it was found that the concept of emo-sensory intelligence is used more frequently in the scientific field. This is explained by the fact that sensory intelligence is closely related to emotional intelligence, although sensorics has direct connections with the human body and kinesthetic intelligence.

At the beginning of the 21st century, the importance of the body and senses in individuals' cognition was once again recognized (Pishghadam et al., 2022). A. Lombard (2007) extended the concept of intelligence to cover the additional ability of spotting, decoding, and monitoring sensory codes as sensory intelligence (SI). He presented sensory intelligence as a complementary aspect of intelligence, defining it as how sensory adjustments occur to fit with the surrounding environment. R. Pishghadam et al. (2022), sensory intelligence describes individuals' ability to connect with their senses and understand them, ignoring the mediation between senses and cognition.

Scientists analyze that different senses influence the acquisition of knowledge and skills. T. Amann (2003) points out that the use of five senses help create knowledges. Since eyes, ears, mouth, nose, and the ability to touch are parts of the body, sensory education is somatic in nature. According to X. T. Guo (2018) the 3 types of senses helps to acquire different skills: 1) information senses – primary for learning (see, hear); 2) social senses – primary for relationships and social skills (touch, smell, taste); 3) regulation senses – primary for attention and concentration (movement: vestibular and proprioception).

R. Pishghadam, S. Shayesteh (2017), in a study on colors in a culture, developed the concept of emo-sensory (emotional sensory) intelligence by addressing emotional intelligence and sensory intelligence to show the interplay between emotions and senses. Pouryazdanpanah Kermani (Jahani, Aminzadeh, 2024) examined the relationship between emo-sensory intelligence, cognitive learning strategies and students' academic achievement. It was found that emo-sensory intelligence played an important role in enhancing learning strategies, leading to improved academic performance.

Analyzing the field of scientific research in the context of sensory intelligence, it was found that the use of sensory intelligence in educational processes is extremely relevant in the *inclusive education* (for example, Mantey, 2021; Zhao, 2023).

In summary, the historical basis of the concept of somatic intelligence is the emergence of somatic psychology and body-centered therapies. There is a theoretical delay in research on somatic intelligence, but this does not mean the absence of discourse, but shows the complexity of describing this phenomenon related to experience and subjectivity. Recently, in the foreign scientific field, the concept of somatic intelligence is

actively researched and developed, modeled (component models are created) and applied in the construction of evaluation systems (questionnaires).

After examining the complexity of the phenomenon of the development of somatic intelligence, it can be emphasized that the interrelationship of movement, emotions and sensations often causes a sense of connection that touches the spiritual sphere. The result of all this is a rich somatic experience. It can be argued that by combining cognition with many areas of somatic education, education itself becomes holistic, and the body constantly emerges as a multifaceted force that gives meaning to human experience.

Methodology

The method of empirical research of the work is qualitative, which is based on phenomenological methodology, when it concentrates on the perception of the researched subjects, their social context, individuals are accepted as active creators of meaning, when it is revealed how people understand and interpret the facts and events of their lives or ongoing phenomena.

The aim of the empirical research is to reveal the ways of developing students' kinesthetic and sensory cognitive processes on the basic of somatic intelligence in the dance class.

This research is part of a larger study on somatic intelligence, i.e. the article presents research results related to only two parts of somatic intelligence – kinesthetic and sensory. The next article will present results related to emotional and spiritual cognitive processes on the basic of somatic intelligence model.

Generalization and sampling. The generalization of qualitative research is of the analytical (Bitinas et al., 2008) or theoretical (Seale, 1999; Smaling, 2003) type, since such a selection of the general population is more related not to the research population, but to the theory being developed.

Qualitative research sample: five dance educators (class/group managers) of formal education institutions in Klaipėda city (Lithuania). Primary school dance pedagogues were chosen for the empirical study for several reasons: first, the discipline of dance is directly and closely related to the body, emotions, sensory, creativity. It is a unique discipline that requires the empowerment of many intelligence's aspects; second, especially in dance classes, teachers use a variety of methods that connect different aspects and types of intelligence; thirdly, such a research will help clarify what educational methods and tools can be useful in the lessons of other disciplines, which would lead to greater involvement and motivation of students.

The qualitative research method (instrument) is a semi-structured individual interview. For the qualitative study, questions were prepared based on the model of somatic intelligence (Fig. 1, Table 1).

Formulated questions (Table 2) helped to reveal the peculiarities of the education of somatic intelligence components (kinesthetic, sensory) in the context of a dance lesson. The questions were formulated in an open-ended manner to elicit deep and broad responses. During

the interviews, if there was a need to clarify the obtained data, they were supplemented.

At the beginning of each interview, the research participants were presented with a conceptual working model. When applying the interview instrument, a nominal scale was used to assess the age, work experience and position of the interviewees (demographic data). The answer category is multidimensional.

The process of qualitative research. The qualitative study was conducted in March of 2024 in direct communication with the intervenors; the conversation was recorded with a mobile phone recorder. The research data were also collected in writing.

The logical sequence of the semi-structured interview:

- a meeting between the researcher and the intervenor and the presentation of the theoretical model according to which the empirical study is conducted; explanation of specific concepts;

- collection of demographic data (i.e. questions about age, position and length of service);

- presenting predetermined interview questions, detailing these questions and supplementing them with indirect questions. The interviews took place in the form of a strictly non-formalized interview, creating a more relaxed atmosphere and trust. The semi-structured interview was given unlimited time.

Validity parameters of qualitative research. The chosen strategy for collecting the validity parameters of the qualitative study and their confirmation facts is based on documentation. As little interpretation as possible, the pursuit of objectivity and the use of technology in recording the respondents' answers, allowed us to confirm the internal validity of the qualitative study with the parameters highlighted in Table 3.

Table 1. Research topics on the development of students' kinesthetic and sensory cognitive processes on basic of the somatic intelligence in the dance class

No.	Themes
1.	<i>Developing Kinesthetic Intelligence: Movement Creates Meaning</i> Explores how learners engage in learning through hands-on manipulatives, physical engagement and role-playing.
2.	<i>Developing Sensory Intelligence: Making sense through the senses</i> It investigates how feelings, perception and thinking consciousness, emerging through the senses of learners, are included in the educational program.

Table 2. Content of interviews with dance educators (class/group managers)

Question number	The subject area and the content of the question
	<i>Stage 0. Demographic data</i>
1, 2, 3	Age, work experience, duties
	<i>Stage 1. Developing Kinesthetic Intelligence: Movement creates meaning</i>
1.1.	How are fine motor skills used in dance lessons? What methods, techniques and tools are used for this?
1.2.	How are gross motor skills used in dance lessons? What methods, techniques and tools are used for this?
1.3.	What are the applicable tasks related to the development of discipline, diligence, coping with stress, problem solving skills?
1.4.	How are hands-on body manipulation, physical engagement and role-play used in dance lessons?
	<i>Stage 2. Developing Sensory Intelligence: Making sense through the senses</i>
2.1.	How are the different senses (sight, hearing, taste, touch and smell) used in dance lessons to create knowledge?
2.2.	How are the different senses (sight, hearing, taste, touch and smell) used in dance lessons to make the education meaningful?
2.3.	How are students' feelings, perceptions and conscious thinking engaged through the senses of the learners?

Table 3. Parameters of internal validity of qualitative research

Validity parameter	Purpose	Method (resolution)
Reliability/objectivity	Write down and describe the information provided by the respondents as accurately as possible, to avoid subjectivity and interpretation of information	Fixed information in text documents and audio recordings
Adaptability	Summarize the results of qualitative research as accurately as possible	The clearer and more accurate the description of the current situation
Addiction	Assess the situation and circumstances as accurately as possible so that the results of the qualitative research can be used in other studies	Description of the current situation and assessment of limitations
Verifiability	The results obtained during the qualitative research can be used in other works of researchers	Fixed information in text documents and audio recordings

Since analogical, theoretical generalization is important in qualitative research, external validity is assessed here according to the transferability principle, when the aim is to present conclusions that would allow the readers of the research report to understand where they can apply the research results: whether they can transfer them to their own or other situations, contexts, theories being developed.

Results

To conduct an empirical research, questions were formulated that reveal the peculiarities of the development of students' kinesthetic and sensory components of somatic intelligence in dance lessons. Five dance class learners (class managers with codes: In1 – In5), whose age range is from 24 to 52 years old, work

experience in the field of dance pedagogy – from 2 to 18 years, working with 1st to 4th grade students in formal education institutions participated in the research. One man and four women participated in the research.

The following matrices (Tables 4 and 5) present 2 themes of empirical research, 8 categories and their

corresponding codes, revealing the peculiarities of the development components (parts) of somatic intelligence. During the research, new code (n) was revealed – this is the “creation of a positive atmosphere”.

Table 4. Findings from the qualitative study: 1 theme matrix

1 theme. Developing Kinesthetic Intelligence: Movement creates meaning	
Categories	Codes
Fine motor skills training	<p>Methods of training fine motor skills:</p> <ul style="list-style-type: none"> • 1-2 classes: dance fairy tale with drawing (In2) • 3-4 classes: dance fairy tale with drawing emphasizing details, colors (In2) <p>Tools for training fine motor skills:</p> <ul style="list-style-type: none"> • a sticks, sheets of paper, paper plates, writing instruments, magnets (In1) • during improvisation lessons - cloths, scarves (In3)
Gross motor skills training	<p>Methods and tools for training gross motor skills:</p> <ul style="list-style-type: none"> • teamwork (In1) • flashmob (In1) • dance compositions (In1) • warm-up, exercise (In1; In3) • learning new dance steps and combinations (In3) • 1-2 classes: jumps, steps, double step, hand bridges, clapping together with jumps (for rhythm and coordination) (In2) • 3-4 classes: somersaults, somersaults, running while depicting animals (In2) • role-playing games (In1; In2; In3; In4; In5) • performing a movement to the four sides of the hall (In4) • rotation in a circle while showing and performing movements (In5) • rotation in rows (In4; In5) • use of attributes for rhythmic training (In5) • changes in the rhythm of movements during the warm-up (In5)
Discipline, coping with stress, problem solving methods	<p>Methods and tools of ensuring discipline:</p> <ul style="list-style-type: none"> • rules and agreements (In3) • creating common rules and their criteria with the whole class (In2) • talking (In3) • raised hand and saying “Stop! You must now calm down, take a breath, count to ten”; “Stop! It's unpleasant for me” (In2; In3) • additional time for dance lessons in case of indiscipline (In1) • triad of rules “Silence-Attention-Effort” (In5) <p>Methods and tools of coping with stress:</p> <ul style="list-style-type: none"> • reflection (In2; In4) • “Faces” (In2), “Masks” (In5) to identify feelings <p>Methods and tools for solving problems:</p> <ul style="list-style-type: none"> • talking with the teacher (In2) • cooperation with other school specialists (In2)
Physical engagement and role play	<ul style="list-style-type: none"> • game with story creation (In3) • game with creation of choreography (In3) • game with contact improvisation (In3) • the game „Icebreaker“ (In1) • observation lesson (videos) with physical involvement (In2) • creative task-game „Drawings“, i.e. performance of movement by changing choreographic figures, drawings (In4) • the game „Space“ (In5) • game „Dancefloor“ (In5) • role play - animal, bird movement representation (1-2 classes) (In2) • role-playing game „Choreographer-dancers-spectators“ (3-4 classes) (In2) • role-playing game „Dance teacher – assessor“ (In3) • role play „Day and Night“ for relaxation (In2) • role-playing game „Dance Levels“ (In4) • role-playing game „Animals of Africa“ (In4)

Evaluating the peculiarities of the development of kinesthetic intelligence, it is stated that both fine and gross motor skills are used in the dance lesson. A lot of tools are used in the dance class to develop fine motor skills - pebbles, sheets of paper, paper plates, writing instruments, magnets, cloths, scarves.

However, almost all participants noted that they mostly use gross motor training methods: *Anyway, we mostly work with gross motor skills in dance lessons, it's quite natural and understandable (In1); Considering that fine motor skills are fingers, fine scratching, some kind of*

digging, I don't know, sorting, well, that's really not much. Just drawing. What I use (In2); Fine motor skills are rarely used in dance classes. If used, usually during improvisation lessons (In3). The research participants named many methods and tools for training gross motor skills, including elements of the structure of a dance lesson (for example, exercise), specific movements, orientation in space while moving, composition and improvisation in groups, use of counterpoint for rhythmic training, division of movement material into different time intervals, etc.

The peculiarities of the development of kinesthetic intelligence can also be attributed to methods and tools that promote discipline and help manage stress and conflicts. *Third- and fourth-graders - there are usually different conflict situations with them. There are various external circumstances, something happens even outside the boundaries of the school* (In2). A large number of role-playing games with physical involvement are also used (15 different games). *Role-playing games save by*

improvising, as well as by choosing class leaders, or vice versa - by moving inactive students (In1); *In a class with a child with special needs... I let him get involved - for example, he as a teacher can evaluate who danced best* (In4).

Applied role-playing games develop not only body motility, but also imagination, cooperation skills, help to get more involved in the educational process.

Table 5. Qualitative research findings: 2 theme matrix

Topic 2. Developing Sensory Intelligence: Making sense through the senses	
Categories	Codes
Creating a positive atmosphere (n)	Creating an atmosphere: <ul style="list-style-type: none"> intense lighting (In1) pleasant aroma (In1) own class outfit colour (In4) Building trust and a sense of security: <ul style="list-style-type: none"> handshake (In1; In2; In5)
Using the senses to create knowledge	Knowledge creation: <ul style="list-style-type: none"> demonstration of the teacher's own moving material (In2) improvisational dancing according to the relevant dance genre (In5) Cultural awareness: <ul style="list-style-type: none"> testing footwear for different dance styles (inspection, putting on, jumping) (In1; In2) national dance costume testing (inspection, touch, try-on) (In1) visual material monitoring (In1; In3) Lithuanian region Aukštaitija on contractual issues (In2) Discussion of the classification of dishes specific to the regions of Lithuania (In2) Environmental awareness: <ul style="list-style-type: none"> outdoor dance lesson exploring the sights and sounds of the environment (In3) game through taste associations (orange: sweet-sour) (In2) dances of world regions (In4)
Using the senses to make sense of education	Using the senses to develop critical thinking: <ul style="list-style-type: none"> role-playing game „Dance teacher – evaluator“ (In3; In5), which is also applicable to special needs of children for their inclusion observation of elements of the contemporary dance genre in videos (In2)
Involvement of feelings, perception and thinking consciousness through the developing senses	Involvement of the senses: <ul style="list-style-type: none"> writing self-evaluation letters at the end of the semester (In3) sharing personal experience (teacher, student) (In1) the game „Color Dance“ with the sequence of associations: color-music-feelings (In4) self-assessment on five levels „Dance level in me“ (In4) Using the senses to develop critical thinking: <ul style="list-style-type: none"> role-playing game „Dance teacher-evaluator“ (In3) self-reflection (determination of internal energy level) (In4) self-evaluation on three levels „Like“ (In5)

(n) – the new category

Analyzing the features of the development of sensory intelligence, it was noticed that during the dance class, efforts are made to create a positive, favorable atmosphere using light and smell, and a sense of trust and security is created (a new research category). Even three interviewees emphasized that holding children's hands creates a sense of security and trust, and this is an important psychological aspect in a dance lesson. *By using different senses in dance lessons, children get more involved in the activities* (In1). With the help of senses (sight, hearing, smell, touch), new knowledge is created, cultural knowledge of the environment surrounding the child is implemented, and critical thinking is developed.

In the context of cultural knowledge, students are introduced to the cuisine characteristic of the regions of Lithuania, the (contractual) features of singing, the specifics of the national costume and footwear, for example: *Touching - also the same regions, Lithuanian folk dance and what kind of footwear was, so let's say, <...> what I I can give the children, touch them, that is, for example, clogs. Let's pass it through our hands, let's*

see what it's made of. You can try to put it on and jump to feel more like it was there before (In2).

To learn about the surrounding environment, dance lessons are held outdoors, when children are given creative tasks related to natural phenomena, animals, birds. Such a presence in a natural space, connecting different senses, gives a deeper understanding of knowledge and experiences in the educational process. It is noted that the use of senses is more appropriate in modern dance lessons: *Still, for children, I see those senses more in modern dance than in Lithuanian folk dance* (In2). *Contemporary dance, as we know, is more erratic, let's call it that. And it is sometimes difficult for them to understand, because in schools we do not cover modernity as it really is. And when you show the video, they get really weird. They hear very strange music, they see very strange movements, but then they understand more why it is modern* (In2). The category of using the senses to create knowledge is the largest in the topic of sensory intelligence, i.e. dance pedagogues actively apply this methodology in their professional activities. *Why, I think that those sensations are needed, so that you can*

empathize and better understand what it is about (In2). Ways and means of involving feelings are also used - it is a form of various (self)reflection practices of self-evaluation, experience sharing and games. During the research, it became clear that in the classes of one teacher, many educational tools and methods are related to the therapeutic aspect of colors: Each class has its own color, for example, purple class, green class (In4); I use reflection - who liked what dance, what color it was (In4).

It can be said that the development of sensory intelligence is significant in the context of education, as it helps to create new knowledge, give meaning to education, and increase the inclusion of students' feelings, perception and thinking consciousness.

In order to systematize and summarize the abundance of categories and codes of the study, a scheme was drawn up showing certain regularities (Fig. 3).

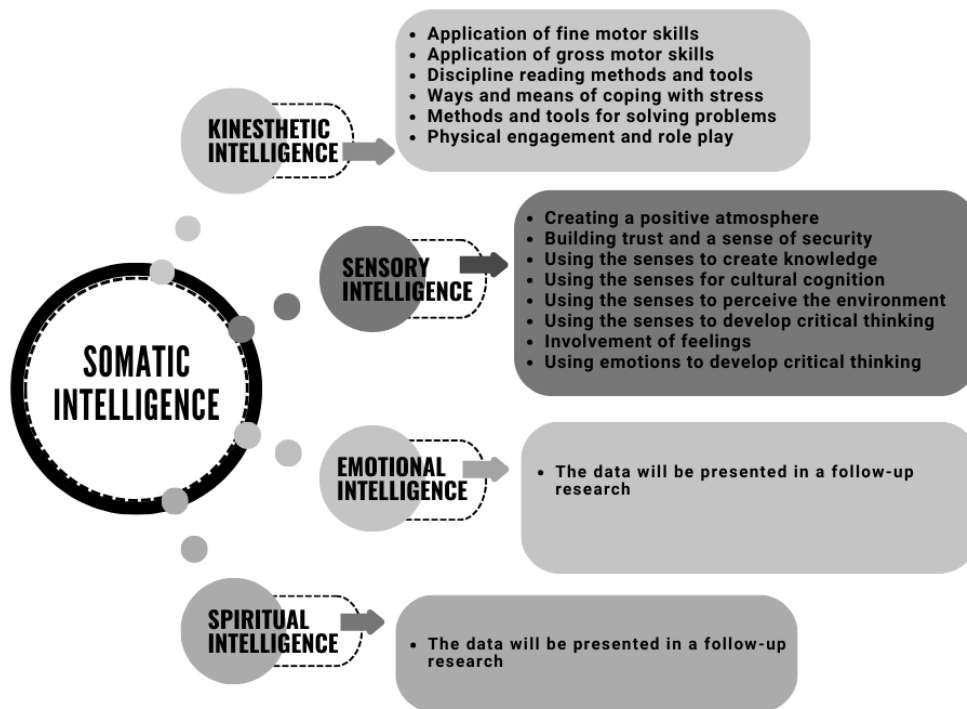


Fig. 3. The features of developing students' kinesthetic and sensory cognitive processes on the basis of somatic intelligence in the dance class

The results of the qualitative research allow us to assert that the kinesthetic and sensory parts of the somatic intelligence of the 1st-4th grades students in Klaipėda city formal education institutions are developed in a complex way – a variety of methodological methods and tools are used. Figure 3 shows that a lot of attention is paid to the development of sensory intelligence (8 codes) and kinesthetic intelligence (6 codes). The methods and tool of somatic intelligence education applied in schools have the potential to be used in the context of the education for children with special educational needs (inclusional education), since there are quite a few methods of sensory intelligence education.

During the research, it was found that the methods and tools used for the development of sensory intelligence include the following aspects: creating a positive atmosphere, creating a sense of trust and security; the use of educational senses to create knowledge, cultural and environmental knowledge, training of critical thinking; involving the feelings of students and the teacher (group leader), using feelings for the development of critical thinking. Methods of developing kinesthetic intelligence include: development of fine and gross motor skills; discipline-reading methods

and tools, methods and tools for overcoming stress and solving problems; physical involvement through role playing and other games.

Conclusions

Somatic intelligence is a type of human intelligence that includes self-regulation, emotional awareness, and listening to the body. Analyzing the scientific literature, it becomes clear that there are few theoretical works and empirical studies of somatic intelligence in Lithuania, but this does not mean the absence of discourse. Recently, the concept of somatic intelligence has been actively explored in the foreign scientific field using concepts such as somatic awareness, body awareness or interoceptive awareness; creating different models that enable detailing and structuring the concept of somatic intelligence; when constructing assessment systems (questionnaires). The concept of somatic intelligence, from a theoretical point of view, is a new and rarely studied phenomenon that requires in-depth research on a global and (especially) Lithuanian scale.

Developing somatic intelligence creates a new teaching method that enables more effective

implementation of educational goals. Everyone can increase their level of somatic intelligence by learning to control their body. The goal of somatic pedagogy is to link emotional, kinesthetic, sensory and spiritual education. Greater involvement in experiential somatics could be a way for pedagogues (group managers) to create new methods education, allowing learners to achieve special knowledge. The complexity of the phenomenon of somatic education describes the interrelationships of movement, emotions and sensations, which cause a sense of interaction that touches the spiritual sphere. In this way, the somatic experience is enriched. By combining cognition with many areas of somatic education, education itself becomes holistic, and the body becomes a multifaceted force that gives meaning to human experience.

The somatic intelligence of primary school students in Klaipėda city formal education institutions is developed in a rather complex way. Methods and means of developing sensory intelligence include: creating a positive atmosphere, creating a sense of trust and security; the use of educational senses to create knowledge, cultural and environmental knowledge, training of critical thinking; involvement of students' and teacher's feelings, use of feelings for the development of critical thinking. Kinesthetic intelligence training methods include: training of fine and gross motor skills; methods and tools promoting discipline, methods and tools for overcoming stress and solving problems; physical involvement through role playing and other games.

The following methods and tools can be briefly distinguished, which allow developing the kinesthetic and sensory aspects of somatic intelligence:

- use of colour (drawing) methods to identify and explain a phenomenon, process, problem, feelings, emotions;
- use of rhythmic games (for relaxation, motor skills, coordination, to create a sense of togetherness);
- inclusion of classroom management (co-creation of common rules);
- the use of role-playing games (for the perception and cognition of the examined process and situation through sensory and kinesthetic aspects, to create a sense of community);
- the use of various object attributes in the educational process, which will overcome sensory aspects in cognition;
- use of reflexive methods/talking (for stronger and deeper reflection, to create communication and cooperation relationships, to increase awareness of oneself and others, to cope and manage stress).

These methods identified during the research can be used not only by primary school dance teachers. The methods can be used in the lessons of other age groups students and other disciplines (both arts and humanities, social and technical sciences). Another important aspect is that sensory intelligence development methods can be widely applied during inclusive education, when students with special needs cannot be educated in standard ways.

The use of all the listed methods and tools can increase the level of students' involvement in the

educational process, creation and assimilation of familiar and specific knowledge, the level of well-being and motivation.

Research results related to other aspects of somatic intelligence (emotional and spiritual intelligence) will be presented in next article.

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