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# Transforming Management Education: Integrating Sensorial, Emotional, and Spiritual Skills to Navigate Complexity

Iveta Ludviga[1], Arnaud Trenvouez[2], Hanna Karhu[3], Anne Eskola[4], Violeta Firescu[5], Adriana Sava[6], Elaine Leen[7], Vincent Goubier[8], Christophe Pons[9], Inese Sluka[10], Anneli Kakko[11]

## Abstract

*Higher education (HE) institutions and educators continually explore novel and practical pedagogical approaches to equip future managers with the skills to make effective decisions and navigate complex organizational environments. This paper presents an empirical case of a pioneering project that devised an innovative training methodology strategically using Sensorial, Emotional, and Spiritual (SES) skills, in addition to rational capacities, to address complex management cases. The methodology, rigorously tested over three years with students from four European universities, has demonstrated its potential to revolutionize management education and instilled confidence in its effectiveness. The results underscore the significant value of sensorial, emotional, and spiritual (SES) training within HE institutions. This training enhances the competencies necessary for future managers to tackle and resolve complex problems effectively, strengthening their ability to manage complex environments. The survey data and interviews we conducted indicate that sensory, emotional, and spiritual skills training has not only improved the competencies needed to manage complexity – awareness, sense of community, self and other regulation, and sense of life but has also transformed the students' approach to problem-solving. This transformative approach not only inspires hope for the future of management education but also suggests a potential for positive change. Our investigation presents Sensorial, Emotional, and Spiritual skills as a transformative subset of soft skills, advocating for the need for SES skills training for future managers. We discuss the implications for pedagogies and strongly advocate for including SES skills development in students' training and learning at higher education institutions.*

**Keywords:** *Soft Skills, Complexity, Generic Competencies, Emotional Skills, Spiritual Skills, Transformative Learning Theory.*

## Introduction

What new pedagogies and learning processes are leading to better outcomes is a question of interest for researchers and practitioners in the field of higher education (Ellis, 2022). For centuries, universities, in their teaching and learning processes, have implemented tools of traditional logic and rationality. However, in complex and turbulent environments, the ability to sense and immediately respond to the environment's complexity is crucial, and effective management is not based solely on rationality (Certo et al., 2008). Higher education institutions still lack innovative methods to teach future managers to perform effectively in complex and turbulent environments (Wu & Sekiguchi, 2023).

Complex problems have accompanied mankind since its existence, but globalization and increasing interrelatedness have caused them to multiply in numbers (Steiner & Scherr, 2013). The growth of complexity is reflected in businesses' goals - today, companies, on average, set themselves six times as many performance requirements as they did in the 1950's. To reconcile the conflicting goals, managers

[1] RISEBA University of Applied Sciences, Riga, Latvia, Email: iveta.ludviga@riseba.lv
[2] PerformanSe, Nantes, France, Email: arnaud.trenvouez@performanse.com.
[3] Jamk University of Applied Sciences, Jyväskylä, Finland, Email: hanna.karhu@jamk.fi.
[4] Jamk University of Applied Sciences, Jyväskylä, Finland, Email: Anne.Eskola@jamk.fi.
[5] Technical University of Cluj-Napoca, Cluj-Napoca, Romania, Email: violeta.firescu@mis.utcluj.ro
[6] Technical University of Cluj-Napoca, Cluj-Napoca, Romania, Email: adriana.sava@mis.utcluj.ro
[7] PerformanSe, Nantes, France, Email: elaine.leen@performanse.com
[8] Lyon Catholic University, France, Email: vgoubier@univ-catholyon.fr
[9] Lyon Catholic University, Lyon, France, Email: cpons@univ-catholyon.fr
[10] RISEBA University of Applied Sciences, Riga, Latvia, Email: Inese.sluka@riseba.lv
[11] Jamk University of Applied Sciences, Jyväskylä, Finland, Email: anneli.kakko@jamk.fi

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continuously redesign the organizational structures, performance measures, and incentives. They try to align employees' behavior with shifting external challenges. To smooth this development, companies usually introduce a variety of initiatives designed to infuse work with positive emotions (Morieux, 2011).

Complexity theory offers a different way to look at organizations, especially their strategic thinking, while it argues against traditional management interventions and control approaches. It suggests that organizations tend to self-organize themselves to a state where they regulate themselves (Mitleton-Kelly, 2003). Complex problems involve many parties with their own needs, values, and priorities. It is very hard to find a solution for complex problems because the problem changes every time it is tried to be solved, and there are no prior solutions because problems tend to be unique. It is also very hard to estimate how successful the attempt to solve the problem has been (Camillus, 2008). Many authors (Morin, 2014; Boulton et al. 2015) have raised the question of complexity management, agreeing that the apprehension of complex problems presupposes not remaining within a rational approach, benefits from other approaches such as art, religion, or philosophy, and hence, assumes the mobilization of various human capacities other than rational thought. However, the solutions provided so far can almost exclusively be considered a mere means of support in reducing stress and helping an individual find balance rather than a real response to dealing with complexity.

The challenges of the twenty-first century require humans' problem-solving competency and measures to assess this competency with test situations that represent the full range of complexity in a diversity of domains and the interaction between diverse environments and the person. The term competency emphasizes that various cognitive and non-cognitive resources may contribute to successful complex problem-solving, and it implies that competency may be changed through training (Funke et al., 2015). Training and transfer of different cognitive achievements has been a research topic that is highly relevant to real life.

There is a remarkable lack of research that would enable an understanding of complex problem-solving competency training, especially regarding the transfer of complex problem-solving skills to unknown problem situations. The question of how to increase an individual's complex problem-solving competency and change educational practices and policies to foster complex problem-solving remains unanswered (Kretzschmar & Süβ, 2015). HE Institutions still lack appropriate tools to teach future managers how to manage contemporary organizations, which are complex systems (Wu & Sekiguchi, 2023).

This paper presents an empirical case of a pioneering project (ProCESS Project) that devised an innovative training methodology that strategically uses Sensory, Emotional, and Spiritual (SES) skills, in addition to rational capacities, to address complex management cases. The methodology, rigorously tested over three years with students from four European universities, has demonstrated its potential to revolutionize management education and instilled confidence in its effectiveness.

The methodology is based on the Transformative Learning (TL) theory proposed by Mezirow (2003), which encompasses cognitive, emotional, spiritual, and embodied dimensions and has been successfully implemented in professional education (Enkhtur & Yamamoto, 2017). TL was recognized as a powerful tool for producing enlightened agents of change in higher education (Enkhtur & Yamamoto, 2017). Within the framework of the ProCESS project, students from four European universities representing four countries (France, Finland, Latvia, and Romania) were involved in a problem-based learning experience – student groups were presented with complex business cases prepared by companies from all four project countries. Students were trained to mobilize their SES skills by participating in workshops in SES skill development. Students' competencies were measured quantitatively before, during and after the training, and qualitative feedback was gathered in the form of reflective essays.

This paper's primary contribution is to underscore the significant value of sensorial, emotional, and spiritual (SES) training within HE institutions. This training enhances the competencies necessary for future managers to tackle and resolve complex problems effectively, strengthening their ability to manage complex environments.

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The paper is organized as follows. The Literature review builds on transformative learning theory and presents insights from research on soft skills, focusing on sensorial, emotional, and spiritual (SES) skills. We define awareness, self and other reflections, sense of life, and sense of community as SES competencies that can be trained and measured and are necessary for dealing with complex managerial problems. Further, the Methodology details the project context, study participants, and data collection. Results present the analysis, and the Discussion places research results in the context of transformative learning theory and the current research, considering limitations and future research. Conclusions highlight research relevance for educators and researchers.

## Literature Review

Given the complexity of contemporary organizations and their environment, the roles and tasks of managers are changing. Managers implement company strategies by assigning objectives, deploying processes, and enhancing individual skills. They mobilize teams through leadership and teamwork promotion while evaluating employee performance (Durand, 2020). Being a manager requires a wide range of skills that can be challenging to identify and measure (Mateo, 1997; Tarafdar, 2018) and even more difficult to teach. For HE institutions, there is a need to constantly update their pedagogies and teaching and learning (Ellis, 2022).

### *Transformative Learning Theory*

In recent years, HE researchers and practitioners have recommended using active instructional methods in higher education as they positively impact learning achievements (Kozanitis & Nenciovici, 2022). HE institutions have witnessed a recent expansion of experiential learning (Morris, 2016; Buzzelli & Asafo Adjei, 2023), problem-based learning and other methods that share commonalities with transformative learning theory in engaging learners in active, reflective processes that lead to deeper understanding and personal growth. Transformative learning is viewed as a pedagogical tool for the 21st century (Enkhtur & Yamamoto 2017).

Transformative learning (TL) theory, proposed by Jack Mezirow in the 1970s and further developed in subsequent decades, explores how individuals fundamentally transform their perspectives, beliefs, and assumptions through experience and critical reflection (Mezirow, 2012). TL has been characterized as a method of management education that encourages collaborative, responsible, and ethical ways to manage organizations (Closs & Antonello, 2011). It has also been explored as a pedagogical approach to advance change towards sustainability. At its core, transformative learning theory suggests that learning involves more than acquiring new information or skills; it involves a profound shift in one's worldview or understanding of oneself and the world. TL involves a process of critical reflection, assessment of alternative views, and a decision to change one's perspective, leading to more justified beliefs (Gravett, 2004).

According to Mezirow (2003), transformative learning has two fundamental focuses: instrumental and communicative. While instrumental learning focuses on task-oriented problem-solving, including identifying cause-effect relationships, communicative learning focuses on how people communicate their feelings, needs, and desires (Enkhtur & Yamamoto, 2017). While early work on TL focused on cognitive and rational processes that prompt critical reflection, later studies have incorporated the emotional, spiritual, and embodied dimensions of learning to embrace a more holistic approach (Dirkx, 2012; Tisdel, 2012).

Transformative learning experiences foster the development of various soft skills (Tisdell, 2012), which are widely recognized as necessary for a successful transition from higher education to the world of work, especially in today's dynamic and globalized environment (Pažur Aničić et al., 2023).

Soft skills, sometimes also called transversal or generic competencies, have been widely discussed in relation to managerial positions (Theurelle-Stein & Barth, 2017; Pažur Aničić et al., 2023). These competencies are crucial for effective stakeholder collaboration and relationship-building (Touloumakos, 2020). Companies

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often prioritize soft skills in recruiting managers, but there is no consensus on their definition (Hart, 1978). Moreover, no clear guidance on how specific soft skills should be trained exists.

The further literature review aims to identify and define SES (sensorial, emotional, and spiritual) skills, which, according to TL theory, are essential for managerial learning and are part of soft skills.

*Sensorial Skills*

The literature on sensorial skills identifies several themes related to their definition and training. These include sensory training in areas such as oenology or gaming (Höhl & Busch-Stockfisch, 2015; Schwiedrzik et al., 2009; Tempere et al., 2012), environmental sensitivity (; Aron & Aron, 1997; Evans & Rothbart, 2007; Pluess, 2015; Yano et al., 2020), and body/interoceptive awareness (Ginzburg et al., 2013; Mehling et al., 2012; Murphy et al., 2019; Treves et al., 2019). These studies have conceptualized sensorial skills or sensitivity as perceptual competencies, personality traits linked to psychopathology and developmental psychology, or as a means of mindfulness training. In this study, we have chosen to draw from the literature on body/interoceptive awareness and environmental sensitivity to define sensorial skills.

Body awareness refers to the extent of sensitivity and attentiveness to internal signals and sensations (Shields et al., 1989). It involves awareness of bodily processes and states, noticing subtle changes in response to internal and environmental conditions, and differentiating between various sensations (Price & Thompson, 2007; Shields et al., 1989). Attentiveness to somatic signals is the degree of focus and attention individuals have on their bodily sensations, enabling them to identify physiological fluctuations (Bekker et al., 2007; Hansell et al., 1991, cited in Ginzburg et al., 2013). Mehling and colleagues (2012) highlighted key dimensions of body awareness, including perceived body sensations, attention quality, body awareness attitude, and understanding of mind-body integration.

Interoceptive awareness, on the other hand, refers to the conscious perception of sensations from inside the body, such as heartbeat, respiration, satiety, and autonomic nervous system sensations related to emotions (Garfinkel et al., 2015; Mehling et al., 2012). Sensory processing sensitivity theory, which describes individual differences in sensitivity and responsivity to the environment, also influences sensory awareness (Aron & Aron, 1997; Evans & Rothbart, 2007; Aron et al., 2012; Homberg et al., 2016). Body awareness has been associated with mindfulness training, creativity, interpersonal social distance, and authentic behaviours (Collard & Walsh, 2008; Tophoff, 2006; Franz et al., 1976; Tsur et al., 2015).

The scientific literature suggests that sensory competence incorporates environmental sensitivity (Aron & Aron, 1997; Greven et al., 2019), interacting with interoceptive awareness (Garfinkel et al., 2015; Mehling et al., 2012) and body awareness (Shields et al., 1989; Ginzburg et al., 2013). This highlights the importance of operationalizing this competence as "awareness" necessary for solving complex problems of contemporary organizations. Solving complex problems requires involving the needs and desires of many parties and awareness, as managerial competence is highly needed.

*Emotional Skills*

The concept of 'emotional skills' aligns directly with the construct of emotional intelligence and emotional competence in psychology, albeit with differing terminologies. The literature offers various definitions of emotional intelligence (EI) (Matthews et al., 2004), ranging from a blend of competencies for adapting to challenging situations (Bar-On, 1997) to personality traits like integrity and character (Goleman, 1995) to cognitive ability for processing and effectively utilizing emotional information (Salovey & Mayer, 1990). These diverse definitions correspond to different theoretical frameworks and measurement approaches.

Despite associations of "intelligence" and "trait" with fixity, empirical evidence demonstrates the possibility and efficacy of EI training, with observed improvements post-intervention using both performance-based and self-rated measures (Kotsou et al., 2018).

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Despite the emergence of numerous models over the years (Gardner, 1983; Goleman, 1995; Bar-On, 1997; Petrides & Furnham, 2001), the model proposed by Mayer and Salovey (1997) remains the most widely accepted within the scientific community due to its precise definition and exclusion of personality traits that could confound assessments of emotional intelligence (Kanesan & Fauzan, 2019). According to Salovey and Mayer (1990), emotional intelligence entails the "ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions." (p. 189).

This model comprises four core capacities: (1) perceiving, appraising, and expressing emotions; (2) using emotions to facilitate thought; (3) understanding and analyzing emotions; and (4) reflexively regulating emotions. The first capacity involves identifying and differentiating emotions in oneself and others through various cues and experiences. Understanding and analyzing emotions enables interpreting emotional stimuli and informing subsequent actions. Emotionally facilitating thought is leveraging emotions to enhance cognitive processes like reasoning and problem-solving. Lastly, reflexive emotion regulation involves managing one's and others' emotions to prevent, reduce, enhance, or modify them (Mayer & Salovey, 1997). More specifically, self-regulation is defined as the deliberate process whereby individuals monitor and manage their thoughts, emotions, and behaviors to effectively attain desired goals, facilitating constructive responses to challenging situations (Grewal et al., 2006).

Given its relevance to managerial roles (Mikolajczak et al., 2012; Haag et al., 2021), integrating emotional intelligence into management becomes imperative. The scientific literature identifies key dimensions of emotional competence, such as self-regulation (Grewal et al., 2006) and regulation of others (Mayer & Salovey, 1997). This highlights the importance of operationalizing emotional competence as "*self-regulation*" and "*others regulation*" within the framework of contemporary business complexity.

*Spiritual Skills*

Spiritual practices in organizational settings have garnered attention for their potential impact on work quality and organizational performance (Krishnakumar & Neck, 2002; Malik & Tariq, 2016). Defined as the ability to address issues of meaning and value, individuals with high spiritual intelligence can empower peers and foster alignment towards collective goals (Karakas, 2009). Integrating spirituality into work enhances employee well-being and contributes to organizational sustainability (Fox et al., 2018). Concepts such as "meaning at work" emphasize the importance of aligning personal values with professional roles, highlighting the significance of spiritual integration in fostering engagement and satisfaction (Ashmos & Duchon, 2000; Karakas, 2009). Furthermore, Ashmos and Duchon (2000) underscore the significance of fostering a sense of community and interconnectedness within the workplace, emphasizing the importance of interpersonal relationships and meaningful connections among individuals (Heaphy & Dutton , 2008). The quality of these relationships impacts employee well-being and plays a pivotal role in shaping organizational dynamics. Referred to as the work community, this sense of belonging enhances employee satisfaction and organizational cohesion (Ashmos & Duchon, 2000). Integrating spirituality into the workplace fosters a sense of connectivity and community among organizational members. McMillan and Chavis (1986) delineate community components, including a sense of belonging, influence, integration, satisfaction of needs, and emotional bonds among members. Spiritual integration amplifies this sense of community by emphasizing connectivity and transcendent dimensions, contributing to a more comprehensive and inclusive understanding of community within the workplace.

Despite extensive scholarly attention in recent years, the definition and dimensions of spirituality remain subjects of ongoing debate among researchers (Koenig, 2008) since it shares conceptual space in psychology with related but distinct constructs such as religiousness, faith, and the sacred (Harris et al., 2018). While historically intertwined with religion (Ramezani et al., 2016; Koenig, 2008), contemporary discourse on spirituality has evolved beyond traditional religious frameworks (Ammerman, 2013; Koenig, 2008; Zinnbauer et al., 1999), leading to the emergence of the self-identification as "spiritual but not religious" (Fuller, 2001; Wixwat & Saucier, 2021). Empirical evidence has highlighted distinct correlations between spirituality and religiousness and various individual differences, supporting their conceptual differentiation (Saucier & Skrzypinska, 2006). Spirituality entails a personal quest for connection to transcendent aspects,

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while religiousness is linked with institutional affiliation and ritual (Harris et al., 2018). In the training context, spirituality is defined as a connection with oneself, others, the environment, and transcendent concerns (Harris et al., 2018). This inclusive view aligns with a broader understanding of spirituality, encompassing various dimensions beyond the religious sacred (Burkhart & Solari-Twadell, 2001).

The scientific literature indicates that spiritual competence encompasses understanding the meaning of life (Karakas, 2009) and the sense of community (Ashmos & Duchon, 2000). This underscores the significance of operationalizing this competence as a "*sense of life*" and "*sense of community*" within the framework of contemporary business complexity. Managers need those competencies to ensure sustainable solutions to complex business problems.

*Operationalizing SES Skills and Competencies*

In alignment with the study's literature review, SES skills are crucial for future managers (Theurelle-Stein & Barth, 2017). SES skills encompass sensory (Aron & Aron, 1997), emotional (Mayer & Salovey, 1997), and spiritual (Ashmos & Duchon, 2000) competences.

The definitions of competence are numerous and vary depending on the authors, countries, and cultures (Shen, 2014). In an organizational context, competence refers to the outcome of interactive processes mobilizing knowledge, technical skills, physical abilities, and behaviors (Theurelle-Stein & Barth, 2017). It arises from the mobilization of resources in didactic or non-didactic contexts (Chevallard & Ladage, 2008) and in the face of complex and novel tasks (Müller-Frommeyer et al., 2017).

Regarding sensory competencies, this study encompasses the following dimensions: interoceptive awareness (Garfinkel et al., 2015; Mehling et al., 2012) and bodily awareness (Shields et al., 1989; Ginzburg et al., 2013) linked to environmental sensitivity (Aron & Aron, 1997; Greven et al., 2019), forming a whole named "*awareness*" defined as the ability to perceive one's sensations and emotions, as well as the ability to detect others' feelings and emotions. Additionally, the operationalization of emotional competence entails differentiation between "*self-regulation*" (Grewal et al., 2006), defined as the ability to manage one's own emotions and cope with mood changes, and "*regulation of others*" (Mayer & Salovey, 1997), defined as the ability to manage and influence others' emotions while showing empathy. Thirdly, as spiritual competence (Ashmore & Duchon, 2000), a" *sense of life*" (Karakas, 2009) is defined as the ability to set life goals and create meaning in one's actions, connecting to a personal sense of purpose. It is perceived as something sacred, guiding decision-making. Lastly, a "*sense of community*" (Ashmos & Duchon, 2000) in is defined as the ability to foster collaboration and provide a supportive environment for expression. By integrating these dimensions with traditional leadership skills, this framework enhances managerial effectiveness in team management and decision-making and fosters positive work environments (Sardana, 2018; Barinua et al, 2022).

Based on the literature review and in the context of complexity theory, and in line with transformative learning theory, we hypothesize that:

*H: Sensorial, emotional and spiritual (SES) skills training has a positive effect on participants` competencies needed to solve complex problems – awareness, self-regulation, regulation of others and sense of community and sense of life.*

## Methodology

To show the value of sensorial, emotional and spiritual skills training for solving complex business problems, Gravett (2004), we use action research, which was suggested as viable for exploring transformative learning in higher education. To evaluate managerial competence, it is necessary to meet several conditions: 1) being faced with a new task so that the learner has never had to solve this problem in this particular situation; 2) being faced with a complex task to judiciously combine multiple factors and personal resources that will enable effective resolution of the task (Fischer & Neubert, 2015). Therefore, the ProCESS Project was very relevant because it encompasses both conditions mentioned above and includes critical reflection, which aligns with transformative learning theory.

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We employed a convergent mixed methods approach, including the simultaneous collection of quantitative and qualitative data (Creswell, 2014). The quantitative study measured the students' competency development using an online survey and a structured questionnaire, while the qualitative study explored the students' perceptions and experiences with training activities. Figure 1 outlines the research methodological framework, which is further described in detail.

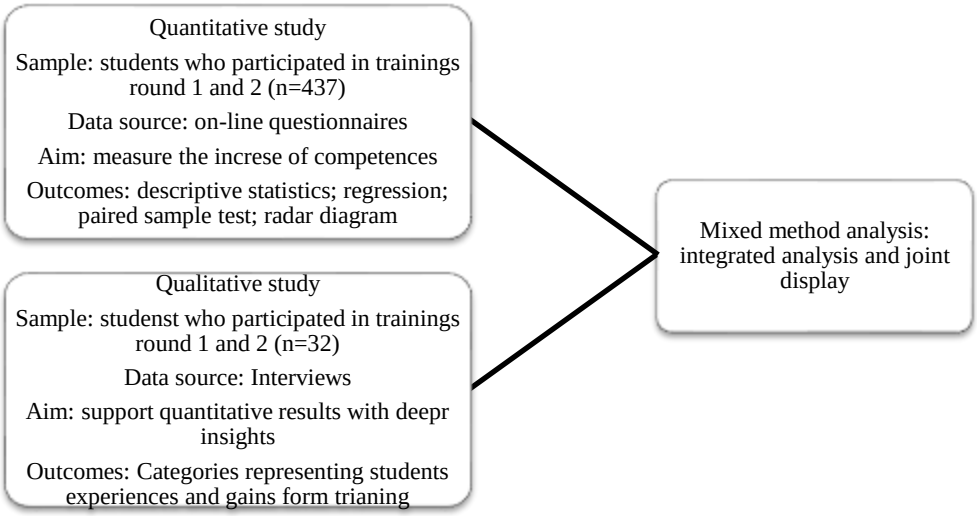


**Figure 1.** Research Methodological Framework

*Study Context*

The empirical site for the current study involved the SES skills workshops in the framework of the ProCESS Project and subsequent student involvement in solving new, complex business tasks. The ProCESS project perfectly complies with action research, delivering training and measuring results and competence evaluation requirements (Fischer & Neubert, 2015). The project lasted three years. The first year was devoted to experimentation with SES skills workshops and developing the methodology (Round 0). In contrast, the next two years were devoted to testing the methodology. This paper presents the results of the project's second and third years, labelled Rounds 1 and 2. At the beginning of each project round, student groups were presented with complex business cases prepared by companies from each project country. Their task was to prepare a solution for the case, working in groups of four. Students received SES skills training through participation in six workshops.

SES Skills training workshops use different approaches to mobilize the body, soul, and mind and articulate perception and comprehension. The following tools and mediations were used: *sounds, rhythms, music, movements, dance, drawings, paints, models, pottery, crafts, theatre, art, meditation, yoga, Lego Serious Play, etc.* The main common trends of these workshops were to 1) provide theoretical foundations of the training to connect mind and body; 2) give opportunities to experience unexpected activities and experiment with perceptions and sensations while keeping in mind to articulate them to real management situations; 3) connect all workshops to sensorial, emotional and spiritual experience and share experiences with respect and goodwill and critically reflect.

SES competencies trained during the workshops were measured using a structured survey before, during, and after the training workshops. After all the six SES skills workshops, interviews were used to capture and understand students´ embodied experiences and understand specific gains.

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*Population, Sample and Data Collection*

The study population consists of students who participated in the ProCESS project and represented four European Universities: JAMK (Jyväskylä University of Applied Sciences, Finland), RISEBA (RISEBA University of Applied Sciences, Latvia), TUCN (Technical University of Cluj-Napoca, Romania) and UCLy (Lion Catholic University, France). The students enrolled in the ProCESS project represented bachelor's and master's programs in management and engineering.

Based on the literature analysis, the survey was created to measure five SES competencies: awareness, self-regulation, other regulations, sense of community, and sense of life. Each competency was measured using four statements, and respondents were asked to express their opinions about themselves. A sample statement for awareness is 'I am able to perceive a change in my context'; for the sense of community - 'Working in cooperation with others is very meaningful to me'; an example of a self-regulation statement is 'I have control over my emotions'; for other regulation 'I know how to describe what others are feeling'; and sense of life was measured with statements like 'I know how to give myself a purpose or a reason in life'. The survey used a seven-point rating scale ranging from 1 = Strongly Disagree to 7 = Strongly Agree. Respondents' gender and the represented University were used as control variables.

Survey data were collected during Round 1 (September 2022 – January 2023) and Round 2 (September 2023 - January 2024). Students were asked to indicate their agreement or disagreement with survey statements four times: before workshops (T1), after the third workshop (T2), after the sixth workshop (T3) and after implementing the method and presenting the solution to the case problem (T4). Table 1 presents the number of responses per university in both rounds, which resulted in 437 total responses to the survey. This data comprised the raw data file used for testing the survey item's reliability. Data was analyzed using Jamovi and SPSS software.

**Table 1.** Number of Survey Responses in Two Rounds

| Represented country | Finland | Latvia | Romania | France | Total |
|---|---|---|---|---|---|
| **Round 1** | 50 | 60 | 63 | 56 | 229 |
| **Round 2** | 58 | 57 | 64 | 29 | 208 |
| **Total** | 108 | 117 | 127 | 85 | 437 |

At the end of each round, four students from one country were interviewed. In this study, interviews for rounds 2 and 3 are included. This resulted in 32 interviews of 30–45 minutes each, a total of 1280 minutes of interviews. All interviews were audio-recorded, and two researchers analyzed them using the thematic analysis approach, looking for categories representing competencies trained.

*Results of the Quantitative Analysis*

Table 2 presents the descriptive statistics and reliability analysis. Cronbach's alpha was used to test variables for internal consistency and reliability. The values range between 0.67 and 0.87, showing acceptable internal reliability (Tavakol & Dennick, 2011). Descriptive statistics show that all respondents assigned the highest mean value to the community. SESS workshops have increased the participants' ability to foster collaboration and provide a supportive environment for expression, followed by awareness and other regulations. However, further analysis was performed to see the dynamics of the impact of SES skills workshops (see Table 3 and Figure 2).

**Table 2.** Data Reliability and Descriptive Statistics (N=437)

| Competency | No of statements | Cronbach's alpha | Mean | SD |
|---|---|---|---|---|
| Awareness | 4 | 0.875 | 5.63 | 1.070 |
| Sense of community | 4 | 0.669 | 5.75 | 0.763 |
| Self-regulation | 4 | 0.843 | 5.30 | 1.010 |

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| | | | | |
|---|---|---|---|---|
| Other regulation | 4 | 0.746 | 5.63 | 0.926 |
| Sens of life | 4 | 0.714 | 5.30 | 0.857 |

This quantitative study aimed to examine whether the six SES skills workshops have improved participants' competencies. We used paired sample tests to identify if there are differences between respondents' answers before and after – to show the increase of competencies after SESS workshops compared to the level at T1 before the workshops. Demographics of the sample were explored to understand the nature of the students who participated in the workshops. In total, 122 students participated in the survey at T1; 33% were male and 67% female. 30% were from JAMK (Jyväskylä University of Applied Sciences, Finland), 26% from TUCN (Technical University of Cluj-Napoca, Romania), 25% from RISEBA (RISEBA University of Applied Sciences, Latvia), and 19% from UCLy (Lion Catholic University, France).

However, some respondents did not complete the survey all four times. Data was cleaned, and respondents' answers aligned at T1 and T2, T3, and T4. The subset that provided the before-and-after comparison sample included 103 students who participated in the workshops during Rounds 1 and 2 of the project. Table 3 presents the mean values and standard deviation of the five SES competencies measured at all four time periods, and the difference between T4 and T1 shows the mean increase.

**Table 3.** SES Competencies at Four Times of Measurement and Increase During Training (N=103)

| | **Awareness** | | **Sens of life** | | **Sense of community** | | **Self-regulation** | | **Others regulation** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| **T1** | 5.65 | 0.80 | 5.50 | 1.10 | 5.46 | 0.99 | 5.09 | 1.09 | 5.10 | 0.90 |
| **T2** | 5.75 | 0.67 | 5.56 | 1.09 | 5.70 | 0.83 | 5.24 | 0.91 | 5.20 | 0.81 |
| **T3** | 5.93 | 0.67 | 5.67 | 0.96 | 5.75 | 0.82 | 5.43 | 0.91 | 5.48 | 0.77 |
| **T4** | 5.88 | 0.73 | 5.72 | 1.02 | 5.62 | 1.04 | 5.36 | 0.97 | 5.44 | 0.79 |
| **T4-T1** | 0.30 | 0.82 | 0.18 | 0.78 | 0.17 | 0.93 | 0.30 | 1.07 | 0.38 | 0.89 |

Results show that the highest increase was for other regulation (Mean = 0.38) and self-regulation (M = 0.3); however, high standard deviations show variety. The sense of community and sense of life appeared to be improved less.

Regression with binary variables was performed to identify if the control variables impacted the competency increase (see Table 4, standardized estimates β and standard errors SE in parenthesis).

**Table 4.** Impact of Control Variables on the Increase of Competencies Scores

| **Predictor** | **Awareness** | **Sens of life** | **Sense of community** | **Self-regulation** | **Other regulation** |
|---|---|---|---|---|---|
| | **β (SE)** | **β (SE)** | **β (SE)** | **β (SE)** | **β (SE)** |
| Intercept [a] | 0.440* (0.203) | -0.103 (0.191) | -0.226 (0.223) | -0.413 (0.254) | -0.101 (0.213) |
| Gender | | | | | |
| Female – Male | 0.054 (0.177) | 0.325 (0.167) | 0.326 (0.194) | 0.402 (0.221) | 0.250 (0.185) |
| University | | | | | |
| RISEBA – JAMK | -0.137 (0.224) | 0.435 (0.211) | 0.616* (0.246) | 0.786** (0.280) | 0.796** (0.234) |
| TUCN – JAMK | -0.268 (0.220) | 0.076 (0.207) | 0.093 0.242 | 0.388 (0.275) | 0.279 (0.230) |
| UCLy – JAMK | -0.592 (0.267) | -0.106 (0.252) | -0.042 0.294 | 0.268 (0.335) | 0.339 (0.280) |
| Adjusted $R^2$ | 0.003 | 0.032 | 0.068 | 0.094 | 0.073 |

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Note: Standardized estimates and standard errors in parenthesis; * p < .05, ** p < .01

Results show that the participants' gender does not significantly impact the increase of the SES competencies. The impact of the universities represented by the participants was analyzed using Finland as a baseline (the university with the highest number of respondents). There was a small positive impact on the sense of community, self-regulation, and other regulations for Lavian respondents till this accounted only for 7-9% of the variability, allowing us to conclude that the effect of the control variables is minimal.

The nonparametric paired sample test is used to identify if the increase in SES competencies is statistically significant and could be attributed to the SESS training. A non-parametric test was chosen since the normality of the data distribution was not identified. Thus, the Wilcoxon W test was used, a nonparametric alternative to the paired sample t-test. The results in Table 5 show the increase of measures at T2, T3 and T4 compared with the T1.

**Table 5.** Paired Sample Test Results

| Competency | T1 - T2 | | T1 - T3 | | | T1 - T4 | | |
|---|---|---|---|---|---|---|---|---|
| | Statistic | p-value | Statistic | p-value | Effect size r | Statistic | p-value | Effect size r |
| Awareness | 1221 | 0.206 | 1038 | < .001 | -0.493 | 896 | < .001 | -0.433 |
| Sense of Life | 1098 | 0.643 | 1651 | 0.028 | -0.26 | 1026 | 0.015 | -0.317 |
| Sense of community | 975 | 0.003 | 1241 | 0.001 | -0.394 | 1328 | 0.084 | -0.22 |
| Self-regulation | 1205 | 0.091 | 1288 | < .001 | -0.435 | 1465 | 0.006 | -0.33 |
| Other regulation | 1111 | 0.251 | 965 | < .001 | -0.529 | 935 | < .001 | -0.488 |

The Wilcoxon signed-rank test shows whether the mean values of the two dependent groups differ significantly. It is evident that at T2, only a sense of community has increased.

At T3, all SES competencies show a statistically significant increase. The effect size r indicates how large the observed effect is compared to the random noise. Cohen (1988) recommends interpreting it as $r = 0.10$, $r = 0.30$, and $r = 0.50$ small, medium, and large in magnitude, respectively. However, Gignac and Szodorai (2016) conclude that Cohen's guidelines are too exigent and recommended considering correlations of 0.10, 0.20, and 0.30 as relatively small, typical, and relatively large. Effect size r in our sample ranges from 0.26 for a sense of life to 0.53 for other regulations (see Table 5 for T1-T3). Therefore, we conclude that SESS training had a small to moderate effect on the sense of life and a relatively large effect on awareness, self-regulation, and other regulation.

At T4, the sense of community has dropped slightly and shows no statistically significant impact. This is explained by the fact that at T3, SES competencies are measured after the final training, whereas between T3 and T4, students worked to produce the solutions. Figure 2 visualizes the dynamics of the development of SES competencies.

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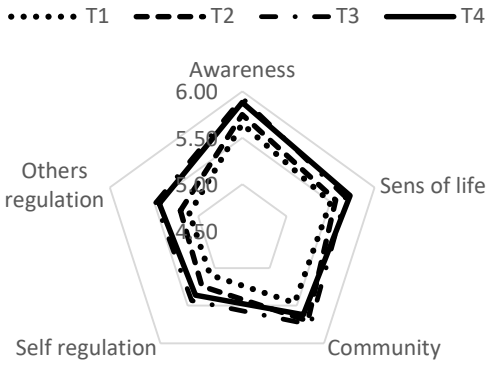


**Figure 2.** Dynamics of the Development of SES Competencies

*Results of Qualitative Data Analysis and Integration*

The aim of the qualitative part of the study was to support and supplement the quantitative results. Our mixed methods approach integrates the results from the interviews with those of quantitative analysis so that they become interdependent and help to reach a common understanding (Bazeley, 2024). Joint displays have a growing presence in the literature for representing mixed methods findings (Fetters & Tajima, 2022). Table 6 shows the joint display of integration of the key findings from quantitative and qualitative studies.

Qualitative data conforms to the results of quantitative analysis and even extends them. Learning through emotional and sensorial skills was essential for self and other regulation. As pointed out by participants during the interview:

*"I learnt how important it is to recognize your feelings and emotions and moods and how my feelings can affect people around me, how important it is to understand other people's emotions as well, and showing empathy, how that be the helpful tool to make strong teams, and how being empathetic with others can make safe and creative space for working when we can trust each other and we can trust that people around us are interested in us, and we can be the real version of ourselves".*

It also contributes to the sense of community, as stated by a student:

*"When you feel that you did a good job and did much work in this, you feel like you are on the top, and you can't be stopped… we were flying… all together. Not only me, we all…"*

Awareness, a sense of community, self-regulation, other`s regulation, and a sense of life help individuals to critically examine and potentially transform their perspectives, beliefs, and assumptions. Sensorial, emotional, and spiritual skills training can give managers the competencies to manage complexity. As stated by a student:

*"It brought me the insights I never saw in my life... I never thought it would be this helpful if we go deep with these kinds of concepts ".*

This type of learning has transformed their personalities, as expressed in the following quote:

*"I noticed more the things that I value and want to do, where I want to be, and the journey that I should be having or trying to have".*

The additional insights from the qualitative analysis identified additional gains related to self-development and personal transformation (see Table 6).

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**Table 6.** Joint Display

| Compe-tences | Quantitative results | Qualitative results and supporting quotes | Meta inferences |
|---|---|---|---|
| Awareness | A statistically *significant increase from T1 to T3* | Students understood the value of emotions and noted that information about a given context can be acquired through various channels, such as feeling, hearing, seeing, and listening. Students learned the value of the senses and the present moment to increase their awareness about themselves and the environment. | Confirmed. |
| | (*r* = -0.493***) effect size: large. | *"I realized that everything changes if you're just enjoying the present moment and feel connected to the people and the surroundings. Just observe and be there with your mind. It's a different perspective… when you're looking at things through the lens of the present moment."* | |
| Self-regulation | A statistically significant increase from T1 to T3, | Students gained the ability to manage their feelings and use them. They learned to be braver, share their feelings, and use emotions as action indicators. | Confirmed. |
| | (r = -0.435***) effect size: large. | *"I learned about my emotions. I learned how to speak up when I think of something... I learned to speak what's on my mind and not be so shy..."* | |
| Regulation of others | A statistically significant increase from T1 to T3, | Students noted that their empathy towards others increased and that they felt comfortable being empathetic. They experienced how sharing their feelings and emotions induces the same in others. They experienced a reciprocal effect. | Confirmed/expanded. |
| | (r = -0.529***) effect size: large. | *"I think that understanding that we are in the same boat, that we are in the same situation, and that we all have the same emotions in the end or the beginning means that this doesn't feel very easy. It was encouraging to know that I was not alone in a difficult situation."* | Other regulations serve as encouragement for self-development |

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| | | | |
|---|---|---|---|
| Sense of community. | A statistically significant increase from T1 to T3, | Students shared examples of how their collaboration and mutual support were fostered. They could see the different stakeholders of the problem, and they understood that the proposed solutions should benefit the community. | Confirmed/expanded. |
| | (r = -0.394***) effect size: medium | *"When you feel connected to the people and the surroundings, and you just observe and be there with your mind, everything changes. It is a different perspective…"* | Developing a sense of community was noted, but this also changed the perspective – students could see the world as one. Their proposed solution to the problem took into consideration the needs of many… |
| Sense of life | A statistically significant increase from T1 to T3, | Students described how they felt the need to develop their personal goals and sense of life as a whole; they could see the purpose bigger than themselves. Workshops induced a feeling of wholeness. | Confirmed/expanded. |
| | (r = -0.26***) effect size: medium | *"I noticed more the things that I value and want to do, where I want to be, and the journey that I should be having or trying to have ..."* | Has the potential for personal transformation. |

## Conclusion

The present study aimed to show the value of sensorial, emotional, and spiritual (SES) training at HE institutions to increase the complex problem-solving competencies necessary for future managers. This study integrated quantitative and qualitative findings on the students' competence development. Our results show a significant increase in SES competencies after students were involved in the SESS workshops. We approved our hypothesis that Sensory, emotional, and spiritual (SES) skills training positively affects participants` competencies to solve complex problems: awareness, self-regulation, regulation of others, a sense of community and a sense of life.

Interestingly, the increase in competencies after the first three training workshops was statistically significant only for the *sense of community* but not significant for the other four competencies. Evidently, a sense of community, defined as fostering collaboration and providing a supportive environment for expression (Ashmore & Duchon, 2000), is easier to develop by mobilizing sensorial, emotional, and spiritual skills. According to Barinua et al. (2022) and Sardana (2018), this managerial competency enhances team management and decision-making effectiveness and fosters positive work environments. Similarly, Rae (2022) indicated that conversations and relationships contribute to creativity.

Our results also conclude that three workshops are insufficient to develop sensorial, emotional, and spiritual skills-related competencies. Six workshops appeared to significantly impact the development of *awareness, self and other reflection, and sense of life*. The measure showing the impact of SES skills training on improving participants' competencies is T3 since this was a measure after the sixth (final) SES skills workshop. As seen in Figure 1, the competency development occurred between T2 and T3.

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Surprisingly, no increase occurred at T4, if compared with T3, since between T3 and T4, students worked on solving the case problem. Between T3 and T4, students worked without the trainers' supervision. They were involved in teamwork and applying their trained skills. They prepared their solution for the complex business case through a presentation and report and wrote self-reflections related to their workshop experiences. According to researchers, competency development should continue. As Müller-Frommeyer et al. (2017) pointed out, competency development happens in the face of complex and novel tasks and in didactic or non-didactic contexts (Chevallard & Ladage, 2008). We explain this because experiencing SES skills development workshops is still a new practice in higher education; sometimes, it surprises students. Some of them question the value of such activities. Substantial theoretical justification of the value of such training is needed in line with the practical implementation. The theoretical justification should be presented to students, and the underlying mechanisms should be explained.

Tasks and workshops developed in the ProCESS methodology align with the latter developments of transformational learning theory since they incorporate the emotional, spiritual, and embodied dimensions of learning (Dirkx, 2012; Tisdel, 2012).

The ProCESS method aligns with the humanistic approach advocated by Hooley and colleagues (2023), as it develops students' personal growth and ensures self-discovery and flourishing. Mezirow (2000) addresses various aspects of transformative learning, including the role of awareness, sense of community, and lifelong competencies in facilitating transformative learning experiences. Our results empirically show the value of transformative learning and sensorial, emotional, and spiritual skills training for future managers.

Organizations encounter complex problems when they face continuous change or unforeseen challenges. This can happen anywhere: in strategic development, in product management, in design, etc. (Camillus, 2008). Complexity brings opportunities and challenges, usually caused by how companies attempt to respond to complexity (Morieux, 2011). However, complexity offers tremendous opportunities for companies that can adequately address it (Czinki & Hentschel, 2016). Our results show that the ability to sense, feel and respond sustainably is crucial when faced with complexity. Effective management nowadays is not based solely on rationality (Certo et al., 2008).

Our results have several implications for HEs pedagogies and align with transformative learning theory. Our results show that sensorial, emotional, and spiritual (SES) training enhances the competencies necessary for future managers to tackle and resolve complex problems. Mezirow (20023) states that an instrumental focus of transformative learning theory is task-orientated; it includes identifying cause-effect relationships. Currently, HEs focus more on developing this approach in learners. TLT`s other focus, communicative learning, focuses on how people communicate their feelings, needs, and desires (Enkhtur & Yamamoto, 2017). Moreover, later studies on TLT have incorporated the emotional, spiritual, and embodied dimensions of learning to embrace a more holistic approach (Dirkx, 2012; Tisdel, 2012). Our investigation presents Sensorial, Emotional, and Spiritual skills as a transformative subset of soft skills, advocating for the need for SES skills training in HEs. SES skills training can potentially increase students` competencies, such as awareness, self-regulation, regulation of others, a sense of community and a sense of life. These competencies thus strengthen their ability to manage complex environments and suggest a potential for positive change. Training SES skills is more straightforward than training soft skills. It represents an active learning approach, which learners and faculty members have highly evaluated as providing a better apprenticeship (Copridge et al., 2021). Such embodied training approaches, such as sounds, rhythms and music, movements and dance, drawings, paintings and models, theatre, art, meditation and yoga, represent innovative approaches to pedagogies in HEs and appear helpful in training students to manage complex organizations.

## Conclusions

As higher education institutions look to educate students who have the skills and knowledge necessary to deal with complexity and manage in ways that allow for innovative solutions to organizational challenges, new approaches to educational efforts are needed. For centuries, universities, in their teaching and learning

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processes, have implemented tools of traditional logic and rationality. However, these tools are limited. Results of the ProCESS project and this research allow us to conclude that we must banish the supremacy of rationality in education and (re)introduce formal training in sensorial, emotional and spiritual (SES) skills.

In complex environments, managers need sensorial skills to gather information from the environment, emotional skills to adapt to changing conditions, and spiritual skills to provide a sense of purpose and direction. We call these skills SES (sensorial, emotional, spiritual) skills and position them as a subset of soft skills. We argue that the term 'soft skills' is too generic and does not indicate how to train them. In comparison, SES skills are easier to understand, are closely related to specific training methodologies, and represent transformative learning. Higher education should include training in those skills in the curriculum that align with creativity and analytical thinking. The benefits of students' emotional, sensorial and spiritual skills training include increased awareness, a sense of community, better self and other reflection and a sense of life. If coupled with rational data and theory-based thinking, typically taught in higher education institutions, training in SES skills provides future managers with the necessary competencies to manage contemporary complexity.

This study's limitations include the sample size, sample population, subjectivity of perception of training and responses, and geographical limitations. Future research may address these limitations by conducting similar studies with more participants and measuring the outcomes after a more extended period. Finally, combining students' perspectives with those of teachers and managers would enhance the findings.

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