

EMBODIED COGNITION AND MANAGEMENT LEARNING: THE NEED FOR SENSORIAL, EMOTIONAL, AND SPIRITUAL SKILLS FOR SOLVING COMPLEX MANAGERIAL PROBLEMS

Inese Sluka, Iveta Ludviga

RISEBA University of Applied Sciences (LATVIA)

Abstract

For centuries universities in their teaching and learning processes have implemented tools of traditional logic and rationality. Only recently management learning scholarship has acknowledged that learning also relates to embodied practices. The theory of embodied cognition argues that several factors such as the body and the environment play a role in the development of one's cognitive capacities. While scholarship increasingly recognizes the importance of embodiment in management learning, this field is not only relatively new but still undeveloped and we lack empirical research on the outcomes of such practices.

This paper aims to present and theoretically justify the ProCESS method and analyse its outcomes. We analyse and explore how the embodied practices implemented in the university settings were perceived by the business students and have influenced their cognitive processes. We present a methodology to deal with complex management problems through alternating sequences of mobilisation of Sensory, Emotional, and Spiritual (SES) intelligence, in addition to rational capacities and the outcomes of the implementation of this methodology.

Through an empirical case of six SES skills (SESS) workshops, we explore how embodied practices ground critical thinking skills development of business students which they apply to solve complex management cases. The theoretical ground for the SESS methodology is embodied cognition, coupled with the design thinking approach and the Theory U. During the six-workshop program, students engaged in mediation, breathing techniques, movement, and painting, to understand their corporeal and mental activity, their emotions, and their emerging conceptions of creativity. The pedagogical approach adopted was intended to challenge conventional classroom settings, by foregrounding bodily awareness, and not focusing solely on an analytical approach.

The data used in our analysis are based on reflection involving student descriptions of their ongoing experience with the workshops and work with the cases. Students were asked to reflect on the following two questions: 1) what were your experiences about yourself during the SESS workshops? 2) what is the value of SESS skills for the leaders in contemporary organizations? As an analytical technique, we coded the texts through an open, inductive coding scheme using NVIVO software

The results show that SESS workshops at the personal level develop students' ability to think wide and at the same time to keep focused meaning that the methodology keeps them relaxed and at the same time fully concentrated on the problem. This type of training could allow business leaders to perceive problems differently and look for non-standard solutions. Students characterised SES skills as 'inner knowing' which is very much needed in the contemporary fast pacing world and at the same time as providing inner peace, as able to give simple answers that are not visible in a complex business world where a rational mind is traditionally engaged. The training was described as an ideal combination for a manager enabling them to combine practical knowledge with experience and the ability to intuitively and alternatively find the best possible solutions for business development.

We conclude that the SESS method increases students' problem-solving capacities and provides better results than a simple analytical approach. We discuss the implications of embodiment techniques for developing management learning.

Keywords: Embodied cognition, Design thinking, Theory U, Sensorial, emotional, spiritual intelligence.

1 INTRODUCTION

The current times of fundamental uncertainty push managers and organizations to create new knowledge, engage in novel behaviours, and build innovative solutions that did not previously exist [1]. Higher educational institutions dedicate a significant proportion of business programmes to developing

students' creativity and innovation skills. However, for centuries universities in their teaching and learning processes have implemented tools of traditional logic and rationality. Only recently management learning scholarship has acknowledged that learning also relates to embodied practices [2], [3]. Moreover, the nature of cognition is being re-considered as being a situated activity which also relates to the body [4].

The theory of embodied cognition studies the role the body plays in cognition and argues that several factors such as the body and the environment play a role in the development of one's cognitive capacities [5], [6].

Embodied cognition theory has gained increasing prominence in recent decades [7] and become popular among researchers who study the mechanics of thinking, creativity, and meaning-making because it views these processes as *deeply rooted in the body's experience with surrounding environments* [8]. Malinin argues that creativity is based on embodied, embedded, enactive, and extended cognition [9].

According to the theory of embodied cognition, it is the "Mind-Body complex" that shapes thinking and [10]. The theory claims that human cognition is influenced by the experiences of the body in a physical world, and that, in practice, the brain is not just connected to the body, but the body activities also influence the brain [11]. For example, professor of neurology and neurosurgery Wilder Penfield (1891 – 1976) - mapped the functions of various regions of the brain and discovered that 70-80% of the human brain is related to hands and this link is twofold [12]. We all know that working with hands develops the human brain as playing piano boosts mathematical capabilities.

While scholarship increasingly recognizes the importance of embodiment in management learning, this field is not only relatively new but still undeveloped and we lack empirical research on the outcomes of such practices [2].

In this paper, our main aim is twofold: 1) to present and theoretically justify the ProCESS method and 2) analyse its outcomes. The article is structured as follows. First, we present a method to deal with complex management problems through alternating sequences of mobilisation of Sensory, Emotional, and Spiritual (SES) intelligence, in addition to rational capacities - the ProCESS method. Second, we describe the research aimed to identify the outcomes of the implementation of this methodology - we explore how the embodied practices implemented in the university settings to boost students' creative problem-solving skills were perceived by the business students and have influenced their cognitive processes. Finally, we discuss the results in line with embodiment theory and its implications for pedagogies.

2 THEORETICAL FOUNDATION OF THE PROCESS METHOD

This study was carried out in the framework of the ProCESS Project. ProCESS Project aims to develop an original and innovative methodology to deal with complex management cases through alternating sequences of mobilization of Sensory, Emotional, and Spiritual (SES) intelligence, in addition to rational capacities. The theoretical ground for the ProCESS method is embodied cognition, coupled with the design thinking approach and the Theory U. Further we briefly describe the theoretical basis and present the method.

2.1 Design thinking

Design thinking is a problem-solving method offered to use in a complex system [13]. There are several approaches to structure the design thinking process. Müller-Roterberg proposes six process steps: understanding, observing, defining problems, finding ideas, developing prototypes, and testing [14]. Other authors propose three steps: Immersion, ideation, and prototyping [15], [13]. Most common is the 5-step process which includes empathising, defining, ideating, prototyping, and testing (in this paper we use this approach, see Table 1).

Liedtka and Ogilvie ask if an average manager can be transformed into a design thinker [16, p. 6]? Tim Brown describes design thinking as a systematic approach to problem-solving and concludes that it can be taught to managers [13]. Based on 5-year experience with design thinking classes, we argue that yes, but to do so, specific skills are needed. The design thinking method presents a lot of practically applicable tools which can help managers to use this type of thinking [16]. Still, it does not include any training for specific skills.

According to design thinking, the reality is constructed by the people living it, and decisions are seen as driven by emotion more than logic [17]. Before starting to develop a solution, DT includes customer

discovery, immersion, and sensemaking [18]. To use design thinking, managers need skills that will allow them to emphasise with the user - sense the users` feelings and emotions, moreover, they need to be able to look wider – not only at a single user but also at his/her interaction with a wider environment, even universe. To look holistically at complex problems, managers need to be able to look into the future, they need also spiritual abilities and skills. These skills in combination we call SES skills and this abbreviation include sensorial, emotional, and spiritual skills and abilities.

Based on the theory of embodied cognition we propose using the Theory U approach to train these types of skills because it links current problems with the future and thus presents a holistic approach [19].

2.2 Theory U

Theory U was developed at the Massachusetts Institute of Technology (MIT) and the Presencing Institute as a tool for solving wicked problems [20]. The essence of Theory U is that by moving through the "U" process the user learns to connect to the essential 'Self' - go through the process of 'presencing' which means 'sensing' + 'presence'. According to Otto Scharmer, 'presencing' is a journey with five movements: 'connecting us to the world that is outside; connecting us to the world that emerges from within; bringing forth the new into the world [21].

This theory has gained popularity recently and a worldwide movement supporting it has emerged. Still, it is also criticised for not matching widely accepted academic standards [22]. In its simplest form, Theory U can be broken down into three stages: Observe, Reflect, and Act, and these steps are somewhat similar to the design thinking, only stronger focus is put on observing. 'Presencing' experience allows the user to open of mind, heart, and will [23].

As stated by William O'Brien, former CEO of Hanover Insurance Company, "Success of an intervention depends on the interior condition of the intervenor" [23]. Theory U presents a very useful approach to developing this inner state. Design Thinking tools mostly assume an outward perspective - seeking to empathize with the user. However, the theory of embodied cognition leads to the idea that there is a need to step back and reflect on the 'inner condition of the intervenor' as well as reflect for a moment within the organization and even wider social context. Thus, adding the Theory U perspective to the design thinking structural path adds the missing moment: emotions, sensorial experiences, and mindfulness and spirituality. These skills become important, because, as indicated by [1], in current times of fundamental uncertainty managerial decision-makers must be able to make sense of what is happening at cognitive as well as emotional and sensorial levels to create applicable solutions to wicked problems.

Table 1 presents the cycle of workshops created based on Design Thinking and Theory U leading students through the downloading phase to the performance phase.

Table 1: Linking Design thinking, Theory U, SESS workshops, and skill development

Steps	Design thinking	Theory U	SESS workshops	Skills (intelligence) trained
1	-	-	Pre-workshop task: understanding the analytical framework of the situation	
2	-	Seeing with an open mind: stop, listen, and follow the low of life	W1: Breathing and music therapy, relaxation techniques	Sensorial; spiritual
3	Emphasising – a deep understanding of the user	Sensing with an open heart: understanding the system from the inside	W2: Meditation and the journey of artful thinking wrote an ode for it.	Spiritual; emotional
4	Defining – transforming the visible problem into a real problem	Presencing: presence with an open will - connect with the inner source in silence	W3: Mindfulness and neurography	Sensorial; spiritual
5	Ideating	Crystallizing of vision and intention	W4: Dance movements; Lego® Serious play® method	Emotional; sensorial
6	Prototyping	Prototyping = create living microsystems of the future in the unity of hand, heart, and mind	W5: Musical theatre and improvisation were the	Emotional; sensorial
7	Testing		W6: Intuitive painting	Emotional; sensorial

2 METHODOLOGY

This study was carried out in the framework of the ProCESS Project. ProCESS Project aims to develop an original and innovative methodology to deal with complex management cases through alternating sequences of mobilization of Sensory, Emotional, and Spiritual (SES) intelligence, in addition to rational capacities.

During the Project's first year were developed a set of 4 complex management case studies and proposed to the students for solving. The tasks for student groups were the following: creating a strategy for collaborating and communicating between health professionals in France; identifying the solutions to improve the company's digital efficiency, particularly the digitization of sales in Romania; developing solutions for business growth in communications and media corporation in Finland; and find a way to revitalize the company values in Latvia.

These case studies were proposed for solving to 16 students which were divided into 4 students per team. All the students were from bachelor's or master's programmes and were assigned to teams based on their interests. In the autumn semester of 2021, students get introduced to the case study and, in cooperation with the company coaches and university academic coach, developed a solution.

6 workshops were organised for the students in parallel with case study analysis. The association of the operation of the right and left hemispheres of the brain with rationality, logic as well as creativeness, and creativity were explained during the 1st workshop. The students learned the fundamental principles and methods of breathing and music therapy, and also relaxation techniques.

During the 2nd workshop, the students got familiar with the meditation technique as well as the design thinking approach and process. The students went on a journey of artful thinking by viewing pictures from various points of view and paying attention to details, and moods. When familiarising themselves with the artful thinking palette, the students created a picture for the situation they had to deal with as well as wrote an ode for it.

The 3rd workshop was devoted to the techniques of mindfulness. The session started with a walking meditation practice to exercise mindfulness. After that, the students used neurographics that helped them come into a deeper contact with themselves and the problem to deal with, set free their mind and body, so that, thereafter, each team would be able to work out initial solutions.

The students started the 4th workshop with the use of dance movements to relax. After it, they used the Lego® Serious play® method to build responses to the set issues using Lego bricks to allow for assessment of the complexity of the situation and the perspectives of various parties involved.

The 5th workshop was a musical theatrical improvisation where the students used the musical instrument they had created to imitate the emotions, feelings, and movements of the people involved in the situation they had to deal with. The members of the other teams were observing and giving their feedback, thus identifying new perspectives for the development of a solution from the perspective of the parties involved.

The 6th workshop was intuitive painting there the students individually drew a solution to a current situation and then combined the individual drawings into a single solution by supplementing or transforming it (see Table 1).

A qualitative research study was conducted to evaluate the practical benefits uses of the created innovative ProCESS methodology and its application in dealing with complex business issues. Each student prepared a reflective essay regarding their experience during the workshops and their use for dealing with the situation.

Students were asked to reflect on the following two questions: 1) what were your experiences about yourself during the SESS workshops? 2) what is the value of SES skills for the leaders in contemporary organizations?

The results analysis was conducted using NVIVO software word frequency query, which allows looking for exact words, or broadening to find the most frequently occurring concepts. Two criteria were identified in the selection of NVIVO word frequency query: 1) the number of letters in the word is not less than five; 2) exact matches were provided in the 3rd level which includes words with the same stem and synonyms (words with a very close meaning).

3 RESULTS

This section describes the experience of the students and the benefits of the SESS workshops as well as how SES Skills can be used for future leaders in contemporary organisations.

3.1 New experiences during SESS workshops

The 5 words most frequently mentioned in the reflective essays of the students in response to the question “What were your experiences about yourself during the SESS workshops?” are given in Table 2.

Table 2. Most frequently used words exploring experience during SESS workshops.

Word	Length	Count	Weighted percentage	Similar words
Workshops	9	36	3.80	Workshop, workshops
Using	5	32	2.58	Applied, apply, enjoyed, exercises, habit, habits, practical, practice, practices, purpose, usage, useful, using
Problem	7	17	1.79	Problem, problems, trouble
Thinking	8	21	1.64	Believe, considered, intelligence, think, thinking, thoughts
Focus	5	15	1.42	Concentrated, concentration, direct, direction, focus, focusing

SESS **Workshops** are the largest benefit in the process of case study analysis due to being among the most frequently mentioned words and the majority of workshop benefit descriptions in the essays.

The students indicate that the SESS workshops have helped them “look at things from a different point of view” and that, after them, they “have developed understanding regarding the application of the U theory in the business environment”. The first three workshops were the most difficult because students were not able to relax and keep calm in their minds. They tried to find rational solutions just in order not to step out of their comfort zone. “I was looking at the first three workshops with a high degree of scepticism and resistance”, but they “helped me notice my inner world, become aware of the feelings and acquire peace of mind”. The last three workshops were more realistic and practical. Overall, the workshops demonstrated how much of “logically and rationally thinking individuals we are in business and management environments, despite believing that we were sufficiently creative”.

The workshops helped to acquire how to meditate, relax, pay heed, stop, observe, listen, feel, breathe, and express affirmations. When you are relaxed, the solutions come themselves and you don't need to find a solution to a problem actively at once. The workshops helped students to understand how “important it is to look at the details and the entire picture in general because everything matters” in the event of complex business problems.

Although this was the first experience of using such practices for many of the respondents, they indicate that they will use them daily, but that they cannot see opportunities for transferring everything to the business environment. Some of the participants indicate that they have realised a deeper meaning of some of the practices they had used a little previously.

Continuing the previous thought, the second most frequently used word in the essays when answering the 1st question of the research study was **using**. The largest benefit and also surprise for the participants is how “art, music, and meditation can practically be used in dealing with complex problems”. The practical value of the workshops is the ability to listen to the team members and to accept that any ideas are valuable and good.

These workshops helped to identify easier which managers use such skills in the business environment and which do not pay attention to them at all. Every manager requires SES skills. As a result of these workshops, I have “developed a new habit of responding to complicated e-mails a little bit later, after I have used some of the SESS practices”. A new habit of “focusing on one activity at a time” has also been taken up.

SES skills facilitate **problem**-solving and a wider understanding of problems, which has been the third word most frequently mentioned in the responses.

The respondents indicate that, at the moment when the problem seems unsolvable, it has not been understood correctly or entirely. The workshops have helped to come to this conclusion and also spot

the aspects that might be a solution to the problem more easily. Exercising empathy enabled viewing the situation from the perspective of employees and the management.

"When I face a new, unfamiliar problem, I put it aside until the following day at least and only then decide how to act", indicates one of the respondents. Setting the mind free before starting to deal with the problem is highly essential because the ability to focus is much higher in a relaxed state. Being in a meditative state is one of the ways of achieving peace of mind.

The fourth most frequently mentioned word is **thinking**, which indicates that SESS workshops develop thinking and its wideness. The respondents indicate that the workshops have helped to *"think out of the box"*, and *"widen the thinking horizon"*. The SESS workshops developed deeper thinking. *"If previously I was focusing on the technical process only, now I immerse myself much more in why this is happening"*.

The respondents indicate that such workshops *"are suitable for teams which work for and wish to attain a common target"*. They *"open the wideness of thought without losing focus on the most relevant at the same time"*. More productive teamwork occurred when a theoretical basis was provided for the particular SESS practice.

A valuable benefit from the cycle of SESS workshops was design thinking because *"I had never heard about it before"*. It enables using SES skills practically and creating a result.

The fifth of the words most frequently mentioned in the acquisition of new experience from the SESS workshops is the **focus**. As the respondents indicate, *"SES skills enable focusing and no losing it"*. Focusing on one activity at a time allows for better use of the mind's potential to find a solution to the problem. The most surprising was that you can be fully focused on the problem when you are relaxed. Thinking rationally, these states seem incompatible, but that's where the best solutions come up. *"Empathy and self-awareness help to create this state, focus, and open my potential"*.

3.2 SES Skills for leaders and contemporary organisations

The five words most frequently mentioned in the reflective essays of the students when answering the question "What is the value of SES skills for the leaders in contemporary organizations?" are provided in Table 3.

Table 3. Most frequently used words explore the value of SES Skills for leaders in contemporary organizations.

Word	Length	Count	Weighted Percentage (%)	Similar Words
Business	8	29	1.50	Business, engaged, engaging
Emotional	9	28	1.47	Affection, affects, emotional, emotionally, emotions
Solutions	9	30	1.44	Answers, results, solution, solutions
Organisations	13	24	1.24	Establish, organisations, organization, organizations, organizations'
Leaders	7	24	1.23	Leaders, leaders', leadership

Business is the word most frequently mentioned in the context of a contemporary organisation, and the respondents have given a wide insight into the benefits, which are described below.

The role of SES skills in business is much wider than it may seem initially. "The business knowledge and skills we acquire while studying or during practice are not sufficient because they alone cannot help finding innovative solutions". Furthermore, "innovative solutions need to be found in non-standard situations and within a short time". The respondents indicate that among the most valuable ones have been the workshops with brainstorming practices, acceptance of all ideas, and focusing on details as well as intuitive painting.

The SESS methods are useful in business when you seem to be "stuck" and the employees need to be encouraged in the creation of new ideas. SES skills may "simply help to find the answers that are not apparent in a complex business situation when seeking solutions rationally is customary". The respondents believe that the SES skills may be a new turning point in the creation of new practices in business. This is of long-term significance.

Companies deliver the news about their product or service via an emotional message. The business environment needs to change by accepting the new, therefore the SES skills are determinant. Moreover, they may help to engage business partners, employees, and clients.

In a dynamic business environment, leaders “*need to seek inner peace of mind, and it can be found in spirituality*”. It helps understand yourself, and find sense and value in work. The SES skills help to develop empathy and “*keep a cool mind*”. The business leader who combines their knowledge with the experience and the ability to find the best possible solutions for the development of the business intuitively has the best combination of skills.

Emotional is the second most frequently mentioned word when describing a leader and a contemporary organisation.

The first most essential aspect mentioned is emotional intelligence, which makes the work of a manager more efficient. “*Such leaders can convey and receive information without verbal communication*”. The respondents suggest that “*it would be primarily necessary to start becoming aware of own emotions and, secondly, practicing awareness*”. The SES skills not only help develop emotional intelligence but also facilitate the engagement of participants, and the generation of ideas.

Organizations could use SES skills to strengthen employees, both individually and as a team to grow the employees’ emotional intelligence. Implementing such skills in some of the company’s processes would help to establish a more creative and open-minded workspace, and also improve the total level of employees’ well-being. “*If a leader doesn’t recognize his emotions and hasn’t started practicing consciousness, it’s the last time to start it*”.

“*Emotional skills help calm the mind, recognize your emotions and control them*”. “*Restricting emotions doesn’t mean suppressing or ignoring them but being responsible for when and how you express them*”. Awareness of one’s emotions and control of obsessive thoughts “*increases the feeling of happiness and gives a sense of the meaning of life*”.

The third of the most frequently mentioned words is **the solution**. Thus, the respondents indicate that the SES skills help to find innovative solutions much faster. The set of these skills helps to harmonise the values of various people or even groups to achieve the result faster this way.

Companies need to seek new solutions constantly, therefore “organisation leaders need to accept, understand and apply the SES skills”. “*The SES skills enable merging the inner and outer world for finding new solutions, even though practicing these skills requires more time*”. The students indicate that the particular set of the SES skills offered in this project organically leads to the generation of ideas and finding a solution for the situation.

The respondents indicate that practicing awareness is of particular importance for achieving higher productivity and finding extraordinary solutions.

A contemporary **organisation** cannot exist without SES skills. Currently, organisations face complex and multidisciplinary issues. There is no single and comprehensive solution, but the SES skills may help to come to it and retain the position of the organisation in the business world.

The respondents indicate that all of the SESS workshops can be used in contemporary organisations, but that, most likely, not all employees in the organisation will be able to accept these skills. Managers of organisations should realise that the SES skills will help to find more innovative solutions, and therefore their acquisition and application should be commenced gradually. The hierarchic structure of the organisation and the level of maturity should be considered when carefully evaluating the readiness to accept these skills. SES skills can be used in organisation to work more effectively and create a better environment.

And the last of the most frequently mentioned words is the **leader**. What a leader of a contemporary organisation should be? Along with business knowledge and skills, a “*leader should be able to understand their inner feelings, emotions, develop spirituality*”. By developing it, it is easier to identify it in the employees and to be a leader, because it requires finding new and contemporary solutions. The SES skills “*help to develop oneself as a personality, be faster, smarter and more reasonable in decision-making*”. Leaders who are practising SES skills “*make their communication more efficient and their decisions more intelligent*”.

SES skills include creativity, the ability to see problems from different angles, cooperation, tolerance, and the ability to open mind to new experiences which can contribute a lot to leaders’ ability to face current management challenges raised by the transformation of the role of leadership.

The students recommend that such SESS workshops should be organised not only for managers but also for employees on various levels. SES skills help to find a new view of how to address the problems, learn more about your colleagues and develop yourself as a personality.

4 DISCUSSION AND CONCLUSION

The results show that SESS workshops at the personal level develop students' ability to think wide and at the same time to keep focused meaning that the methodology keeps them relaxed and at the same time fully concentrated on the problem. This result is in line with the theory of flow [24]. Flow, according to Csikszentmihalyi, refers to a 'state of mind which brings together cognitive, physiological and affective aspects' and creates peak performance. Students were able to empathise and define the real problem as required by the design thinking method [13] and see with an open mind and sense with an open heart as proposed by Theory U [23].

This type of training could allow business leaders to perceive problems differently and look for non-standard solutions, be emotionally intelligent leaders. This is also supported by [2] who concluded that embodied practices produce a new understanding of management concepts.

Students characterised SES skills as 'inner knowing' which is very much needed in the contemporary fast pacing world and at the same time as providing inner peace, as able to give simple answers that are not visible in a complex business world where a rational mind is traditionally engaged. The training was described as an ideal combination for managers, enabling them to combine practical knowledge with experience and the ability to intuitively and alternatively find the best possible solutions for business development. We conclude that the ProCESS method increases students' problem-solving capacities and provides better results than a simple analytical approach.

Our study position itself in the literature on embodied learning [3] examining how students perceive embodied activities to develop a solution to complex management problems and how they perceive this experience. The embodiment techniques should be used to develop future managers as holistic personalities. Embodied practices have a place in management learning and should be used in line with analytical approaches.

This study is a subject of certain limitations leading to future research. The ProCESS method is only in the initial stage of its development and future improvements are expected during the subsequent two years of the project. During the workshops, the theoretical background was introduced step by step in small pieces during each workshop as the method emerged in the process of doing. However, students indicated that they would like to have a full theoretical, framework at the beginning. This should be improved in future workshops. From the perspective of embodied cognition, it would be interesting to investigate how each type of practice develops specific skills. It can be done by measuring the skills before and after the training.

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