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Deep learning for a sustainability mindset

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ABSTRACT

While 'sustainability' in management education is mostly addressed from a technical perspective, the emotional and 'being' aspects can be key for creating a new mindset. In this paper the authors build on a conceptual model for developing a sustainability mindset, and provide an example of how this was applied in the design of an undergraduate course on *Managing Multinationals*, at Oulu Business School, the University of Oulu, Finland. Addressing the knowledge, systems thinking, emotional aspects, the tacit paradigms and the values we adhere to, students were led on a journey of discovery that created deep learning. This paper shows how the model for developing a sustainability mindset can be adapted and tailored to specific pedagogical contexts.

1. Introduction

How can educators engage students in sustainability action? With increasing global awareness about the planetary challenges that disrupt our ecosystem, and with it, life as we knew it, it could be expected that more individuals would decide to change their consumption habits, making voluntary changes in their lifestyle, or orienting their professional activity towards betterment of our planet.

In order for these individual changes to happen at the required speed and scope, several initiatives seek to motivate individuals towards much needed social or environmental actions, such as the 17 Sustainable Development Goals launched in 2015 by the United Nations Global Compact. Signed by the 193 member states, and announced as the most important agenda for the following 15 years, they have been put in front of business, global asset managers, non-profit organizations, policy makers and governments around the world. The educational sector has also been invited to champion the sustainability agenda, through UNESCO, United Nations Institute for Training and Research (UNITAR) and the Principles for Responsible Management Education (PRME). Multiple corporations, NGOs and grassroots organizations have also stepped up to promote action to address the many planetary challenges.

Thinking of scaling and accelerating change, how can educators foster engagement and develop a sustainability mindset? Dobson (2007) argues that the formal educational system is an appropriate arena to promote sustainability because it may influence students' worldviews and attitudes towards sustainability and contribute to a more profound social change (Setó-Pamies & Papaoikonomou, 2016). Universities that adopted the PRME principles have been seeking for ways to develop management graduates with sustainability leadership capabilities (Young & Nagpal, 2013). This paper builds on related studies proposing systemic approaches to sustainability education (Sterling, 2003; Van Lopik, 2013), the exploration of assumptions and values for a paradigmatic shift (Adkins, Gentile, Ingols, & Trefalt, 2012; Fang, Kang, & Liu, 2004; Kearney, 1984; Kuhn & Hacking, 2012; Mezirow, 1994; Scharmer & Hub, 2010; Yeager & Dweck, 2012), and the consideration of purpose, meaning, and one-ness (Delbecq, 2008; Doppelt, 2012; Krishnan, 2008; Neal, 2008; Zohar, 2012), including the recently published special issue on the UN Glbial Compact's PRME in the *International*

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Journal of Management Education (Parkes, Buono, & Howaidy, 2017). Furthermore the authors introduce the concept of the sustainability mindset and its elements (Rimanoczy, 2010), advocating for *deep learning* as a more holistic approach to learning and teaching sustainability (Cotton & Alcock, 2012) which engages individuals by addressing a topic through their intellect, their emotions and their values.

This paper focuses on an instrumental level in education for sustainability, i.e. methods and methodologies for learning sustainability in business (Setó-Pamies & Papaoikonomou, 2016). The authors build on the conceptual model for a sustainability mindset developed to guide educators in selecting contents and pedagogical approaches (Kassel, Rimanoczy, & Mitchell, 2016). Building on that foundation, an example is provided of an undergraduate course on *Managing Multinationals* at Oulu Business School, the University of Oulu, Finland. The course instructor designed the course particularly to address current ecoliteracy-related knowledge on MNC management challenges, prompting systems thinking, introducing emotional aspects, and exploring the tacit paradigms and values of the students, as they navigate a path of discovery that creates deep learning.

Our study is an empirical contribution to the literature discussing pedagogies for responsible management education, emphasizing the flexibility of the sustainability mindset model. In a practical way, it shows how a holistic pedagogy can develop a new mindset (Dyllick, 2015; Muff et al., 2013).

2. Exploring unusual leaders' mindset

The responsibility of corporations in the social and environmental impact of their operation is increasingly seen as an important condition of doing business (Dunphy, Benn, & Griffiths, 2003; Shrivastava, 1995, 2010). The statement of a 6 trillion dollar asset management CEO, Larry Fink from Blackrock,[1] calls for corporations to declare their short and long term impact on the environment and society as the 'new normal' for doing business. It has become a strategic issue and even close to a liability if not considered.

This said, certainly some business leaders engage passionately in initiatives that change how their organization operates, and pioneer a new way of thinking, seeking to improve their social or environmental footprint. However, it has been unclear what their motivations are (Sharma, 2002; Visser & Crane, 2010). What triggers cause them to go the unusual path, facing disbelief, uncertainty and puzzled colleagues or employees? This is a question that has been intriguing educators, as they seek to be more effective in engaging their students in sustainability issues. If we identify the nature of those triggers, the possibility opens to intentionally develop sustainability minded individuals by adding certain contents into management courses.

Recently, studies have addressed this question in light of different approaches to teaching and learning (Cullen, 2017; Ortiz & Huber-Heim, 2017). Klapper and Farber (2016), for example, emphasize the lasting imprint that an experiential learning approach has on students' entrepreneurial mindset. Lackéus (2014), in a report on an entrepreneurship course, causally links the experience of working in a team, interaction with the outside world, uncertainty and ambiguity, with the formation of higher levels of self-insight, entrepreneurial identity, self-efficacy, and tolerance of uncertainty and ambiguity. The inclusion of more than cognitive aspects in creating deeper learning experiences has been brought forth by Shrivastava (2010) and Burga, Leblanc, and Rezania (2017). Shrivastava (2010) advocated for a holistic, passion-guided pedagogy for sustainability which pays equal attention to the cognitive, physical and emotional components of teaching.

Several scholars have observed that decision making requires ethical sensitivity and awareness of a given value system, in addition to technical skills, going from values-neutral to a values-driven stance (Gentile, 2010; Kelley & Nahser, 2014). "Ethical sensitivity in action has to go well beyond creating ethical awareness of issues, it needs the chance to practice ("rehearse") for values-driven action in the context of practical management decisions. Only when students learn to move between the distanced, external stance of analytical thinking – the third person view – and the first and second person points of view, from which they have to act when solving real problems, will they have the chance to develop personal character and integrity." (Dyllick, 2015, p. 20).

Building on a holistic pedagogy for sustainability, we aim to shed light on the triggers for lasting, sustainable behavior of business graduates. Underlying to our endeavor is work by Rimanoczy (2010, 2013) which created understanding of the thinking and motivations of business leaders championing sustainability initiatives in their rather traditional corporations; the intention was to identify some aspects that could be intentionally developed in a new generation of leaders (Rimanoczy, 2010).

Sixteen business leaders from different industrial areas were studied to understand what information had played a role in their sustainability-engaged actions, what factors contributed to their 'readiness' to act, and what emotional, ethical, and spiritual elements played a role in the transformation of their worldview. From a large number of factors, the aspects that could be intentionally developed were extracted and classified as they naturally fell into two clusters, as shown in Table 1: the systemic and innovatice thinking dimensions (how they thought, the lenses through which they interpreted data and facts) (Atwater, Kannan, & Stephen, 2008), and the being dimension (their personal values, aspects related to purpose, life mission, sense of transcendence and making a difference).

The combination of the elements was called "sustainability mindset", defined as a way of thinking and being that results from a broad understanding of the ecosystem's manifestations, from social sensitivity, as well as an introspective focus on one's personal values and higher self, and finds its expression in actions for the greater good of the whole. (Kassel et al., 2016).

A sequence was also noted that started with realizing the seriousness of certain social or environmental aspects, but not just as distant facts: the leaders reflected on what their personal contribution was to those problems. This created moments of introspection and revision of their paradigms, with an emotional experience of cognitive dissonance: they realized that while they were ethical

[1] https://www.blackrock.com/corporate/en-us/investor-relations/larry-fink-ceo-letter.

Table 1
Elements of the Sustainability Mindset. Adapted from A holistic approach for responsible management education, by I.Rimanoczy (p.163), In R.Sunley & J.Leigh (Eds.). *Educating for responsible management: Putting Theory into Practice.* 2016. Sheffield, UK: Greenleaf Publishing.

Elements of the sustainability mindset	Systemic dimension of thinking	- both-and-logic - interconnectedness - cyclical flow - long term perspective
	Innovative dimension of thinking	- right-brain perspective (holistic, intuitive) - interconnectedness - creative, imaginative - versatile, flexible
	Dimension of being	- openness with nature - introspection, self-awareness - mindfulness, consciousness - reflection - larger purpose - collaboration

individuals, their actions (or their organization's actions) had questionable impacts on stakeholders they never had thought of. The tension became a stressor, and they spontaneously sought to get into action to 'repair' the damage, to address the problems that had become visible for them. "I had to do something, I could not *not* do something" (Rimanoczy, 2013) (See Fig. 1).

3. From elements to designing a course

The elements identified in the study were converted into learning goals of a pilot course at Fairleigh Dickinson University, New Jersey, USA, to develop a sustainability mindset, clustered in four content areas: Ecoliteracy, Systems Thinking, Emotional Intelligence and Spiritual Intelligence, anchored on a collaborative, innovative project to make a difference.

The semester-long course was later taught in the USA at the undergraduate and graduate levels, for business school students and also for students across campus with no prerequisites. The design sought to replicate the cycle observed in the group of leaders, starting with information about the state of the planet and our social/environmental challenges (Ecoliteracy). Attention was paid to present the information in an emotional way using images or videos, not just facts and figures. Then students were invited to acknowledge their feelings, and reflect on their own contribution to the problems (self-awareness, emotional intelligence), for example through their consumption patterns or lifestyle habits. Different questions fostered reflection on their values, and presented the students with prompts to revise the economic paradigms that are shaping our behaviors. Students learned to analyze information, seeking patterns and systemic interconnections (Systems thinking), and participated in dialogues exploring ethical and moral implications, including their personal purpose and desire to shape a better world (Spiritual intelligence). To release the anxiety and feelings of overwhelm that accompany such learning processes, students were invited to identify a project to make a difference, and work on it in small teams. The projects became also a learning-reinforcement, as students went from action to reflection to learning, to action and more learning.

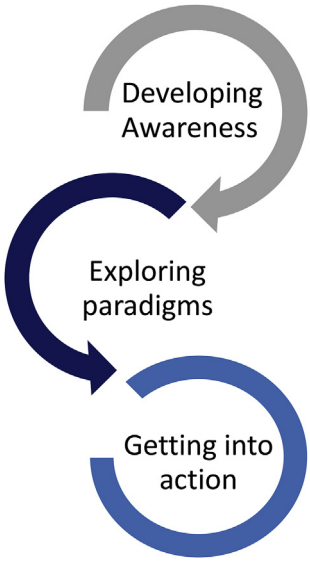

Fig. 1. Sequences of awareness, self-exploration, and action.

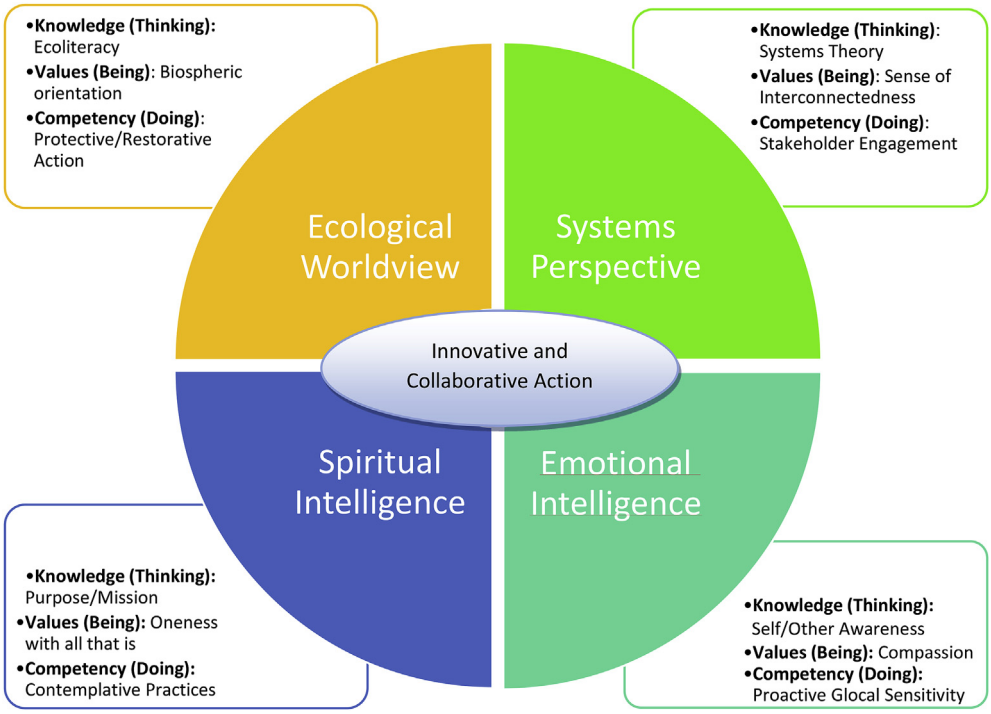

Fig. 2. Sustainability mindset development model. Reprinted from Kassel, Rimanoczy & Mitchell A Sustainable Mindset Model for Education, in K. Kassel & I. Rimanoczy (Eds.) Developing a sustainability mindset in management education. (2018) Sheffield UK: Greenleaf Publishing.

This design became the foundation of a conceptual model to develop a sustainability mindset (Fig. 2) (Kassel et al., 2016), which has been used in different educational institutions.

In 2014 LEAP! (Leverage resources, Expand awareness, Accelerate change and Partner) was formed as a network of academics from around the world interested in promoting, researching and developing the sustainability mindset with their students. In 2015 they became the PRME Working Group on the Sustainability Mindset, to this date, with over 102 scholars in 95 universities and 35 countries who exchange pedagogical approaches and experiences to create engaged sustainability learning experiences.

In the next section we will present an example of how elements of this model were used and adapted to design another course, this time at Oulu Business School, University of Oulu, in Finland.

4. Deep learning for responsibility in business education

Developmental psychologists have pointed at the different ways of 'making meaning' or understanding the world, depending on the stage of human development (Brown, 2011; Kegan, 1994; Schein, 2014; Torbert & Herdman-Barker, 2008; Wilber, 2005; Wilber, Patten, Leonard, & Morelli, 2008). This framework is useful to understand why simply 'knowing' about the planetary challenges is not enough to shift behaviors and engage in sustainable ways of living. Developmental psychologists have long struggled with finding ways to prompt or foster evolution in our worldviews. This section presents an example of how to develop a new mindset, which is a form of fostering evolution in our worldview, and the importance of a holistic understanding of sustainability (Goleman, Bennett, & Barlow, 2012). The course described is called "Managing Multinationals" and was offered to undergraduate business students at Oulu Business School in Finland.

One of the authors, also a member of the LEAP! Working Group, initiated in 2016 a pedagogical study at the University of Oulu with the aim of creating a scalable innovation for teaching. To provide some context, the Finnish University Law from 2009 ("Yliopistolaki 558/2009") states that students are supposed to be educated as servants of their home country and mankind generally. Furthermore, Oulu Business School had recently been accredited by AACSB International (Association to Advance Collegiate Schools of Business) and this surfaced the need for responsibility-focused education, which is at the core of the development project described here. As part of the pedagogical study, the author designed and delivered a course titled Managing Multinationals, for 120 students at the undergraduate level. Compared with traditional courses that provide lectures and exclusively cognitive content, the design of this course featured several content and pedagogical innovations.

4.1. The learning goals of the Managing Multinationals course

The Managing Multinationals course syllabus mentions the following learning goals:

1. Understanding of different perspectives on MNCs and recognition of why MNCs exist, how they compete and how they affect societies,
2. Analysis of cross-cultural management in MNCs,
3. Recognition of the diversified nature of MNCs and MNCs as networks and
4. Identification of ethical issues and CSR in MNCs.

The underlined sections represent the learning goals connected to elements of developing a sustainability mindset:

Understanding of different perspectives: Expanding the scope of care, systems thinking, stakeholder theory;

how they affect societies: interconnectedness, systems thinking, short and long term thinking, stakeholder theory, also empathy and social sensitivity;

cross-cultural management: development of versatility in the thinking by understanding different perspectives, worldviews; recognition of the personal values/paradigms;

MNCs as networks: interconnectedness, systems thinking, social sensitivity, responsibilities of the firm; ethical issues: social sensitivity, moral considerations, exploration of personal values, gap between espoused values and values in action.

For the design of this course, the instructor paid attention both to the contents and to the process (learning methods, pedagogy), to ensure that they mutually reinforced each other.

4.2. Pedagogical approach

Learning-based teaching, as opposed to content-based teaching, is based on the need to advance students' development (Nevgi & Lindblom-Ylänne, 2009). Methods are set flexibly to support learning and guide the students' construction of knowledge based on their previous knowledge, current needs and future hopes. Important hereby is teaching and learning on par, i.e. the construction of knowledge is a mutual process between teacher and students, where also learning goals and methods have been mutually agreed. Learning-based teaching pays attention to suitable atmospheres for learning and creates a balanced relationship between students and teacher. This 'mutuality' involves both teacher and students in taking ownership of what happens before, during and after the course. It entails active participation and leads to more (mutual) engagement and better learning.

The instructor created an appreciative and encouraging (yet unfamiliar and provocative) learning situation where the traditional roles of teacher-student were changed into a co-creative "think-tank"-like environment, and the teacher acted not as a traditional educator, but as a learning facilitator (Rimanoczy, 2016). He used a flipped classroom approach (Milman, 2012), where students were in charge of finding information and making presentations, in an atmosphere of dialogue and discussion. Furthermore, the instructor used principles of social learning, by promoting the work and exchange of learnings in small groups, as well reflection and self-directed learning techniques, (i.e. students had to conduct online searches to explore a topic).

The holistic learning approach distinguishes between learning and studying (Winne & Hadwin, 1998), whereby studying is the intentional process of directing the attention to understanding or memorizing something. Learning on the other hand has an emotional pathway. When learning we (subconsciously) ask ourselves: "Is it interesting? Are we afraid?" etc. Learning is also a social process which technically takes place individually but is "negotiated" in a collective. Learning is not only a cognitive process, and it can be enriched and become more profound and transformational when it engages the body and/or the emotions. It is an active and reflective construction process of change, refinement, and transformation which is initiated by a trigger (material, conversation, etc.). By allowing the inclusion or expression of feelings, the students increase their levels of engagement, and have a stronger ownership of the learning process (Rimanoczy, 2016). This is especially important in responsible management education (Humphries-Kil, 2017: 384).

In this experience, the instructor was particularly interested in engaging the students in the exploration of the effects of MNCs on host societies, and in impacting their personal beliefs, perspectives and perhaps behaviors. The understanding that occurs in a profound learning situation can mean that a person grasps the relation of concepts or realizes the full dimensions of a problem, which may affect their behaviors or preferences.

4.3. Selection of contents

The instructor selected a particular ongoing case (McWilliams & Nahavandi, 2006) as the anchor of the course, which was about the oil production sites of Shell Petroleum Development Company of Nigeria, Ltd., in the Niger Delta. The choice of this case was based on several factors: It was current, involved a well-known MNC, had documented impact on a large area, included a lawsuit and different stakeholders' interests, provided a diversity of multi-cultural perspectives, and allowed for the exploration of social, environmental and economic implications.

The presentation of the case however did not start with information and data. Instead, the instructor shared a story based on beautiful pictures of the Niger Delta, its rich biodiversity and the variety of cultures present in the region, with two million habitants from over 40 different ethnicities. By starting the case with images, the instructor fostered an esthetic and emotional connection with nature and with the Niger Delta (Shrivastava, 2010). As the information shifted to the oil production facts and consequences, i.e. number of oil spill accidents in a year, water contamination, pollution of soil, impact on fisheries and on the natural environment that is one of the main sources of subsistence for the population, the instructor prompted in the students the development of social sensitivity and empathy with the affected individuals.

The analysis and discussion of the case was organized by dividing the students into three groups, according to their preferred lens:

environmental, social or economic (Maier, Baron, & McLaughlan, 2007). They discussed the facts and the implications, developing critical thinking, and exploring the stakeholders affecting or affected by the operation (Jamali, 2008). The students realized the web of interconnections (Capra & Luisi, 2014; Sterling, 2004), to the point of finding their own role and contribution to the problems, i.e. by using petroleum-based products unknowingly of their origin and extraction process. This step of awareness created a cognitive dissonance, which brought up the desire to do something, to act: during several group discussions and written assignments students developed ideas for improving and harmonizing different stakeholders' actions. This sequence followed the cycle presented in Fig. 1: awareness, emotional connection, reflection of the own contribution, desire to act.

While the exploration of ethical circumstances of MNCs was part of the course, the pedagogical approach of the instructor created a lively experience, not just an intellectual discussion. His selection of techniques and activities, i.e. storytelling, facilitated an emotional and cognitive understanding of an environmental issue and its stakeholders in Africa (Tooth & Renshaw, 2009).

5. When learning becomes development

Adressing values and attitudes is highly problematic for higher education, yet is at the heart of education for sustainability (Gentile, 2017; Shephard & Furnari, 2013). What is the purpose of learning? Educators have been asking this question for centuries, and a frequent answer is that education should be aiming at developing better human beings (Dewey, 1938; Habermas, 1971). While the visible goal of the scrutinzed course of this study was to learn about management of multinational corporations, the instructor had a more ambitious goal: to create engaged learning, a deep learning experience that could perhaps start transforming the students' worldview and role in society and, thus, affect their way to go about managing multinational corporations (Sunley, & Leigh, 2016).

The selection of contents and the pedagogical techniques went hand in hand to create a setting for such learning to occur. For example, the work in small groups of like-minded colleagues and of colleagues representing a very different point of view was not only a rich terrain for reviewing theoretical perspectives on cultural peculiarities, but also created an experiential arena as they could reflect on their own reactions and emotions when dealing with different opinions and values. The students were also gently moved out of their comfort zone and invited to occupy different perspectives than the one that came naturally to them. The technique of moving students out of their comfort zone has been noted as useful to get into the responsible management ‘learning zone’ (Leigh & Sunley, 2016, p. 5). This experience thus was a prompt to increase self-awareness, introspection, and practice tolerance and acceptance of different perspectives.

The discussion of concepts such as responsibility, corruption and ‘morality’ in the political and corporate setting also promoted self-awareness by the identification of the personal ambiguities, and the gap between the espoused values and the students' personal values in action. Topics such as global wealth distribution and its link to MNCs' operation offered a stage conducive to explore the personal values and the anchors of our identity (what defines wealth, and success? what is celebrated in our society, our family or circle of friends?). An important step in human evolution is going from an either-or thinking to a both-and logic, developing paradoxical thinking (Carollo & Guerci, 2017). This thinking progress is important for analyzing data and making decisions that are inclusive and meet multi-stakeholder needs (i.e. from ‘either profit or planet’, to ‘profit and planet’). Development of a both-and thinking was prompted by topics such as the need of attending economic, social and ecological needs, as well as national culture, cultural relativism and their meaning for managing across cultures in MNCs.

Systems thinking is a framework that enriches our way to analyze information, for example through the understanding of interconnections. In this course, students faced this perspective as they realized how MNCs' actions were closely connected to other institutions, i.e. political actors, and how they had a concrete impact on host-country societies. In sustainability education a frequent discussion addresses how to balance information about how serious the challenges are, with providing hope and solutions. In this course, the instructor ensured that students could see that MNCs had a choice to be institutional followers or change agents, expanding the students' understanding of MNCs' roles in society, and how these can be changed. The purpose was to develop a sense of confidence, empowerment and creative imagination, as the students prepared a report on possible solutions.

6. Closing remarks

This study aimed at introducing the elements of the sustainability mindset, which can be developed as a new lens through which individuals can look into the world, analyzing data and making better decisions. Building on research about more holistic approaches to teaching and learning sustainability in business and management education (e.g. Lackéus, 2014; Shrivastava, 2010), the elements cover aspects related to the knowledge/thinking, to the values/being and to the competencies/doing. We suggest that systems thinking and ecoliteracy, when connected with emotions and with the personal values, can create a powerful transformation in our worldview, leading to more thoughtful and compassionate behaviors, for the benefit of all. As such, developing this ’lens' not only contributes to engaged sustainability leadership behaviors, but also to shaping a better world.

The case of the Managing Multinationals course at Oulu Business School in Finland is an example of how the elements of the sustainability mindset can be easily embedded into a course, to meet not only the learning outcomes at the content level, but also as a more profound developmental experience. Certainly, students are to some degree “trained” to be goal-oriented fact-absorbers who are scanning the course, usually sitting in rows and listening to one person talking in front of them, asking themselves “what do I need to know in order to pass this course?” The experience of the authors, however, shows that with the right motivation mechanisms students are willing to participate in different forms of learning and become engaged in the learning situation. Motivation can be reached through relevance: students should be able to relate to the phenomenon of a course session, preferably not only on a cognitive level but also emotionally. In the case described, the instructor helped surfacing and challenging students' existing mental

models and valued all aspects of students' being. An important factor was that a positive and supportive learning atmosphere was collectively created with less rigid and imposed borders between what is considered “right” and “wrong”. This allowed for exploring new ideas and ways of approaching (business) phenomena, i.e. challenges, issues, problems, etc.

Deep learning is the outcome of an easy-to-apply process for teachers/facilitators of business courses to create a more engaged, critical and analytic as well as holistic learning experience. The instructor achieved this deep learning using systems-thinking, a shift in students' prevailing paradigms and the integration of students' whole being in the learning, by creating a learning experience that was closer to students' own experience and involved their emotions (Rimanoczy, 2016). This can be attained replacing text-based lecture slides with more emotional stimuli (e.g. pictures, videos). The use of provocative and negative examples of MNCs' operations in developing countries created understanding for how things can be detrimental to society and the environment. The students had an opportunity to get into action by suggesting changes to existing operations that could match the Sustainable Development Goals of the United Nations Global Compact. The dimensions of thinking, being and doing were incorporated in a flexible manner into this course, to create an engaged learning experience.

7. Limitations

The story shared in this paper was meant to illustrate how elements of a sustainability mindset can be incorporated into a course that is not particularly designed for that purpose. A creative design, innovation in content and in the pedagogical techniques can foster deep learning and promote a different way to look into the world. This said, the case described here took place during the autumn semester of 2016. No data were collected to assess the transformational impact of this deep learning experience and if – and in what ways – the students applied the acquired systemic or moral lenses into other situations. Future research is recommended to get back to the students or compare incoming students' data with end-of course data related to the deep learning and their sustainability mindset.

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