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“The potential of transformative learning in achieving sustainable leadership through the development of a sustainability mindset”

by

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## **Abstract**

This paper aims to contribute to the discussion of how educational methods have to be designed in order to promote sustainability leadership, a requirement for achieving the UN Global Sustainable Development Goals. The study focuses on the educational method of transformative learning and its effect on the mindset of people in shared leadership positions. This study is characterized as mixed method research whose strategy is the investigation between variables to understand the learning evolution of the study participants in regard to the development of a sustainability mindset. A case study in a small German enterprise has been conducted for that purpose. The research has a pragmatic approach that explores data through literature analysis, qualitative content analysis and by using statistical methods to detect possible belief patterns in the analyzed data volume, based on primary data sourced from questionnaires that validated the degree of sustainability mindset before and after the transformative learning experiment.

The data show an impact of education in developing a new mindset for sustainability leadership as there is a variation in the participants' average of how much they feel affected by climate change and how high their perceived responsibility to act sustainably towards others is. The data suggest that participation in a transformative learning experiment helps increase conscientiousness and awareness of climate change. Further research with a greater sample is required to test the authored hypothesis and proof its generalizability.

## **Keywords**

Sustainability, Education, Leadership, 2030 Agenda, Mindset, Transformative Learning

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## 1. Introduction

“The world has entered a climate emergency which demands that we increase action to address climate change at all levels as quickly as possible”, emphasises UN Climate Change Executive Secretary Patricia Espinosa (United Nations 2022). Already 10 years before Patricia Espinosa’s statement, the UN had launched the global framework for sustainable development as a response to the rapidly unfolding sustainability challenges policymakers and politicians were facing. The Global Sustainable Development Goals (SDGs) aim to tackle climate change by promoting sustainable development in the dimensions of society, environment, culture, and economy. Tackling climate change and fostering sustainable development are two mutually reinforcing actions. Thereby, sustainable development can be defined as “development that meets the needs of the present without comprising the ability of future generations to meet their own needs” (United Nations 2020). The implementation and success of the global sustainable development goals rely on countries’ own sustainable development policies. All stakeholders, such as governments, civil society, and the private sector are expected to contribute to the implementation of the sustainable agenda (United Nations 2020). Thereby, the performance of any institution, in seeking to achieve sustainable development, depends to a large extent on its leadership (International Institute for Sustainable Development 2018). Leadership is described as a key factor when it comes to implementing sustainable action into practice, because leaders have the power to balance short-term economic goals with long-term sustainable development goals by allocating resources and considering interests of stakeholders while focusing on the triple bottom line of people, planet, and profit (Ely 2022; International Institute for Sustainable Development 2018; Hallinger and Suriyankietkaew 2018; Globally Responsible Leadership Initiative 2005; Boström et al. 2018; Burns et al. 2015).

Therefore, studying different styles and characteristics of leadership, when facing complex and partly unpredictable environmental challenges, is increasingly becoming a key area of study in public administration (Ross et al. 2022; Gerard et al. 2017; Jordan et al. 2018; Kennedy et al. 2012; Kruse and Schmidt 2020; Liefferink and Wurzel 2018; Tideman et al. 2013). “Leaders must deal with a growing list of significant and complex social, economic and environmental challenges each of which has the potential to adversely impact the viability of their organisation”, state Ross et al. (2022, p. 15). As the world is becoming increasingly volatile, uncertain, complex, and ambiguous, decision-makers and the wider society are facing an exacerbating situation that linear thinking is not going to solve. A new sustainability

mindset, therefore, is demanded, because the wickedness of environmental problems requires anticipatory mindsets and the ability of leaders to reflect on their own worldviews in order to experience epiphanies and truly appreciate how their mindset contributes to the organisation's performance in tackling climate change. "Maintaining the dominant worldview and narrative of the heroic or command and control leader will sustain the same problems that are faced now by organisations that are dominated, culturally, by the views of the few" (Ross et al. 2022, p. 20). It is necessary to find leadership that views and handles the complex problems of climate change holistically and does not break problems down into simple issues, a typical approach of western societies (Li 2016). A mind open to wicked problems will experience significantly better implications for viability, productivity, and corporate reputation (Ross et al. 2022).

But not only the challenges have changed, but also the environment in which leadership is acting has shifted from a hierarchical top-down approach towards a collaborative polycentric approach. Lascoumes and Le Gales (2007) state that the way we govern is evolving, and we can find ourselves in a multi-level, multi-stakeholder environment that is shaped by collaborative policymaking, thus giving non-state stakeholders the chance to shape policies in a collective decision-making process (Wurzel et al. 2019). Business leaders, therefore, can become agents of change who are of central importance for climate change mitigation and adaptation. Through the polycentricity of international climate governance, leadership has become 'endless opportunities' accompanied by the relative autonomy of polycentric decision-making (Lieverink and Wurzel 2018). "The rules of engagement of any system are based on implicit or explicit governance principles and driven by leadership actions" (Kruse and Schmidt 2020, p. 145), thus, the intervention of sustainable development depends on the type and effectiveness of leadership (Termeer et al. 2017).

Leaders are important during the process of change. According to Zogjani and Raçi (2015), for the process of change to be successful in any organization, it should be well managed by leaders through planning, organizing, controlling and personnel. On the one hand, leaders have the power over decision-making, followers, and capital, thus being able to steer the resources towards sustainability. On the other hand, leaders must react to outside developments by adapting to changes in the external environment. Therein, leadership and management will be essential for organisations in all sectors to integrate the SDGs into strategic plans and operational activities, as well as to adapt to the changing climatical circumstances (International Institute for Sustainable Development 2018). It is "the goal of the leader [...] to offer a solution to the problems in the organization and to incorporate his activities in the realization of the process of changes in the organization" (Zogjani and Raçi 2015, p. 66).

Therefore, combining the new collaborative and polycentric governance environment with the increasing climatical challenges and the need for adequate steering towards sustainable development, sustainable leadership offers a way to reform and facilitate contemporary climate change policymaking. Sustainable leaders are “individuals who are compelled to make a difference by deepening their awareness of themselves in relation to the world around them” (Visser and Courtice 2011). However, sustainable leadership is exposed to shifting global challenges. It is, thus, of importance to acknowledge the dynamic character of the concept and understand it as a continuously evolving model that seeks to target sustainable development while using key characteristics to achieve it.

In order for sustainable leadership to develop, leaders need to be educated and provided with the right skill set. As Rimanoczy (2021) puts forward, sustainability education in leadership has a significant role to play in changing old paradigms and fostering leaders who are capable of working collaboratively to address complex sustainability challenges in a new and innovative manner. Leadership education is, therefore, an important tool to prepare current and future leaders to act and guide them in a sustainable direction (International Institute for Sustainable Development 2018). Educating sustainability leaders means on the one hand teaching them facts about human-induced climate change, therein the effect of global warming on different parts of the planet, loss of biodiversity, air pollution, water contamination and others. These kinds of information and scientific facts have been spread and shared with leaders and policymakers for decades and still, few has been done to re-orient business behaviours and companies' focus on more sustainable behaviour.

Already decades ago, Elias (1997) voiced his concerns about the inappropriate reactions to the modern world and demanded to improve our learning to respond to the new challenges posed by global issues and the new demands coming with them: “learning processes are lagging appallingly behind and are leaving both individuals and societies unprepared.” He explained the human insufficient reactions through the nature of our minds and the defective training we give them. Thus, new and improved educational methods are needed to teach these characteristics and to form sustainable leaders with a sustainable mindset (Ritz 2021; Ritz and Rimanoczy 2021; Buchanan and Kern 2017).

Hence, when speaking about how to tackle climate change by promoting sustainable development through sustainable leadership, scientist and policymakers speak about triggering a transformation of paradigms, worldviews, beliefs, values and assumptions towards a systemic understanding and a compelling vision (Ross et al. 2022). “We need to transform how we interact with nature” (Uitto 2022, p. 2). Uitto (2022) states that also the transformation of

education and how we see ourselves in relation to the rest of the planet is necessary. Scholars suggest that the emotional involvement and the mindset of leaders give the necessary impetus to act significantly more sustainable and to guide toward more sustainable action (Ahlström et al. 2020; Christopher J Moon 2015; Henderson 2002; Ritz and Rimanoczy 2021; Sterling 2011). Therefore, this research will focus on the mindset as one characteristic of sustainable leaders. The sustainability mindset is “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 and Rimanoczy 2018, p. 5).

The focus on the leadership mindset is relevant because according to Meadows (1999), the highest leverage point at which to intervene in a system lies in the mindset or paradigm from which the system arises. Schumacher states in this regard: “The volume of education has increased and continues to increase, yet so do pollution, exhaustion of resources, and the dangers of ecological catastrophe. If still, more education is to save us, it would have to be an education of a different kind: an education that takes us into the depth of things” (Schumacher 1974, as cited in Sterling 2011, p. 17). In more recent words, Burns et al. (2015) state, that “the changing and complex nature of environmental and social problems present adaptive sustainability challenges that require new values, skills, structures and ultimately, a new understanding of leadership” (p.89).

Having in mind that a mindset shift and emotional involvement is necessary to trigger a transformation, an adequate educational method is needed that addresses the respective leadership skills and characteristics. In view of the urge for a new educational method, leadership education research suggests that transformative learning offers the right techniques to achieve the required skillset to tackle the challenges of contemporary social-ecological conditions of unsustainability, complexity, and uncertainty presented to leadership. Sterling (2011, p. 18) states that “the concept of transformative or transformational learning has aroused increasing interest, as a way of conceiving and practising educational forms that might ‘take us to the depth of things’”. Transformative learning involves: “a deep structural shift in the basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically and permanently alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-location: our relationships with other humans and with the natural world (O’ Sullivan et al. 2016, p. 38).” Transformative learning theorists state that transformative learning is more permeable and inclusive than other forms of learning because it comprises an emotional sphere within the learning process (Mezirow 1991; Taylor and

Cranton 2012; Sterling 2011). Thus, transformative learning is supposed to efficiently contribute to facilitating long-term sustainable development by appealing to the mindset of sustainability leaders. Underlying premises are being reflected and meaning schemes are broken by exercising a metacognitive experience that lets participants of a transformative learning experiment critically reflect on their beliefs, assumptions and values that shape their current perspective. In the labour context, transformative learning happens when the nature of consciousness changes, when members of organizations radically change how they perceive, think and behave at work (Henderson 2002). Therefore, transformative learning aims at fostering and increasing sustainable leadership.

It is important to understand, thereby, that businesses contribute to the sustainable development of our planet and bear the responsibility to educate professionals to become change makers with a more global and sustainable vision. The role of enterprises in the development of futureproof leaders is acknowledged by the United Nations action plan towards a sustainable future, as well as the Globally Responsible Leadership Initiative, which states: “Businesses are among the most influential institutions worldwide. They have a tremendous opportunity to shape a better world for existing and future generations” (Globally Responsible Leadership Initiative 2005, p. 4). Hence, the case study of this research will be conducted at a small German enterprise, chosen as a case of convenience to conduct a longitudinal study using questionnaires as a data gathering method. Project leaders of different departments of the company will participate in a transformative learning experiment called the WEEK. Their sustainability mindset before and after the experiment will be analyzed to see whether transformative learning is an effective educational method to facilitate sustainable leadership. Hence, the research question of this master thesis is: *To what extent does transformative learning facilitate sustainable leadership through the development of a sustainability mindset?*

In order to answer the main research question, I will answer the following sub-questions by doing extensive literature analysis as well as conducting a case study performing a transformative learning experiment and measuring the impact it had on the mindset of the participants. Data were retrieved from literature analysis and through pre- and post-treatment questionnaires.

The first sub-question focuses on the outcome variable and investigates: What is a sustainability mindset? How does it contribute to climate action? And what factors influence a leader’s mindset towards sustainability?

The second sub-question focuses on the exploration of the independent variable by asking: What is transformative learning? How is it different to traditional learning? And what is the potential of transformative learning to “solve the impossible”?

Based on the transformative learning theory developed by Mezirow, I expect that the transformative learning experiment will facilitate sustainable leadership by having a positive effect on the sustainability mindset of leaders, meaning that they have a more elaborated sustainability mindset after the experiment than before and are thus better equipped to cope on the management level with the effects of climate change.

To test the hypothesis, this research paper will start by conducting a literature review that sets the theoretical framework of the concept of sustainability mindset and transformative learning theory. Therein, the concept of sustainable leadership and sustainable leadership mindset will be presented and their importance for sustainable development will be described. Afterwards, the educational learning method of transformative learning will be defined and compared to traditional learning and the specifics in which it influences the leadership mindset will be carved out. At the end of the literature review, the knowledge taken from the literature will be synthesized and the expected potential of transformative learning will be described.

The third chapter displays the methodology of this research. Therein, the type of research, research design, the experimental procedure of the case study and the methodical limitations of the study will be outlined. It is followed by the presentation of the results in chapter four. The fifth chapter comprises the discussion and analysis of the results, leading to the answer to the research question. The research paper closes by presenting a conclusion and summary of the conducted research and gives an outlook on recommended future research.

## 2. Theoretical Framework

### 2.1. Sustainability Mindset

This chapter will answer sub-question 1: What is a sustainability mindset? How does it contribute to climate action? And what factors influence a leader’s mindset towards sustainability?

To start, the concept of a sustainability mindset will be explained, and different definitions will be presented from the literature. The comparison of the different approaches to conceptualising the sustainability mindset will lead to a workable definition of the concept that will be used for this research.

Afterwards, the importance of the sustainability mindset on the backdrop of sustainability leadership and sustainable development will be explained by answering the question: How does a sustainability mindset contribute to climate action? Furthermore, key features will be explained in contrast to other leadership mindsets.

In the end, factors influencing a sustainability mindset will be synthesized from the literature. The factors will help to determine whether transformative learning achieves to address these factors.

### 2.1.1. What is a sustainability mindset?

To locate the concept of sustainability mindset in sustainability leadership research, a look at past research has been taken. Hallinger and Suriyankietkaew (2018) offer an intensively investigated 'knowledge base' on sustainable leadership from 1990 up to 2018. For this research, their work serves as an orientation to locate the term sustainability mindset in the broad research field of sustainable leadership. Based on the current 'research front' of sustainable leadership, four implications for leadership practice and directions of research have been given by Hallinger and Suriyankietkaew (2018). First, their review of 952 Scopus-indexed documents reinforces the importance of values and ethics as a foundation for sustainable leadership: "Whether one seeks to adopt an authentic, responsible, transformational, or sustainable approach to leadership, the clarification, articulation, and enactment of personal and shared values is a critical first step towards motivating and engaging others" (p.18). The second practical implication of their review is the need to adopt a long-term perspective on the multiple ends towards which one leads an organization or society. "It is the responsibility of leaders to 'sell' the value of long-term goals such as environmental stewardship and survival of the organization or society over quick fixes" (p.18). Third, sustainable leadership is oriented towards capacity building and sustainable change. This is caused by the dynamic nature of sustainable development and the need for frequent adaptation and re-orientation in the process of change. The fourth implication says that the sustainability mindset is one of the underemphasized concepts discussed in the literature. "A sustainability mindset evolves as a leader embraces a particular set of values, enacts them in practice, and gains positive results" (Hallinger and Suriyankietkaew 2018, p.18).

With the work of Hallinger and Suriyankietkaew (2018) one can see the relevance of studying the sustainability mindset in the context of sustainability leadership research. On top of that, they stress the importance of providing values, long-term thinking, and dynamic

adaptation for practical sustainable leadership. Although Hallinger and Suriyankietkaew (2018) list these three aspects aside to the concept of sustainability mindset, this research will count them as aspects of the sustainability mindset, as findings of past research count them as such (Visser and Courtice 2011; Arruda Filho et al. 2019; Tideman et al. 2013; Ritz and Rimanoczy 2021)

Diving deeper into sustainability leadership education, it can be observed that attention to sustainability courses and modules has predominantly focused on the external or visible aspects of sustainability. It is referred to as the focus on sustainability knowledge, facts, and data (Rimanoczy 2021). The focus on external aspects, however, is described as insufficient when trying to educate sustainable changemakers that address climate change. It “requires a shift in business thinking, mindsets and awareness, hence an evolved type of consciousness, with an appropriate skill set derived from this consciousness” (Tideman et al. 2013, p. 23).

Thus, research is increasingly pointing out the need to address other aspects that are at the foundation of our habits and actions: Our paradigms, values, and worldviews, in essence, our mindset (Elgin, 2009; Kumar, 2002; Meadows, 1997; Smith & Sharicz, 2011; Speth, 2009; Tsao & Laszlo, 2019; Wamsler & Brink, 2018, p. 59, as cited in (Rimanoczy 2021). The sustainability mindset is part of the internal aspect of sustainability leadership, it is not visible in itself, but visible in action (Rimanoczy 2021). As the concept of sustainability itself, sustainability leadership inherits an external and internal dimension (Visser and Courtice 2011). Leaning on the research of Kennedy et al. (2012), who proclaim that the research of internal aspects of sustainable leadership offers an important alternative for leadership development, this research focuses on the “mindset not skill set” of sustainability leaders. Kennedy et al. (2012) outline that “new ways of thinking about leadership as emergent, relational, and collective are becoming evident in leadership theory and practice. This is causing orientations to leadership development to shift from approaches that are predominantly concerned with building skills to those that are concerned with questions of mindset” (p.10).

In order to present a workable definition of the sustainability mindset and identify key characteristics to conceptualize the term, a literature review has been conducted. **Table 1** summarizes the most important findings of the key characteristics.

Moon (2013) names sustainability leaders ‘ecopreneur leaders’ and offers a hopeful definition. An ecopreneur leader is “a light shining in a world threatened with environmental destruction beyond its capacity to recover” (p.10). He states that leaders with a sustainability mindset have the ability to empathize and feel compassion apart from the “green business skills” needed from leaders to guide their organizations towards more sustainability. Inner

values, such as social inclusivity, the simple need to transition economics and the significance of biodiversity are the motivating factors of sustainability leaders who empathize with their surroundings and act upon them.

A more profound and complete conceptualization of the Sustainability Mindset is offered by Rimanoczy (2013). She emphasizes the relevancy of a sustainability mindset for future leaders as follows: It is “the thinking and the being that can take us from breakdown to breakthrough on this planet.” Kassel and Rimanoczy (2018) present the first extensive definition of the sustainability mindset as follows: the “sustainability mindset is a lens that encompasses social and environmental aspects, self-awareness, connection with the purpose, and social sensitivity, leading to an internal call to action”, it is “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.” (p.461)

The definition of Kassel and Rimanoczy (2018) will serve as the scaffold and ground for comparison to investigate the similarities and differences of the different conceptualisations in the literature. Therefore, to examine it in more detail, the different aspects of Kassel's and Rimanoczy's definitions will be explained and compared to other definitions.

To start, by saying it is “...a way of thinking and being, that results from a broad understanding of the ecosystem's manifestations”, it referred to the rational and cognitive dimension of thinking and the ontological aspects of being. For most western-influenced cultures, the dimension of rational and logical thinking is the most prioritized. Its recognition and presence influence our behaviours and worldviews. Our mind processes rational information differently than nonrational data. The processing is characterised by the overall endeavour to seek control while minimizing uncertainty and risks. Furthermore, the rational mind tends to segment information, breaking them into separate elements. This fragmentation leads to a rather linear way of information processing in which one-way, cause-effect relations and short-term connections are paramount and analysed. The non-rational data, such as emotions, affect intuitive knowledge, nonverbal information, paradoxes, contradictory information, spiritual or transcend embodied experiences and collective wisdom are left out in the rational thinking dimension (Rimanoczy 2021). As environmental problems are characterised to be unpredictable, complex and interlinked, making a decision solely based on analytical thinking, hampers the ability to find holistic and long-term solutions (Bierbaum et al. 2018). Losing the perspective of the whole by breaking information into small brackets can bear the risk of failing to grasp the larger picture and failing to understand the multicity of

feedback loops of human behaviour and the environmental response, such as the wide-ranging impacts of anthropo-generated climate change (Rimanoczy 2021). Furthermore, *understanding the ecosystem's manifestations*, means to see the complexity and large picture of the social and environmental reality, which is characterized by multicausality, paradoxes and the dilemma of focusing on either-or options, such as profit or planet, that lead to narrow solutions and small positive impact for the environment (Rimanoczy 2021). Visser and Courtice (2011) describe this aspect using the term system understanding. It is “the ability to appreciate the interconnectedness and interdependency of the whole system, at all levels, and to recognise how changes to parts of the system affect the whole” (p.7). Arruda Filho et al. (2019) paraphrase the same idea and call the characteristic system thinking part of the mindset for sustainability, it is a “new way of thinking in terms of connectedness, context and relationship” (p.857). Tideman et al. (2013) speak about ‘Context’ (p.25) when recognizing the interdependencies, complexity, ambiguity, and interconnectedness. Lueneburger and Goleman (2010) do not explicitly talk about the systemic understanding but include the evaluation of long-term trends in their description of the sustainability mindset. The evaluation of long-term trends partially involves systemic thinking, when trying to make sense of long-lasting trends and interconnections.

The next part of the definition is “*social sensitivity*”. As mentioned before, only using analytical thinking based on rationality and logic in order to solve complex social and environmental problems limits policymakers and people in leadership positions to achieve holistic solutions and make rules with high rates of compliance. The presentation of facts has often failed to generate a mind shift in the people to act differently. Too strong have been the beliefs of how the world is running or supposed to run. Traditional unsustainable economic behaviours have profited and manifested (Rimanoczy 2021). Through the development of social sensitivity and the exploration of one’s own feelings, a personal connection with complex and seemingly far-off problems can be established. An intensified inner discourse about the topic of one’s personal contribution to the solution can be expected as a result of emotional involvement and motivation to action (Rimanoczy 2021). Realizing the seriousness of biodiversity loss and social inequality is part of being sustainably aware. In addition, a person with a pronounced sustainability mindset has the ability to reflect on the personal contribution to environmental problems. Thus, problems and challenges are not considered distant facts but are understood with empathy and compassion. Therefore, the ethical awareness of the environmental and social difficulties are signs of the existence of a sustainability mindset. Visser and Courtice (2011) describe that aspect of sustainability leadership ‘emotional

intelligence’, the ability to understand their own emotions and those of others. Leaders with high emotional intelligence are clearer about who they are, and what their impact is. They can reflect on their own place and influence their situation. Arruda Filho et al. (2019) state that the sustainability mindset as part of sustainability leadership is a way of thinking using ethics, psychology, and psychoanalysis, thus, including psychological and emotional factors into their definition. Tideman et al. (2013) speak about trust, fairness, altruism and relatedness and summarize these points under the element ‘Connectedness’. Lueneburger and Goleman (2010) offer in this regard the term ‘humanistic thinking’ to describe the emotional level of involvement.

The next component of the sustainability mindset is related to social sensitivity and the exploration of one’s own feelings and beliefs. It implies the “*introspective focus on one’s personal values*”. Through the question “What are WE contributing to this?” business leaders realize their professional but also private impact on climate change and environmental degradation. Rimanoczy (2021) explains: “The realization that we are playing an (unintentional) role in the problems is a powerful insight. It leads us to revise our values, to question what we stand for and to inquire how are we living up to our stated or held values” (p.16). Values are part of one’s identity and determine their behaviour. Hence, when analysing how people and in particular leaders contribute to climate change, it is important to analyse the deeper values and characteristics of their identity. Furthermore, according to Kassel and Rimanoczy (2018), leaders with a sustainability mindset act rather value-driven than profit-driven. Their awareness, values and competencies become part of their personal character so that in their work environment as well as outside of it, they act with integrity. Biberhofer et al. (2018) support that argument by stating that a strong belief in the necessity of a transformation towards a sustainable economy, as well as individuals’ values and worldviews, are key principles for sustainability-driven entrepreneurs. Sustainability-driven entrepreneurs are crucial to initiating and sustaining an innovative business venture that creates solutions for the multiple challenges arising from ecological, social, political and financial crises societies are facing. Biberhofer et al. (2018, p. 21) acknowledge: “Values and beliefs as constructs driving motivation, and as initiators of action, are crucial dispositions in the context of competencies as knowledge and skills do not automatically lead to sustainable action.” Thus, values and worldviews as strong motivational drivers are needed for facilitating the necessary work performance of future change agents

Lueneburger and Goleman (2010) and Visser and Courtice (2011) also underline value orientation and value creation. Arruda Filho et al. (2019) proffer that sustainability should be

an intrinsic value in the leaders' mission statements. Tideman et al. (2013) go on, to say that sustainable share value creation is a key component of sustainable leadership.

Another component of the sustainability mindset is “*the higher self*”. The question “What is my purpose?” is important for sustainability leaders to ask themselves. This inner dialogue can be triggered through the realization of a behaviour-self-perception gap. Due to the fact that environmental problems have diffuse cause and effect relationships and are complex, as well as nonlinear, it is difficult for people in leadership positions to take the correct rational decision. It is unknown in some moments what the correct decision might be, as different partly paradox arguments hold against each other. Furthermore, not always all the information are available or predictable. Thus, the self-perception of leaders and other people might diverge from what they are actually believing in Rimanoczy (2021). They will experience a cognitive dissonance between the different poles of their inner selves. Rimanoczy (2021) describes this process of the tension between whom we want to be and how we want to live up to the best version of ourselves, as “painful”. This pain, however, is also a “powerful source of energy that propels us to action, to do something” (p.18).

Visser and Courtice (2011) have already included this aspect in emotional intelligence. Therein, they state that sincerity and reflexiveness, the ability to see own's own place in and influence a situation is part of the sustainability mindset. They state that real leadership is about greater and greater self-awareness, expressing the same idea of the ‘higher self’ as Rimanoczy with other words. Arruda Filho et al. (2019) thereby, speaks about self-awareness and the exemplification of global responsibility by sustainability leaders, thus, giving them a higher goal. Tideman et al. (2013) refer to ‘Consciousness’ as a mental model and attitude. All the mentioned characteristics of the higher self or overall sustainable vision do not entirely cover the descriptions of the other authors but give an idea about a greater goal that sustainability leaders follow despite the tangible ones.

The last component of the sustainability mindset is the “*expression of actions for the greater good of the whole*”. Beliefs and values are not enough if not put into action. It is the final step of the realization and transformative process, that is supposed to build future sustainability leaders. After receiving the necessary information, connecting the dots, questioning their own self-perception, and realizing the gap between desired personal behaviour and actual non-environmental behaviour, purpose and values are being questioned, so that this questioning finally leads to action. Action in which behaviours are changed in order to re-establish a true self-perception again. Thus, there is a path from social sensitivity to active change (Brown et al. 2019; Rimanoczy 2021). However, the tension caused by the cognitive

dissonance can also be solved in other ways, such as denial, avoidance or focusing on more materialistic goals. Thus, the dilemma and dissonance do not always lead to a sustainability mindset that motivates people into action (Rimanoczy 2021). The other authors do not mention this point specifically. However, Visser and Courtice (2011) add to the definition three more aspects: inclusive style, innovative approach and long-term perspective. Rimanoczy (2021) already included the long-term perspective in her first aspect, the system perspective. Arruda Filho et al. (2019) support Visser and Courtice (2011) aspects, they also describe sustainability leadership as participatory, inclusive and interactive. Furthermore, they underline the importance of balancing between tradition and innovation, while being critically aware of long-term decisions. Tideman et al. (2013) name 'Continuity' through a long-term horizon and 'Creativity' through the innovation for sustainable shared value creation as aspects of the sustainability mindset, and, thus, confirm Visser and Courtice (2011) list of aspects. Anticipating long-term goals is mentioned by Lueneburger and Goleman (2010) too, as well as being inclusive through collaboration.

To sum up, **Table 1** shows the most mentioned aspects of the sustainability mindset in different scientific articles. Although Rimanoczy presents the most extended definition of the sustainability mindset, the final definition for this research will be taken from Visser and Courtice (2011) who provide the most applicable description of the characteristics of the sustainability leadership mindset for the scope of this research. Therefore, these seven key characteristics are used in this research to describe the sustainability mindset:

1. systemic understanding
2. emotional intelligence
3. value orientation
4. compelling vision
5. inclusive style
6. innovative approach; and
7. long term perspective (Visser and Courtice 2011).



### 2.1.2. How does a sustainability mindset contribute to climate action?

To begin, many scientists agree that a mindset shift is of great importance when trying to cope with climate change consequences in the Anthropocene (Allen 2017; Almers 2013; Biberhofer et al. 2018; Boström et al. 2018; Ritz and Rimanoczy 2021; Kassel and Rimanoczy 2018; Moon 2013). However, how does a sustainability mindset contribute to climate action? This question is part of the first sub-question of this research paper and will be answered in this chapter.

There is a “need for a new mindset for individuals to be motivated, committed and able to transition to a green economy” emphasizes Moon (2013). He sees an important role in new environmental leaders because they understand and value the need for transitions to a green economy. In addition to generic and sector-specific skills, new leaders understand the urgent need to reduce carbon emissions and work resource-efficient as well as socially inclusive. Moon (2013) further emphasizes the importance of both private and public investments to enhance energy and resource efficiency and prevent the loss of ecosystems and biodiversity. These connections are understood by the new green leaders and adopted and applied to their specific sectors. However, the pure understanding of the need for sustainable action as part of the new mindset is not enough. Moon (2013) underlines that a green economic mindset needs to be “ecopreneurial”, meaning that leaders actually have to be willing to do something and have the motivation to act on their new mindset. They need the ability to act foresighted and to create and innovate new solutions to the status quo of current economic activities which have led the world into the paradox of living infinite growth on a finite planet. He states that new sustainability leaders with a sustainability mindset can offer new ideas, new values, as well as ecopreneurial attitudes and behaviours (Moon (2013)).

Almers’s (2013) study seeks to participate in the exploration of the question: What promotes environmentally responsible action? She points out the two existing paradigms when researching the commitment to environmentally responsible behaviour that are common in practice as well as in policy and research: the moralistic and the educational paradigm. The educational paradigm, therein, aims at strengthening the capability of the learners to reflect and take a standpoint. Thus, a change in mindset through the implementation of new and more sustainable perspectives and beliefs can facilitate sustainable development. She states: “Empathy, frustration, sorrow, indignation, and hopefulness are emotions that frequently recur in the stories of the informants about how their commitment to sustainable action was awakened” (p.121).

Ritz and Rimanoczy (2021) follow up on the importance of emotions and feelings in addition to having intellectual knowledge of data when trying to aim for sustainable development by emphasizing that the mindset is on the ground of all our decisions and thus shifting a leader's mindset inherits an enormous power to shift the path that they are guiding. They state: "the numerous changes in the context of the Anthropocene require our urgent action. Leadership at every level must be made aware of the causes of, and impact of, the changes being inflicted on the Earth's system. The transformation of the environmental context requires adaptive behaviours from everybody, leaders included" (p.123).

Moon (2013) underlines that a lack of research and understanding of the new aspects of sustainable leadership skills would bear the risk that "government policy would not be robust enough; universities would lack the information required to design effective courses, and businesses could be left in a state of flux as the demand for such skills increase" (p.2-3). As corporations bear the responsibility for the social and environmental impact of their operation, people in a leadership position need to strategically address the corporate footprint and establish a "new normal" (Moon 2013). Kassel and Rimanoczy (2018) sum up, saying 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 behaviours, for the benefit of all. As such, developing this 'lens' not only contributes to engaged sustainability leadership behaviours but also to shaping a better world." (p.464)

### 2.1.3. What factors influence a leader's mindset toward sustainability?

Having outlined the significance of sustainability mindset research and the impact on sustainability leadership and thus sustainable development, this chapter will present the factors influencing a leader's mindset toward sustainability.

Shrivastavia (2010) states: "Managing sustainably requires developing a passion for sustainability. Passion for sustainability can be taught using a holistic pedagogy that integrates physical and emotional or spiritual learning with traditional cognitive (intellectual) learning about sustainable management" (p.443). It is the emotional involvement that motivates to act and to persist in the face of obstacles. Thus, emotional engagement is very relevant when it comes to influencing a leader's mindset. Furthermore, a holistic approach is needed, combining the physical, emotional, and spiritual dimensions of learning with traditional cognitive aspects, three of the seven characteristics of the sustainability mindset can be addressed: systemic

understanding, emotional intelligence, as well as the development of a compelling (spiritual) vision (Rimanoczy 2021).

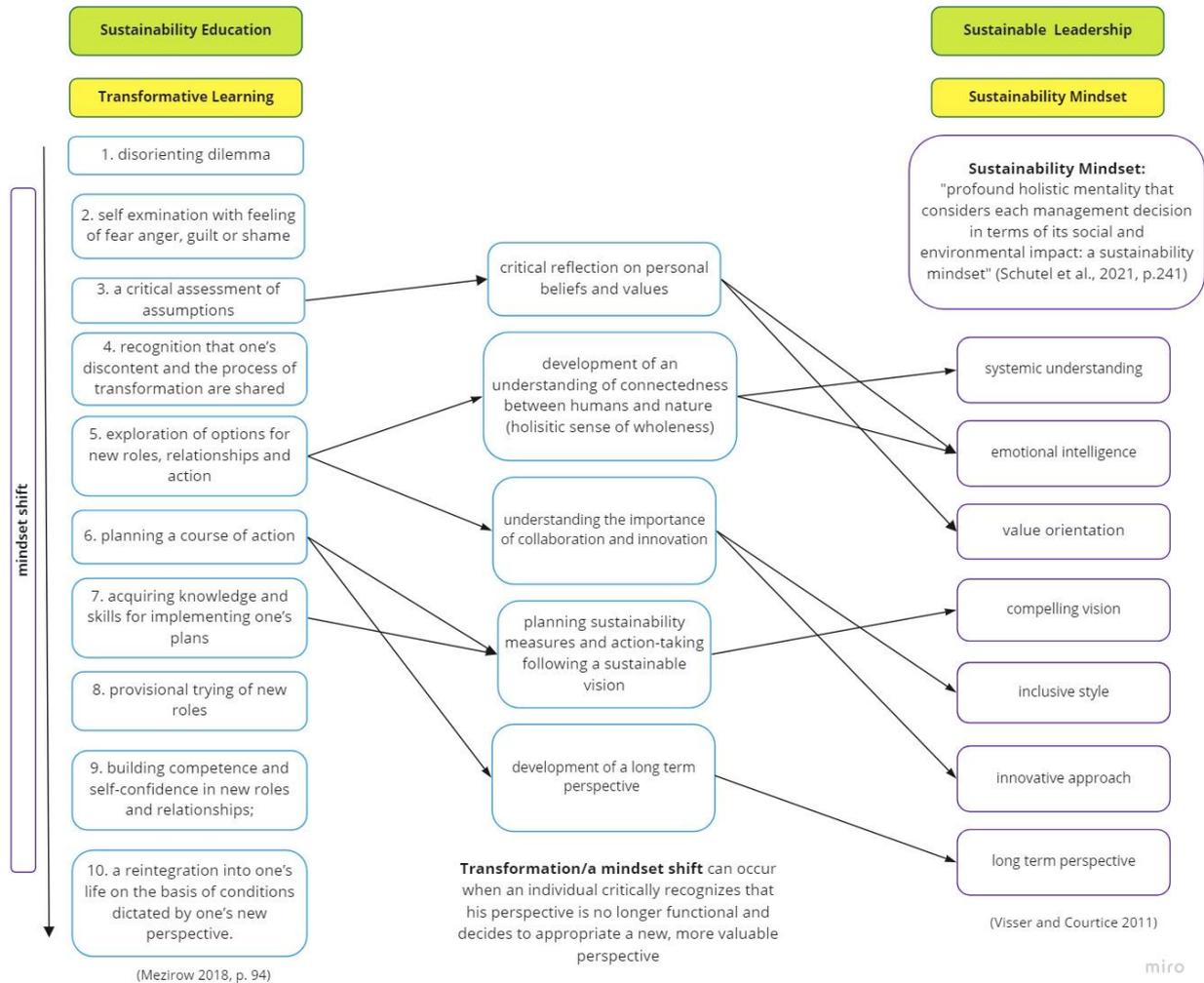
In contrast to other leadership mindsets, leaders with a sustainability mindset have an ecological concern to consider and do not exploit an opportunity as an end in itself. They “see reality through others’ eyes”, showing compassion and empathy while suspending ignorance and short-termism (Moon 2015, p. 10). Therefore, improving emotional intelligence and strengthening the feeling of connectedness are two factors that influence a leader’s mindset toward sustainability.

Moreover, leaders with a sustainability mindset do not limit their decisions to rational thinking, they inherit emotional and intuitive wisdom that helps to take considerate, holistic long-term decisions. Information is not broken into pieces in order to analyse them but is rather connected and intended to understand the multicity of effects and outcomes interacting with each other. A leader with a sustainable mindset acknowledges the complexity of environmental problems and tries to run multiple feedback loops in his decision-making process (Rimanoczy 2021). On this basis, it can be stated that another factor would be to enhance the understanding of long-term consequences and the teaching of holistic system thinking in order to develop a systemic understanding of the earth and its ecosystems.

Furthermore, another factor influencing a leader’s mindset would be the appeal to their values toward more compassion, conscientiousness, and interconnectedness. These values are influencing the inclusive style of sustainability leadership. The innovative and creative dimension of the sustainability mindset can be addressed through dynamic working styles, exchange in the team, as well as through participation in courses and workshops facilitating innovative and creative thinking (Kennedy et al. 2012). The relationship between transformative learning and the sustainability mindset can be seen in **Figure 1**.

All in all, a sustainable mindset is an ambitious goal, because it comprises a broad variety of elements, including principles, values, and beliefs, and it cannot be switched on demand. The degree of coordination when trying to influence a leader’s mindset is staggering. This means that there is no single method that could succeed in teaching it on its own, nevertheless, there are no encompassing learning methods.

The next chapter will give insight into transformative learning, one method that aims at facilitating sustainable leadership through forming a sustainability leadership mindset.



**Figure 1** Relationship between transformative learning and the sustainability mindset of people in leadership positions (Author, 2022)

## 2.2. Transformative Learning

This chapter will thematise sub-question 2: What is transformative learning? How is transformative learning theorized to solve sustainability challenges in comparison to traditional learning? And what is the potential of transformative learning to “solve the impossible”? The chapter will start with the definition of the concept of transformative learning. It will be followed by an analysis of how transformative learning is theorized to solve sustainability challenges. Therefore, the dots between today’s societal and environmental challenges and the purpose of transformative learning will be connected. The chapter will finish by critically reflecting on the potential of transformative learning in solving the challenges of societal complexity, the unpredictability of problems and the dynamic environment of policymaking.

### 2.2.1. What is transformative learning?

“Transformative Learning is a deep shift in perspective during which habits of mind become more open, more permeable, and better justified” (Cranton and Taylor 2012, p. 194). The concept was first launched in 1978 by Jack Mezirow, Professor of Adult Education at Teachers College, Columbia University, New York. The professor urged us to recognize a new critical dimension of learning in adulthood. One that enables to recognize and reassess the structure of assumptions and expectations which frame our thinking, feeling, and acting. Mezirow underlines the importance to focus on the ‘meaning perspective’, investigating what meaning adults give to their subject and goals and how successful they are in achieving them. He says: “Transformative learning is an adult dimension of reason assessment involving the validation and reformulation of meaning structures” (Mezirow 2018, p. 93). Interesting for this research is, that as Mezirow states, most transformative learning takes place outside of awareness, it is rather an intuition that substitutes for critical reflection of assumptions. This may happen for instance through life crises. He describes that type of transformative learning as *epochal*, meaning that sudden major reorientations in habit of mind are often associated with a disorienting dilemma, such as a life crisis. In contrast, transformative learning can also be *cumulative*, meaning that a progressive sequence of insights results in changes in point of view and lead to a transformation in habit of mind. The transformative learning experiment this research paper is focusing on is epochal. As can be synthesised from **Figure 1**, transformative learning affects the seven characteristics of the sustainability mindset, which are systemic understanding, emotional intelligence, value orientation, compelling vision, inclusive style, innovative approach; and long-term perspective (Visser and Courtice 2011). The transformative learning experiment conducted in the case study will simulate a life crisis, by showing the participants the strong negative effects of climate change, and their role in it. If through the experiment an emotional crisis, also referred to as the disorienting dilemma is triggered in the participants, transformative learning happens. The participants transform their inner beliefs, assumptions, and values as a consequence of the confrontation with the new and emotionally loaded information they were exposed to (Mezirow 2018). After the disorienting dilemma, the next phases of transformative learning are triggered, and the shift in a person’s mindset commences that will lastly become visible in his or her activity. Mezirow summarizes the following phases of meaning when transformation occurs:

- a disorienting dilemma;
- self-examination with feelings of fear, anger, guilt or shame;

- a critical assessment of assumptions;
- recognition that one's discontent and the process of transformation are shared;
- exploration of options for new roles, relationships and action;
- planning a course of action;
- acquiring knowledge and skills for implementing one's plans;
- provisional trying of new roles;
- building competence and self-confidence in new roles and relationships;
- a reintegration into one's life on the basis of conditions dictated by one's new perspective (Mezirow 2018, p. 94).

As transformation means a deep structural shift in the basic premises of thought, feelings, and actions, it is not just a development of thought and feelings in one direction but can rather be described as a shift of consciousness that dramatically and permanently alters the way of being and behaving in the world. It goes deeper than just changing behaviour in a moment of limited time, but it is more permanent and strong (Henderson 2002). Hence, transformation is not punctual but more encompassing and influences the understanding of ourselves as well as the self-location in relationships with our surroundings, therein including human relationships and the one to nature (Ritz and Rimanoczy 2021).

To highlight, the two major elements of transformative learning as defined by Mezirow, are critical (self-) reflection on assumptions, therein critically assessing the sources, nature and consequences of our habits of mind, and second, participating fully and freely in dialectical discourse to validate a best reflective judgement (Mezirow 2018). By using the term best reflective judgement Mezirow refers to Kind and Kitcheners definition: “the process an individual evokes to monitor the epistemic nature of problems and the truth value of alternative solutions” (p.2).

In order for transformative learning to happen, three basic conditions have to be met: First, the right learning frame must be set. This includes that the learning environment provides affective support to the participants and gives space to information exchange while also assuring equal access to information. Second, the participants are required to bring personal capacities for self-awareness, critical reflection, discernment, and inner dialogue. Third, the learning experiences should be approached appreciatively and critically at the same time by the participants. Hence, a certain degree of flexibility is required from the participants and the group to learn from one another as well as to reflect on themselves (Sterling 2011).

### 2.2.2. How is transformative learning theorized to solve sustainability challenges in comparison to traditional learning?

In this chapter, the connection between the new nature of problems and challenges in policymaking and the consequential need for new solutions will be outlined. The focus will lie on transformative learning and its capacity “to solve the impossible” by providing new solutions to the wicked problem of climate change (Mälkki and Raami 2022)

As has been displayed at the beginning of this research, climate change and today’s dynamic and complex entanglement of problems and stakeholders in public policymaking have changed the policy environment significantly. The new circumstances constitute extremely complicated (wicked) problems for which old solutions are insufficient and new mechanisms are needed (Mälkki and Raami 2022). The purpose of transformative learning is “to foster broader, more elaborate, integrated, and open perspectives, meeting the demands of societal complexity” (p.74). Hence, the nature of current challenges and societal problems matches the purpose of transformative learning. It is, therefore, timely even after several decades (Mälkki and Raami 2022; Mezirow 2018). To be concrete, transformative learning triggers the critical reflection on personal beliefs and values, as a consequence, the person gains emotional intelligence, re-orientates their values and gets a better systemic understanding, as new perspectives are taken. Furthermore, transformative learning theory states that it helps to develop a feeling of connectedness between humans and nature and therefore created a holistic sense of wholeness. Thereby, the systemic understanding and the emotional intelligence of the person are affected positively. Another point is, that transformative learning teaches the importance of collaboration and innovation, both important characteristics of sustainability leaders. On top of that, by planning a course of action and by acquiring knowledge and skills for implementing one’s plans, the future sustainability leader gets a compelling sustainability vision and becomes motivated to act on it. Lastly, through planning and a new holistic understanding of the relationships between nature and humans, the person develops a long-term perspective that permits long-term planning, an important characteristic of sustainable leadership (**Figure 1**).

In comparison to old mechanisms of problem-solving taught in traditional learning, transformative learning tries to influence the emotional and metacognitive sphere of the learning person while challenging the learners to think beyond the premise of rationality. Traditional learning teaches linear thinking and logical problem-solving methods, which work well with logical problems when all the relevant information is available. The rational

capacities of human consciousness have been addressed extensively in the past in order to address climate change and few have been achieved to solve this wicked problem (Mälkki and Raami 2022). As environmental pollution keeps increasing, new educational methods are hoped to bring better results. Thus, transformative learning goes beyond the rational learning experience and aims for a change in the nature of consciousness, acknowledging the non-linear process of information acquisition (Taylor 2017).

It is supposed to work in the following manner: Through an unexpected and disorienting experience, participants challenge the former perceptions about the meaning and adopted values (Elias 1997). Transformative learning runs under the premise that a problem cannot be solved with the type of thinking that created it. Hence, “the most fruitful way to resolve these dilemmas simply may be to change the way we think” (Elias 1997, 1). To clarify the above-mentioned terms, the term ‘transformation’ in the learning experience refers to the transformation of meaning schemes and meaning perspectives. Meaning schemes are beliefs about oneself or the world and the meaning perspective refers to comprehensive worldviews through the reflection on underlying premises in order to develop more inclusive, differentiated, permeable, and integrated perspectives (Mezirow 1991). Furthermore, Henderson (2002) points out ‘critical thinking’ as the differentiating factor between traditional and transformative learning.

The viewpoint of Sterling (2011) towards traditional education is also critical, he says that “a great deal of learning, both every day and through formal education, makes no positive difference to a sustainable future, and may indeed make that prospect less rather than more likely” (p.18). He underlines his opinion by referring to Raskin (2008) who wrote about world lines as a framework for exploring global pathways. Therein, the pathway towards more sustainability and the importance of sustainability scenarios as a method to illuminate the (dooming) future depend on a shift of perspective and transformational change. Raskin (2008) proffers: “The shape of the global future rests with the reflexivity of human consciousness – the capacity to think critically about why we think what we do – and then to think and act differently” (p.469).

Boyd and Myers (1988) describe the major aim of transformative education in an open society to be the promotion of personal transformations. For them, transformative educations mean acknowledging and understanding the dynamics between the inner and the outer world, helping individuals to expand their consciousness and the “working toward a meaningful integrated life as evidenced in authentic relationships with self and others” (p.261). This involves the active realization of an individual’s “true being”, thus, moving the person to

psychic integration, meaning that critical insights get revealed, while fundamental understanding is developed and followed by acts with integrity (p.262). Elias (1997) sees the transformative learning experience as an expansion of consciousness through transforming basic worldviews and specific capacities of the self. It is facilitated through consciously directed processes, such as analysing underlying premises and beliefs. As Ritz (2021) puts for, transformative learning theory can be understood as a lens for the development of compassion in the face of adversity.

To conclude, transformative learning appeals to a deeper level of consciousness and changes the way people think and perceive the world. It is, therefore, expected to be a much more adequate tool to address sustainability challenges than traditional learning methods.

### 2.2.3. What is the potential of transformative learning to “solve the impossible”?

As the previous chapter has outlined, transformative learning is different to traditional forms of learning. Thus, questions about how to investigate transformative learning have been raised by adult educators (Ely 2022).

The effect of a transformative learning workshop of three days is limited, however, not trivial. The time it takes to change manifested pre-existing beliefs should be taken into consideration when interpreting the results of this research. Deeply rooted pre-existing beliefs need time to change and finally transform (Kassel and Rimanoczy 2018). Thus, time is an important factor when analysing the change in the mindset of people.

Another issue raised by global environmental scientists is the question of place and identity. These two are key factors mediating the relationship between empathy and sustainability. Brown et al. (2019) suggest that empathy, as a reaction triggered by emotional disruption, is situated and emplaced in space and time. “Whether empathy leads to sustainability depends on whether empathic responses transcend differences between groups within a place and across spatial boundaries” (p.13). Furthermore, relationships with nature are diverse across societies, therefore, place and identity inherit the potential to foster social and spatial exclusion as well as inclusion. As places have multiple dimensions that help to define identity processes at collective and individual levels, the implications of the factor of place are important when analysing meanings and emotions attached to particular environments. What makes it difficult is, that places are highly dynamic and vary over time. Important for this research is, that the impact of transformative learning has to be so far-reaching that “the ability to move beyond the local, to national and global scales in the scope of empathic engagement”

has to be achieved in order to foster sustainability. Without “conceptions of place, community and identity beyond those based directly on kinship and immediate locality” (Brown et al. 2019, p. 13), no contribution to sustainability can be made. Therefore, the transformative learning experiment needs to encourage people to feel empathy towards those living at a physical distance from them. It involves a sense of cosmopolitanism that comes accompanied by scepticism for the effects of local belonging and support for the loosening of local bonds (Tomaney 2013).

To conclude, time, place and identity are factors that have to be kept in mind when investigating the effect of transformative learning.

### 3. Methodology

#### 3.1. Type of Research

In order to answer the research question of this thesis, mixed-method research has been conducted to investigate the extent to which transformative learning facilitates sustainability leadership through enhancing the sustainability mindset of leaders. The research was conducted among 14 employees in shared leadership positions of the Deutsche Filmakademie Produktion GmbH. Data was gathered through literature reviews and two online questionnaires that were realized before and after the participants took part in the transformative learning experiment, called the WEEK.

The questionnaires were conducted to gather information about the effect of transformative learning on their sustainability mindset, thus shaping their sustainable leadership capacity. Subsequently to qualitative questions, qualitative open-ended questions were asked in order to deepen insight into individual responses. In addition to conducting the questionnaire, selected literature was consulted to incorporate existing research. The present work thus combines elements of case study research and literature work.

The philosophical worldview proposed in the study is the pragmatic worldview. It runs under the premise that the research problem is the focus of the researcher, thus all research approaches available to understand the problem are used. Pragmatism is not committed to any research method, thus, using a mixed-method research approach is often used as the world is not seen as an absolute unity which has to be analysed only in one way, but it can rather be analysed using different worldviews, assumptions as well as using different forms of data collection and data analysis. (Creswell and Creswell 2017).

### 3.2. Research design

This chapter will present the research design of the study and provide information about design choices and research approaches.

The general research approach is deductive, taking the theory of transformative learning and testing its usability for sustainable leadership education in a single case study. The research has been conducted on a longitudinal time horizon. The first questionnaire was distributed on April 13, 2022, at the company in question in Berlin. The participants had one week to complete the questionnaire. For this, they could fill out the questionnaire either in the office or from their home office. The first pre-treatment questionnaire was answered by 15 out of 20 people in total. Since one questionnaire was incompletely filled out, only 14 results could be included in the analysis. The experiment took place for three days at the end of April. After 4 weeks of processing the workshop, the second post-treatment questionnaire was handed out on May 20, 2022. It was answered by 8 participants, thus showing a dropout rate of 42,9%.

The participants of the questionnaires were chosen by convenience; thus, it is a non-probability sample which is drawn from a part of the population that is close to hand. On the backdrop of financial and timely limitations of this study, convenience sampling offered a cheap, efficient, and straightforward way to conduct my research. In this case, the company had scheduled the transformative learning experiment the WEEK before I informed them about wanting to accompany the experiment with my research. Thus, the organizational setting of the case was already set, and it was left for me to design, distribute, and analyse the questionnaires.

The mixed-method research approach is especially useful for this research because this paper aims at exploring an under-researched topic (Rodríguez Aboytes and Barth 2020), in which every research method can be used to gain new insights, without limiting the research to either qualitative or quantitative research.

It helps the researcher to triangulate the data, meaning to understand the data in the right way, compare the outcomes of the different methods and see if they correspond with each other. It facilitates the comparison of quantitative and qualitative data sets to produce well-validated conclusions. The approach also helps to explain quantitative results with subsequent qualitative data. Furthermore, it uses qualitative data to develop a theory that is subsequently tested, and lastly, the multi-method approach enhances a study with a supplemental data set, either quantitative or qualitative. However, mixed methods also inherit the challenge for the researcher to work out how to interpret conflicting results and report them (Migiro S. O. and Magangi B. A. 2011). For this research, I chose to analyse the quantitative data and use the

qualitative data as supporting information to get insight and background information into the quantitative answers.

### 3.3. Experimental Procedure - The WEEK

This chapter shows how the WEEK applies the transformative learning theory in practice. The WEEK is designed by Laloux and Gerin (2022) to “facilitate mind and action capable to shape a sustainable future for everyone”. Just as Mezirow's (2018) theory states, the participants of the transformative learning experience go through different stages that can be divided into four different phases. These phases can be found in the experiment the WEEK.

In the first phase, the people are confronted with some disruptive event, which challenges their point of view. Mezirow (2018) named this phenomenon the “disorienting dilemma”. A disorienting dilemma leads individuals to question their creation of meaning. Perceived experiences become incongruent with the new way they make sense of the world. Thus, people either tend to ignore the new experience or question the way they interpret it (Ritz 2021). An indicator for a functioning transformative learning experiment would be the second reaction, interpreting the world and one’s position in it in a new context. In the case of the WEEK, the first phase is called “the descent”. It is stamped by sadness, anger, shock and despair (Laloux and Gerin 2022). A triggering event, such as seeing the first episode of the WEEK, prompts inner discomfort and perplexity, a state that human beings want to avoid and will be likely to look for ways to get out of this discomfort. Avoiding discomfort is one of the four human psychological needs (Grawe 1999). Therefore, if transformative learning has been successful, a change of perspective and mindset can be observed in the results of the experiment. Developing a sustainability mindset means, for instance, having a higher awareness of the environment and a higher commitment to act towards sustainable goals in the long term. Both aspects have a positive effect on organizations when it comes to implementing a sustainable development strategy (Lieverink and Wurzel 2018).

After the discomfort, the second phase starts. It offers a way to tranquillize the inner disruption and “heals the sadness and anger” by giving the participant hope so that they feel control and power again. The need for control and self-determination is the second psychological need of humans (Grawe 1999). In the second phase, the learner then critically reflects on beliefs, assumptions and values that shape their current perspective. This new perspective helps the individual to remove the discrepancy between their (lack of) action and their new belief system. Critical thinking is required by the participants to engage with their

own perspectives and to appraise themselves in order to change their perspectives (Ely 2022). The WEEK includes this step in “the reckoning”, nudged by the second episode. In there, questions are asked about the original beliefs of the participants. One example of an original belief could be that people think one has to sacrifice in order to “save the planet”. By questioning this assumption, other questions can be asked: “What if we have actually got more to gain than to lose?” (Laloux and Gerin 2022).

The third phase of Mezirow’s transformative learning theory includes the development of a new perspective of the participant to deal with the discrepancy surfaced by the triggering event. Laloux and Gerin (2022) talk in this context about hope and the importance to find “our own unique way to help turn this ship around”. For that matter, inspiration, energy, and determination are needed. And in the last phase, the new perspective, beliefs, assumptions, and values are integrated into the life of the participants. This process is not limited to time, though the WEEK proposed 30 days for actively working on the integration of the new perspective and transformed belief system. They call it “the adventure”, and it will be triggered by the third and last episode. Therefore, the second questionnaire is conducted after the 30-day time period.

The questionnaire was administered asking the same questions for the two different points of time. The questions aimed at measuring the seven aspects of the sustainability mindset., mentioned in the previous chapter. The questionnaire offered closed and open-questions to investigate the degree of sustainability mindset. Open-questions were

Q1 (*What does sustainability mean to you?*) and Q5 (*How does sustainability influence your job?*). The first questioned aimed at exploring the depth of systemic understanding as key characteristics of a sustainability mindset of the participant. The fifth question aimed at exploring the reasoning of a positive answer to Q3 (*Does the topic sustainability influences your job?*) – *Filter question*, and if Q3 ‘yes’: Q4a (*How much does it influence your job?*) and appealed to explore the impact of transformative learning on all seven characteristics, leaving the answer open for the participant to answer.

The other set of questions were to be answered on a Likert scale from 0 to 10. Thereby, Q2,1 (*How much are you affected by the negative consequences of climate change?*) aimed at investigating the systemic understanding and long-term perspective of the participant. Q2,2 (*How much are sustainable thoughts and behaviours part of your identity?*) was directed to explore the value orientation of the answering person. Q2,3 (*How much are you emotionally affected by the negative consequences of climate change?*) gave insight into the emotional intelligence and value orientation, as characteristic of the sustainability mindset. Q2,4 (*How high do you rate your personal responsibility to act sustainably towards other human beings*

*and the ecosystems of our planet?*) addressed the evaluation of systemic thinking, value orientation, compelling vision, inclusive style and long-term perspective. Q2,5 (*How high do you rate your company's responsibility to act sustainably towards other human beings and the ecosystems of our planet?*) was asked to get insight into the systemic thinking, value orientation, vision, inclusive style, and long-term perspective of the participant. Q2,6 (*How high is your commitment to long-term sustainable goals?*) directly aimed at exploring the long-term perspective of the leader. Q6 (*How important do you rate the following aspects when trying to achieve your company's sustainability goals?*) aimed at investigating the characteristics of systemic thinking, compelling vision, inclusive style, innovative approach, and long-term perspective. The aspects were:

- 1) Partnerships with other organisations, institutions, and people in Germany
- 2) Partnerships with other organisations, institutions, and people globally
- 3) Creativity/Innovation
- 4) Institutional financial support
- 5) Institutional personnel support (Know-How, Consulting)
- 6) Transformative education, Workshops like the WEEK
- 7) Sustainable leadership
- 8) Others

In order to get more insight Q7 (*What is your motivation to act sustainable?*) also aimed at getting more insight into the strength of systemic thinking, value orientation, emotional intelligence, compelling vision, inclusive style, and long-term perspective of the participants. Depending on the respective answers, different characteristics could be measured.

## 4. Results

### 4.1. Quantitative results

This chapter presents the quantitative results of the case study which was conducted to gain empirical data to analyse the research question about the extent transformative learning affects the sustainable leadership mindset.

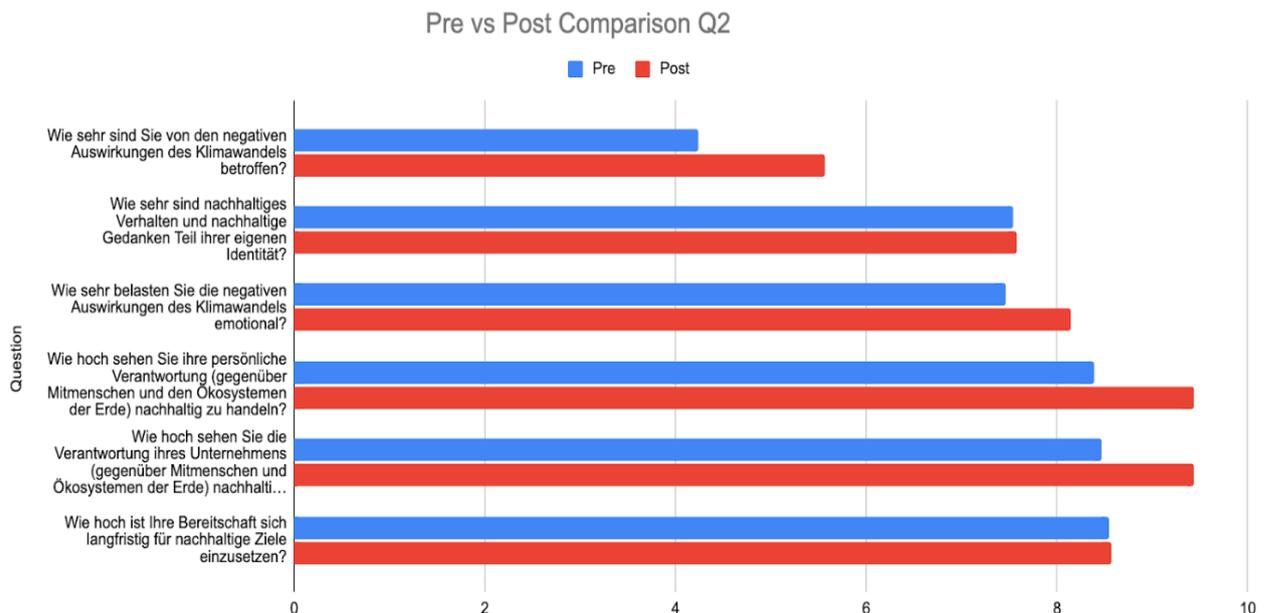
In total, 13 respondents completed the questionnaire before the experiment, named the WEEK, and 8 respondents afterwards. Of these, 5 respondents were able to be matched between the two questionnaires. In order to quantify the potential impact, one can look at the differences in average responses to the quantitative questions (Q2, Q4a, Q6) between the overall average and respondents which were able to be identified across surveys (**Table 2**).

	Overall	Matched
Pre	7.55	7.87
Post	8.30	8.21

**Table 2** Comparing the average response values of Q2, Q4a, and Q6 between the matched group and the overall average in both questionnaires (Author, 2022)

We do observe that the participants who were able to be matched had overall higher response values in the initial questionnaire. Taken as a whole, higher values tend to correspond to stronger feelings about the seriousness of the climate problem and the importance of certain ways to address the problem.

The two figures (**Figure 2 & 3**) summarize the results across the two questionnaires. The bars of the figures show the mean across respondents of the Likert-scale answers from 0 to 10.



**Figure 2** Pre vs Post Comparison of Q2 (Author, 2022)

The questions in **Figure 2** in English are:

Q2,1 (How much are you affected by the negative consequences of climate change?)

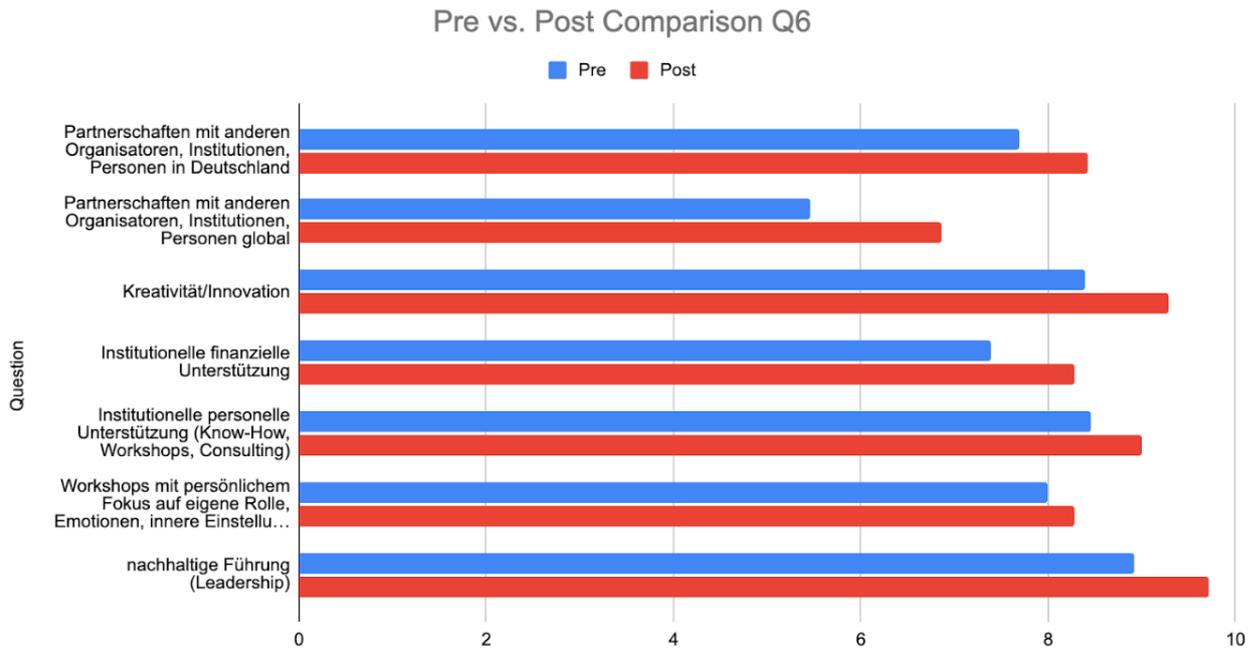
Q2,2 (How much are sustainable thoughts and behaviours part of your identity?)

Q2,3 (How much are you emotionally affected by the negative consequences of climate change?)

Q2,4 (How high do you rate your personal responsibility to act sustainably towards other human beings and the ecosystems of our planet?)

Q2,5 (How high do you rate your company's responsibility to act sustainably towards other human beings and the ecosystems of our planet?)

Q2,6 (How high is your commitment to long-term sustainable goals?)



**Figure 3** Pre vs Post Comparison Q6  
(Author, 2022)

The aspects of **Figure 3** in English are:

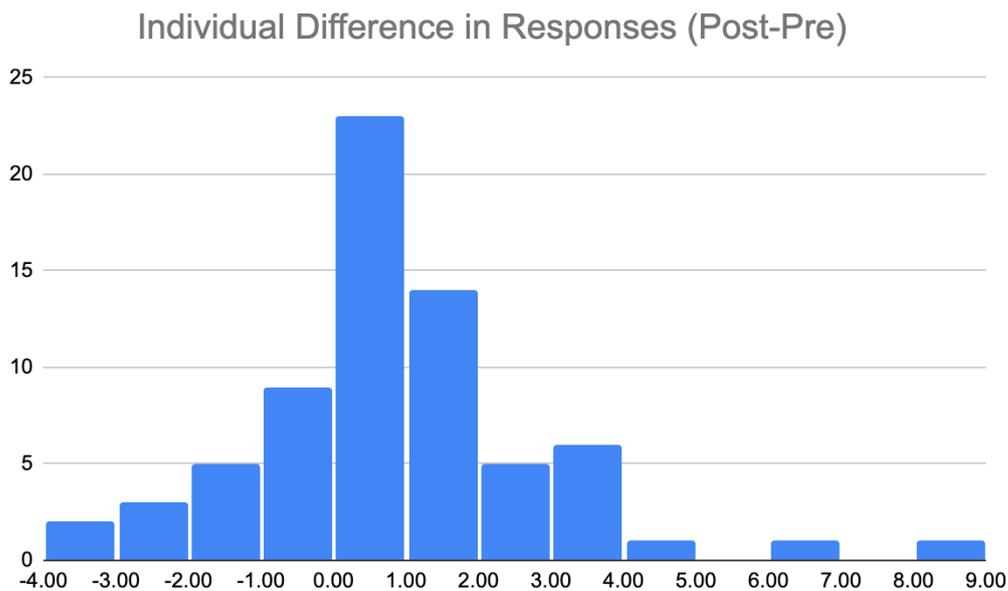
- 1) Partnerships with other organisations, institutions, and people in Germany
- 2) Partnerships with other organisations, institutions, and people globally
- 3) Creativity/Innovation
- 4) Institutional financial support
- 5) Institutional personnel support (Know-How, Consulting)
- 6) Transformative education, Workshops like the WEEK
- 7) Sustainable leadership

Overall, the data show a moderate increase in values in response to several questions. The single biggest absolute difference was to the question “*Wie sehr sind Sie von den negativen Auswirkungen des Klimawandels betroffen?*” (*How much are you affected by the negative consequences of climate change?*). The data also shows smaller changes to several other sub-parts of Question 2, mostly the respondents' perspectives on how strongly they feel emotionally affected by climate change, and how much responsibility they believe their company as well as themselves have to conduct themselves sustainably. The magnitudes of these differences are all at least double the difference one can observe in **Table 2**.

The question around the negative impacts on the personal level has the highest absolute difference. One can also observe an increase in average responses to every sub-

part of Question 6 (*Wie wichtig schätzen Sie folgende Punkte bei der Erreichung der Nachhaltigkeitsziele ihres Unternehmens ein? / How important do you rank the following aspects to achieve your company's sustainability goals?*). Particularly, the largest change was in the respondent's perception of how much partnerships with other organizations (globally) could help their company reach their sustainability goals. After this, creativity and institutional financial support were the factors which received the greatest boost in the post-survey. Once again, the effect observed here is much larger than that seen in **Table 3**.

Since there are 5 respondents who were able to be matched across questionnaires, one can also take a look at individual responses to the surveys and how they changed before and after the WEEK. **Figure 4** shows the distribution of differences in responses for individuals to the same question between the different questionnaires:



**Figure 4** Individual Differences in Response (Pre-Post)  
(Author, 2022)

The data shows that for the most part, individuals had small or no change in their responses to questions ( $\pm 0-2$ ), a smaller number of moderate changes ( $\pm 3-4$ ) and then an even smaller number of large changes ( $\pm 5+$ ). Investigating these outliers, the greatest single change was in one individual's perception of how much partnerships with other institutions (globally) could help their company achieve its sustainability goals. The second most was how much one individual felt personally impacted by climate change. These outliers correspond to questions which we saw on average shifted from the pre- to the post-questionnaire, and likely help explain this overall shift as well.

## 4.2. Qualitative results

In this chapter, the qualitative results will be presented. The focus will lie on the matched participants, as comparing qualitative answers for the general group is seen as less effective for the purpose of this research. The first question (Q1) asked the participants about their understanding of sustainability. The answer of the participants showed a broad understanding of the topic of sustainability. Their understanding did not change significantly through the workshop. The room for change was small, as the understanding was already high in the beginning and the participants seemed to be well informed about what sustainability means. Regarding the question, of how sustainability affects the work of the participants, the answers changed slightly. After the workshop, three participants felt that all areas of their work are affected by the topic of sustainability, whereas before only certain aspects of it were mentioned by them. The other two matched participants gave similar answers in both questionnaires, thus, no change in how sustainability affects their job could be observed.

Asking to the motivation for sustainable action, the five matched participants had similar motivations for acting sustainably. They all answered before and after the workshop that their inner values and beliefs and the wish to take responsibility towards others and the environment are their main driving factors. Rules and regulations were not mentioned at all, and spiritual or religious values were mentioned once. The feeling of connectedness was mentioned by three out of five participants as a reason for sustainable action.

The post questionnaire asked the participants about their experience of the transformative learning workshop. They positively mentioned the exchange of thoughts with others and the feeling of connectedness during the workshop. In contrast, they negatively mentioned the content as well as the production of the short movies. Having in mind that the workshop was conducted at a production company, a critical view of the style of production is comprehensible. Regarding the learning methods and strategies, the participants again mentioned positively the exchange with fellow participants as well as the different phases of the workshop. Only one of the thirteen participants had participated in a similar educational workshop before. The last qualitative question of the second questionnaire asked about what had changed in regard to the understanding of sustainability since the WEEK. The most mentioned answer by the participants was the feeling of urgency and the motivation to take action.

## 5. Discussion

The aim of this research was to analyse the effect of transformative learning on the sustainability mindset of leaders. The research was conducted on the premise that climate change challenges leaders to act more sustainably in order to guarantee a futureproof steering style in which besides economic factors, social and environmental factors contribute to the decision-making process of leaders. This research aimed at exploring the educational method of transformative learning to see how it affects the mindset of leaders in regard to their sustainable behaviour, perspective, and beliefs. The question is of particular importance because the sustainability mindset is an under-researched concept (Hallinger and Suriyankietkaew 2018) with a great potential of changing sustainability leadership to become more holistic, inclusive, long-term oriented and compelling (Visser and Courtice 2011). Thus, this research investigates how effective the transformative learning tool is to facilitate the development of a sustainability mindset and thereby revolutionise leadership education to generate future-proof leaders.

Hypothesising that transformative learning is a useful tool to transform a leader's mindset towards more sustainability is in line with the transformative learning theory of Mezirow (2018). The results of the case study can answer the question to a limited extent. The overall response rate was quite low. In total, 13 respondents completed the questionnaire before the experiment, and 8 respondents afterwards. The fact that, of these, only 5 respondents were able to be matched between the two questionnaires raised the question of which perspective to take when discussing the results further, and specifically what sort of differences are visible before and after the workshop.

There is certainly potential that there is a biased subsample for the post-respondent group, namely that respondents who completed both surveys are more likely to have been impacted by the workshop, as well as take the topic more seriously generally. Furthermore, the employees of the Deutsche Filmakademie Produktion GmbH know me because I work at the company since April 2021. In order to decrease the risk of social-desirability bias, the participants were informed about the anonymity of the results. The answers given by the participant were anonymized using aliases instead of names. However, it is still possible that some of the interviewees gave socially desirable answers.

The criteria objectivity, nonetheless, is given because all participants became the same, questionnaire, their answers were anonymized and the completion of the questionnaire took place without the presence of the researcher. Therefore, neither the participants nor the

researcher was influenced by the identity of the other and the data was treated equally unbiased from the fact who provided the information.

Having chosen the participants by convenience, the research has a risk of sampling bias. The participants were not chosen randomly but were asked to participate voluntarily and by availability. Thus, certain types of people were more likely to become part of the sample than others ones and an over- or under-representation of the population may be possible. Therein, factors such as time constraints, open-mindedness or interest in sustainability play a role when determining the underlying reasons the participants chose to participate in the study.

Therefore, the results lack generalizability. Nevertheless, convenience sampling is a cheap and simple tool which is especially opportune for the financial as well as time constraints this research is facing. On top of that, the ongoing COVID-19 pandemic makes convenience sampling a more appropriate sampling method, as finding participants for a study has become more difficult due to social distancing and the decrease in the occurrence of cooperative offline workshops. Thus, convenience sampling is useful and it is often used for pilot testing. Moreover, this research paper is one of the first studies investigating the functioning of transformative learning on the sustainability mindset of leaders in shared leadership positions.

Another limitation of this study is the non-response bias. Having an overall low number of responses, the research bears the risk of lacking generalizability. With a dropout rate of 42,9%, the comparison between pre-and post-treatment is affected in its comparability. However, as mentioned before, this research does not aim at giving general results, but aspires to give a direction for future research and explores the possible relation between transformative learning and sustainability.

Having the sampling bias and the non-response bias in mind it can be stated that the general reliability of the research may be affected. Conducting the research again may provide different results due to the fact that a new sample may have different characteristics than the last. Thus, the questionnaire has low reliability when used in combination with convenience sampling.

The validity of this research is given under the acknowledgement that the sustainability mindset of leaders is influenced by more factors than being exposed to transformative learning. The sustainability mindset is shaped by the identity of the participant, and by the places, they have seen or lived in. The mindset is not a static construct but changes dynamically over time, thus, bringing different results to a later point in time. Therefore, validity is given to a certain extent but cannot be given exhaustively.

Nevertheless, the data showed that the participants which were able to be matched had overall higher response values in the initial questionnaire. Taken as a whole, higher values tend

to correspond to stronger feelings about the seriousness of the climate problem and the importance of certain ways to address the problem. Given that the shift is not too dramatic and the response counts are already low, I decided to consider all responses in my analysis. This effect should, however, needs to be kept in mind when interpreting the results.

Overall, the data showed a moderate increase in values in response to several questions. Indicating that after the workshop, individuals felt much more that climate change affects them on a personal basis. The data also showed smaller changes to several other sub-parts of Question 2, mostly the respondents' perspectives on how strongly the individual is emotionally affected by climate change, and how much responsibility they believe their company, as well as themselves, have to conduct themselves sustainably. The magnitudes of these differences are all at least double the difference one can observe in **Table 2**, meaning that this effect is likely not just a consequence of the change in samples.

Although the question around the negative impacts on the personal level has the highest absolute difference, it can be argued that the questions around the individual and company responsibilities were more greatly impacted to do a greater relative difference. That is to say, the increase from the pre- to post-survey represents a greater percentage of the total available room to increase.

As the data showed an increase in average responses to every sub-part of Question 6 (*How important do you rank the following aspects to achieve your company's sustainability goals?*), it seems that overall, the WEEK helped respondents see the importance of different factors which could help their company achieve their sustainability goals. The outliers of **Figure 4** indicate that transformative learning workshops, such as the WEEK, can have the ability to drastically change an individual's point of view on certain topics.

This statement is underlined by the answers to the last question of the second questionnaire. The participants stated that their commitment toward sustainable action as well as the feeling of urgency to become active has changed through participating in the experiment. Feeling a higher urgency to act and to commit to long-term action shows that the sustainability mindset characteristics 'systemic understanding' and 'long-term commitment' increased throughout the experiment. Furthermore, the participant increased their rating on how much global collaboration is needed in order to achieve the sustainability goals of their company. Thus, 'inclusive style' is another characteristic of the sustainability mindset that gained importance. The degree of 'value orientation' was already high in the first questionnaire, the participants stated that their inner values are one of their highest motivators for sustainable action. Thus, little room for improvement was left. However, the aspect of 'emotional

intelligence can be interpreted as having increased due to the fact that the respondents felt slightly more responsible for their actions towards others than before. Increased empathy can be a cause for that increase. The aspects ‘compelling vision’ did not change significantly. To sum up, the results show, that the WEEK positively influenced the sustainability mindset of the participants.

## 6. Conclusion

This study explored the question ‘To what extent does transformative learning facilitate sustainable leadership through the development of a sustainability mindset?’.

From the results, it can be concluded that participating in a transformative learning experiment can increase the sustainability mindset of a person in a shared leadership position. The perception of how much a person feels affected by climate change and how urgently they feel to become active, as well as the fact that collaboration was seen as more important after than before the workshop, are indicators for the increase of the sustainability mindset of the participants of this case study.

Translating the positive responses into sustainability mindset characteristics, a change in ‘systemic understanding’, ‘emotional intelligence’, ‘inclusive style’ and ‘long-term perspective’ has been observed.

When interpreting the results, the limitations of the study, however, have to be acknowledged and a general transferability of the results to the population is not possible at this stage of research. Further studies on the effect of transformative learning on the sustainability mindset of leaders have to be conducted for that purpose.

However, this research paper adds value to existing research, by exploring the possible connections between transformative learning and sustainability leadership by providing context information through intensive literature analysis and a pilot case study. It can in the long run contribute to developing learning environments and learning cultures in global workplaces with an emphasis on transformative learning as a tool to influence a leader’s mindset, while also acknowledging the limitations of transformative learning as a sole influencing variable on the establishment of sustainable leadership, as well as the different impacts it can have in different cultural contexts (Tideman et al. 2013). Furthermore, this research raises awareness of the importance of leadership education for sustainable development.

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