TRANSFORMATIVE LEARNING FOR SUSTAINABILITY PRACTICES IN MANAGEMENT AND EDUCATION FOR SUSTAINABLE DEVELOPMENT: A META-SYNTHESIS

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ABSTRACT

Purpose: This study aims to analyze how transformative learning (TL) theory has contributed to sustainability practices in management and Education for Sustainable Development (ESD) and what kind of strategies can direct future practices in the field.

Method/design/approach: An exploratory and inductive study to synthetize primary qualitative case studies was conducted. After screening 241 articles extracted from the Web of Science database, we identified 13 empirical papers highlighting TL theory and sustainability. Then, a meta-synthesis of these qualitative case studies was conducted based on the key characteristics of TL.

Results and conclusion: Six theoretical propositions were elaborated, showing that the TL theory has contributed to sustainability through some influential factors on process, conditions, and results. In addition, based on these dimensions, the study provides some strategies for future practices.

Research implications: The findings of this study have both theoretical and practical contributions, which can direct organizational and educational politics and practices.

Originality/value: Sustainability and ESD are current topics in the academy in favor of the Sustainable Development Goals (SDGs). However, there is a lack of studies on the development of theoretical strategies towards sustainability practices in management and ESD from a transformative learning TL approach. Thus, this study shed more light on the topic.

Keywords: Transformative Learning Theory, Sustainability, Meta-synthesis, Education for Sustainable Development.

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APRENDIZAGEM TRANSFORMADORA PARA PRÁTICAS DE SUSTENTABILIDADE EM GESTÃO E EDUCAÇÃO PARA O DESENVOLVIMENTO SUSTENTÁVEL: UMA META-SÍNTESE

RESUMO

Objetivo: Este estudo tem como objetivo analisar como a teoria da aprendizagem transformadora (AT) tem contribuído para as práticas de sustentabilidade na gestão e para a Educação para o Desenvolvimento Sustentável (EDS) e que tipo de estratégias podem direcionar as práticas futuras na área.

Método: Foi realizado um estudo exploratório e indutivo para sintetizar estudos de caso qualitativos primários. Após a triagem de 241 artigos obtidos da base de dados *Web of Science*, identificamos 13 artigos empíricos que abordam a teoria da AT e a sustentabilidade. Na sequência, foi realizada uma metassíntese desses estudos de caso qualitativos com base nas principais características da AT.

Resultados e conclusões: Foram elaboradas seis proposições teóricas, mostrando que a AT tem contribuído para a sustentabilidade por meio de alguns fatores influentes no processo, nas condições e nos resultados. Além disso, com base nessas dimensões, o estudo fornece algumas estratégias para práticas futuras.

Implicações da pesquisa: Os resultados deste estudo possuem contribuições teóricas e práticas que podem direcionar políticas e práticas organizacionais e educacionais.

Originalidade/valor: Sustentabilidade e EDS são temas atuais na academia em prol do avanço dos Objetivos de Desenvolvimento Sustentável (ODS). No entanto, existe uma lacuna de estudos sobre o desenvolvimento de estratégias teóricas para práticas de sustentabilidade em gestão e EDS a partir de uma abordagem de aprendizagem transformadora. Assim, este estudo trouxe uma reflexão sobre o tema.

Palavras-chave: Teoria da Aprendizagem Transformadora, Sustentabilidade, Metassíntese, Educação para o Desenvolvimento Sustentável.

1 INTRODUCTION

Humankind is facing persistent socio-environmental challenges. The Sustainable Development Goals (SDGs) outlined in the 2030 Agenda elucidate the dimensions of these challenges and their global nature (Marcon Nora and Alberton, 2021). The concept of the Anthropocene (Steffen et al., 2011) calls humans to action. It demonstrates how humanity affects nature and causes what has been called the "Anthropocene shock" (Nogueira et al., 2021). Many of our sustainability issues are behavioral problems as they stem from human decisions and actions that, in turn, are intrinsically intertwined with values, beliefs, and assumptions (Weinberg et al., 2020). In this regard, education has an essential role for Sustainable Development (SD) (Cottafava et al., 2019). Students need to be able to lead different types of organizations and act promoting the SDGs and mitigating climate change (Leal Filho et al., 2020).

Several authors have emphasized the role of organizations and managers as powerful actors for the transformation of society in favor of SD (Dal Magro et al., 2020), which highlights the role of management learnt education, training leadership (Leal Filho et al., 2021), and Education for Sustainable Development (ESD). ESD has been acknowledged as a way to empower students to develop the knowledge, skills, values, capacities, and dispositions needed to respond to the complex social-ecological issues of the 21st century (Walshe and Tait, 2019). Thus, the

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challenge for educators is to help students build these capabilities in order to contribute to the stability of socio-ecological systems and a sustainable future for humanity (Weinberg et al., 2020; Noy et al., 2021).

In this regard, mechanical learning of scientific concepts, laws, and theories is not enough to cultivate a comprehensive understanding of sustainability or prepare students to engage in action and solve problems (Lozano et al., 2019). Freire (1996) distinguished two approaches to learning: "banking" education, which is based on a specialized model of knowledge transmission centered on the teacher, in which students are understood as empty deposits to be filled by contents of the teacher's exclusive domain; and problematizing or liberating education, in which the student and teacher work together, exploring reality, having dialog as a key process for social praxis committed to transformative action, contributing to the emancipation of the subject (Menezes and Santiago, 2014).

In view of a transformation of society towards sustainability, ESD has embraced transformative learning (TL) to overcome a conventional approach and support learning that leads to transformation and adopting a paradigm toward sustainability (Boström et al., 2018; Balsiger et al., 2017; Sterling et al., 2018; 2011; Blake et al., 2013). TL evolved from the concept of perspective transformation into an established learning theory based on concepts from constructivism, humanistic, and critical social theory (Tisdell, 2012). Mezirow (1981) is recognized as the initial formulator of this theory and was influenced by critical authors such as Paulo Freire and Jurgen Habermas. According to the author, TL essentially refers to a change in an individual's perception and constructing meaning in a learning experience, such that the actor questions or reformulates his assumptions or habits of thought. For Sterling (2011), TL is learning that reaches our deepest levels of knowledge and meaning and, in so doing, influences our most immediate and concrete levels of knowledge, perception, and action.

Mezirow (1981) described key characteristics of such learning, focusing on learning processes (how people learn), conditions (how best to support their learning), and outcomes (what they learn). Hence, the process of TL involves ten phases of a change in perspective: 1) occurrence of a disorienting dilemma; 2) conducting a self-examination of assumptions; 3) critical reflection on assumptions; 4) recognizing dissatisfaction; 5) exploring alternatives; 6) action plan; 7) acquiring new knowledge; 8) experimenting with new roles; 9) constructing competencies; and 10) reintegrating into society from a new perspective, the fruit of the TL experience (Mezirow, 1991). Regarding the conditions of learning, Mezirow (1994) stated that a student must have the ability to evaluate arguments objectively, opportunities for participation, accurate information, be open to alternative perspectives, be free of coercion, and reflect critically. The "learning outcomes" relate to what students can do and think at the end of the learning period. They refer to the results of the learning process.

Although some recent studies address the topic through different approaches and contexts (e.g., Hunziker and Hofstetter, 2020; Wolff and Ehrström, 2020; Trott et al., 2020; Aboytes and Barth, 2020; Teen et al., 2020; Fokdal et al., 2020; Noy et al., 2021; Walsh et al., 2020; Weinberg et al., 2020), there is a lack of studies on the development of theoretical strategies towards sustainability practices in management and ESD from the TL approach, requiring more in-depth knowledge to ensure the comparability of different practices and pedagogies. Thus, this study addresses the following research questions: RQ1: How TL theory has contributed to sustainability practices in management and ESD? RQ2: What kind of strategies based on TL theory can direct future sustainability practices in management and ESD?

Hence, the present study addresses these gaps by conducting a meta-synthesis of qualitative case studies of TL theory and sustainability articles published in peer-reviewed journals in the last decades. A meta-synthesis provides a synthesis of the key variables and

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underlying relationships of a set of published qualitative case studies to achieve a refined, extended, or even new theory (Hoon, 2013).

The findings of this study have both theoretical and practical contributions by offering a synthesis of qualitative case studies of the literature on TL and sustainability and providing theoretical advances. Specifically, this study reveals contributions from the TL theory for sustainability management practices and ESD and strategies that can direct future organizational and educational politics. It is justified due a context of world tragedies and catastrophes and the need for new pedagogical strategies to deal with these issues and with the new format of teaching and learning emerged from COVID-19 pandemic.

2 METHOD

For this study, a meta-synthesis was carried out. A meta-synthesis is understood as a comprehensive study that aims to extract, analyze, and synthesize qualitative evidence to build a theory (Hoon, 2013). The goal is to make contributions beyond those achieved in the original studies. The choice to work with case studies through a meta-synthesis occurred because these studies have the strength to produce new theoretical ideas arising from contextualized findings specific to each case (Eisenhardt, 1989). Furthermore, being qualitative in nature, case studies are usually rich in descriptions and information about a given subject, adopting various data sources, different methods, and leading to detailed qualitative findings (Miles and Huberman, 1994). Hence, to meet the research objective, the eight steps for developing a meta-synthesis were followed, as suggested by Hoon (2013): formulating the research question, locating relevant research, creating inclusion/exclusion criteria, extracting and coding data, analyzing the specific case, synthesizing at a cross-sectional level, creating theory, and discussion.

Thus, to identify the body of studies that address the research theme, a search was conducted on the Web of Science (WoS) database in July 2021. WoS database, as one of the most leading sources of scientific publications, was selected for collecting data in this research to ensure sufficient coverage of related publications within the field of study (Ranjbari et al., 2021). The terms "transformative learning" AND "sustain*" were used in the search by "topic" selection criteria (title, keyword, and abstract). For filtering, we decided to select only full articles in peer-reviewed journals. No temporal delimitation was made so that all studies in this regard could be part of the research.

The primary search on the WoS database resulted in 241 articles published between the years 1999 and 2021. In number of publications, the year 2020 stands out, as 52 publications were made. Regarding the location of the studies, most of the studies were published in developed countries, with the United States leading the number of publications (45), followed by Canada (41), Australia (39), and England (36). Regarding the areas in which the studies were published, it is noteworthy that the themes of transformative learning and sustainability have been strongly researched, together, mainly in the areas of education (101 papers), environmental sciences/ecology (81 papers), and science/technology (74 papers). However, other areas, such as social sciences, economics, and public administration, also have articles linked to the theme.

Then, some inclusion and exclusion criteria were applied to perform the meta-synthesis proposed herein (Hoon, 2013). To this end, the following criteria were adopted: 1) the documents must be articles; 2) the scientific journal must have a Journal Citation Reports (JCR) and an impact factor above 1 (one); 3) the article must address the themes of TL and sustainability jointly; 4) the article must be a qualitative case study. The process followed in the selection of the sample conforms to the flowchart of Figure 1, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009).
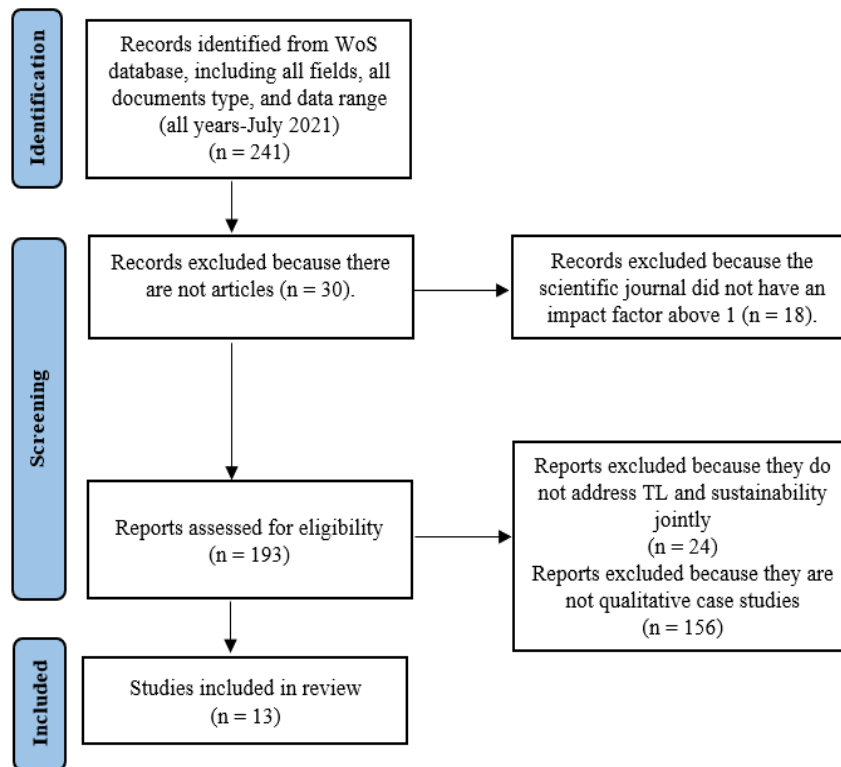
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Figure 1 – Research steps based on PRISMA flow diagram.
Source: The authors (2022).

Thus, after reading the titles, abstracts, and keywords of the articles based on the listed criteria, thirteen studies were obtained, which were published between the years 2009 and 2021 (Table 1).

Table 1 - Articles identified for the meta-synthesis

Article	Title	Author	Year	Focus
1	The wheel of fortune as a novel support for constructive alignment and transformative sustainability learning in higher education	Noy et al.	2021	ESD
2	Disruption as opportunity for transformation? Insights from water supply contamination in Havelock North, New Zealand	Teen et al.	2020	Management
3	Learning Processes in the Early Development of Sustainable Niches: The Case of Sustainable Fashion Entrepreneurs in Mexico	Aboytes and Barth	2020	Management
4	Transformative education: towards a relational, justice-oriented approach to sustainability	Walsh et al.	2020	ESD
5	Looking inward, outward, and forward: Exploring the process of transformative learning in teacher education for a sustainable future	Weinberg et al.	2020	ESD
6	Enriching the intersection of service and transformative learning with Freirean ideas: The case of a critical experiential learning programme in Brazil	Dal Magro et al.	2020	ESD
7	Making connections: a conference approach to developing transformative environmental and sustainability education within initial teacher education	Walshe and Tait	2019	ESD
8	Organizing reflection to address collective dilemmas: Engaging students and professors with sustainable development in higher education	Brunstein and King	2018	ESD and Management

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9	Navigating emergence and system reflexivity as key transformative capacities: experiences from a Global Fellowship program	Moore et al.	2018	ESD
10	Learning for sustainability through CIDA's "Community-based pest management in Central American agriculture" project: a deliberative, experiential and iterative process	Sims	2017	ESD and Management
11	Learning for Sustainability Among Faith-Based Organizations in Kenya	Moyer et al.	2014	Management
12	Transformative food systems education in a land-grant college of agriculture: the importance of learner-centered inquiries	Galt et al.	2012	ESD
13	Learning for sustainability: Participatory resource management in Cambodian fishing villages	Marschke and Sinclair	2009	Management

Source: The authors (2022).

Subsequently, a content analysis (Schreier, 2013) was performed from the in-depth analysis of the selected articles. To this end, the key characteristics of TL highlighted by Mezirow (1981) and Aboytes and Barth (2020) were considered, focusing on learning processes (how people learn), learning conditions (how best to support their learning), and learning outcomes (what they learn).

3 RESULTS AND DICUSSIONS

This section presents the research findings through the key characteristics of TL by an extensive description of the studies analyzed, theoretical propositions, summary of the contributions, and strategies for future practices in the field.

3.1 Processes

Teen et al. (2020) researched how small business owners experienced TL in the face of a drinking water contamination event in a New Zealand town and noted that when a disaster affects the relationship between a community and the natural ecosystems on which it depends, it can represent an opportunity for transformation. According to the authors, after a shock or interruption in the system, a common reaction is to attempt to return as quickly as possible to the previous state. Nonetheless, this is not always possible since key parameters have probably changed due to the shock itself or the social response, leading to a new state adapted to the post-event reality. Interruptions and disasters can provide insights into social realities that would otherwise go unnoticed (Matthewman, 2015).

In the same line, Aboytes and Barth (2020) evaluated the formation and development of the sustainable fashion industry through the lens of TL and identified that critical events in the lives of entrepreneurs are related to disorienting environmental and social dilemmas that challenge their frames of reference, thereby being a crucial point in their decision to venture into the sustainable fashion niche. However, it is necessary to question whether only a catastrophic event should constitute a disorienting dilemma (Hunter, 2012). For Springett (2005), sustainability should be understood as a disorienting multidimensional dilemma of social and collective nature, requiring the construction of new frameworks of meaning and references about our lifestyles, how to consume and produce, and the role of organizations in our society. Although social and environmental crises have strong catastrophic appeal, the agenda cannot be purely negative and guided by fear, but also be supported by a positive ideology that instigates a more harmonious, inclusive, and fair development model (Sachs, 2015).

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Within this perspective, a disorienting dilemma cited in the research reviewed that worked with sustainability education is some new or unexpected aspect of the course, in general, a broad conceptualization of the term sustainability, considering concerns other than environmental ones, leading to a reflection of their habits and lifestyles (Weinberg et al., 2020). Conferences also seemed to become a triggering event for sustainable TL (Walshe and Tait, 2019), as well as a course, with different modalities and experiential learning opportunities, through service-learning and civic engagement (Walsh et al., 2020; Dal Magro et al., 2020).

Teen et al. (2020) considered the ten stages of TL to understand the learning process of small business owners, noting which stages the research subjects went through. This method was also adopted by Weinberg et al. (2020), who explored the process of TL in a sustainability science course for initial training teachers. Mulder et al. (2015) recommended integrating sustainability into teacher education across the curriculum or multiple courses and into graduate programs where students could extend and deepen their learning. Walshe and Tait (2019) corroborate in this regard, as despite using a single conference for sustainable TL, the literature suggests that integrated and long-term opportunities may contribute more to knowledge in the higher education context. These authors researched pedagogies for developing TL for environmental and sustainability education in the context of university-based initial teacher education.

The learning process was analyzed from first-, second-, and third-order changes based on Sterling (2011) and Bateson (1972). The respondents' reflections that showed only addition of new knowledge were coded as first-order learning; those that suggested that the student had reflected on their practices or their pre-existing knowledge were assigned to second-order learning, and when students reflected and appeared to change a previous belief system (at least at that point in time), it was categorized as third-order learning. Dal Magro et al. (2020) also used three-order learning. However, the process-based model was elaborated according to Langley (1999), in which the first order refers to disruptive experiential learning, the second order to social development and community-based competencies, and the third order relates to profound changes in values. Another study addressing the three orders is Aboytes and Barth (2020). The authors analyzed the sustainable fashion sector considering TL and identified the phases of formation and development of the sector in the logic of the learning process. Hence, the first phase considers the learning experiences that led entrepreneurs to become aware and venture into the sustainable fashion sector. The second phase involves individuals acting in a new environment, identifying barriers, and devising overcoming strategies. In the third phase, there is the development of the industry from network building, interaction, and communication, leading to a social learning process.

Walsh et al. (2020) defined learning processes from five modules of a course on eco-justice. The modules were designed based on reviewing approaches that considered relational epistemology, relational ontology, and relational ethics in the context of sustainability, resulting in the dimensions: to love, to see, to heal, to imagine, and to act. A comparison can be made between these components and the ten phases of TL, as the objectives of the first modules are related to the practices of deconstructing the current frame of reference, reflection, and observing system complexity, developing systemic competencies. In contrast, the last modules imagine new paths towards a socially just and sustainable future and developing strategies for change.

It is also possible to draw this comparison with the ten stages in the study by Brunstein and King (2018), which analyzed the transformative processes of an American university toward sustainability. First, with the occurrence of a disorienting dilemma, institutional plans and documents were reviewed. In the second step, institutional and academic assessments were carried out, and, finally, there was the involvement of all actors, uniting faculty members, staff, and students in favor of the institution's objectives, thereby corresponding to the change phase.

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In this sense, considering what has been said about learning processes, it is possible to consider the first and the second propositions of this study:

Proposition 1: *The stages of the TL process and first-, second-, and third-order changes can be used to identify transitions toward sustainability practices in management and education.*

Proposition 2: *Lasting learning processes, which are able to go through the phases of TL beyond the disruptive event, are more likely to generate transformation in the attitudes of learners, such as courses on education for sustainability in universities.*

3.2 Conditions

Aboytes and Barth (2020) highlighted as favorable conditions for sustainable TL individual attitudes and educational exposure. In addition, the following aspects were identified as favorable conditions: the respondents' motivation to contribute to a better society and environment, seeking and obtaining sponsorship and support from third parties (e.g., public and private institutions, support from family and friends, sharing of information, and collaborations between industry players).

Teen et al. (2020) also reported conditions that are pivotal or not to learning. They concluded that when disaster strikes, financial constraints, entrenched paradigms and norms, social structures, and power relations often limit the degree to which organizations can reinvent incumbent systems or develop systems that are more sustainable and resilient. Business owners commented that they could have helped spread the news of the contamination quickly, thereby reducing the number of people affected, if the authorities had communicated with them clearly and in advance.

Brunstein and King (2018) list reflection, collective dilemma, and engagement pedagogy as conditions for the learning process. In this study, focused on transforming the university toward sustainability, reflection occurs in the institution's governing principles involving disciplinary knowledge, global and cultural competencies, health and wellness, leadership, research, creative and scholarly activity, service learning, and civic engagement. The collective dilemma for teaching SD uses stimulating methods, works on emotions, supports initiatives, encourages leadership, argumentation skills, practical application of sustainable products and services, incorporates content that involves social change, among other factors. Additionally, engagement was accomplished through both curricular and extracurricular activities, exposing students to environmental and social issues.

Dal Magro et al. (2020) also highlighted student engagement, starting with their involvement in activities that meet community needs, combining service and learning objectives to induce change in both the recipient and the service provider (Jacoby, 1996). In the context of our study, in which students developed a collaborative project with a local community, immersed in a foreign context and experiencing the cultural, political, social, and economic realities of the host country, the authors highlight two critical elements of experiential learning: experiencing contexts of scarce resources and the principle of reality, that is, students came into contact, many for the first time in their lives, with enormous social problems and illiteracy. Thus, by reinforcing the "reality" dimension, they are encouraged to reflect critically on important social issues (Denson and Bowman, 2013).

Weinberg et al. (2020) worked with a fifteen-week sustainability course for teacher training and asked participants to watch videos and complete assignments before attending class. The course began with general questions about social and environmental problems faced, such as human and natural resource exploitation, moving to more specific topics, such as energy

policy and ecological footprint, leading to critical inquiry and reflection through a final project that involved engagement and transformation. It is emphasized that TL involves attempting new roles based on acquiring knowledge and skills, and by trying out new roles, the learner can build competence and self-confidence in their new sustainability-related actions.

Noy et al. (2021) developed a learning tool for ESD from a constructive and interdisciplinary pedagogy. Therefore, it is possible to identify as conditions of the learning process, critical discourse analysis, systemic thinking, interrelatedness, and developing sustainability competencies. However, it is necessary to consider what Fugate et al. (2018) stated, that in order to promote sustained behavioral change, it is necessary to go beyond the limits of cognitive learning by using learning methods based on experiences and emotions that link theory and practice. And it is from this perspective, Walsh et al. (2020) highlighted conditions that aided the learning process of their research by experimenting with the relational approach. Therefore, conditions noted by Walsh et al. (2020) are embodied learning, the human-nature connection, place-based learning, and coping with uncertainty. In addition, one can highlight factors to support learning about social justice issues, such as intersectionality, which reveals how individuals and groups relate differently according to their position and communities of practice, in which a group of like-minded people shares, practices, and learns.

Furthermore, each person was recognized as having something to contribute to the course rather than assuming that only the teacher had all the answers. This aligns with Lange (2004), who suggested positioning the teacher as a coalescer, allowing for experiences of democracy in transformative education, breaking with the verticalized relationship between teacher and student (Menezes and Santiago, 2014), contributing to a dialogical-dialectical education that Paulo Freire proposes.

Still in the context of emotional experiences, Walshe and Tait (2019) incorporated a series of workshops that encouraged students to engage with different issues of affective dimension. This led to questioning their values (existential dimension) based on what Hicks (2002) considers regarding TL and that it should involve three awakenings: of the mind, heart, and soul. For Baumgartner (2001), educational experiences are a complex process involving thoughts and feelings without which students would not begin critical reflection (Taylor, 2000). From this, the third proposition of this study can be considered:

Proposition 3: *There are some conditions based on TL that can contribute to sustainability practices in management and education for sustainability, such as educational exposure, reflection, disorienting dilemma, engagement pedagogy, civic engagement, critical discourse analysis, systemic thinking, and experiential, relational, and emotional learning.*

Still, in this perspective, Moyer et al. (2014) pointed out a direct condition between learning and sensory experiences, emotions, values, beliefs, and self-perceptions in their study in religious organizations in Kenya. Kovan and Dirkx (2003) noted that there are complex social, emotional, and spiritual processes involved in deep inner work in the process of TL. Moyer et al. (2014) pointed out that organizations, faith-based or otherwise, could enhance learning for sustainability among their employees/participants by providing opportunities to reflect on and discuss their beliefs, values, worldviews, and faith. This would allow them to deepen their more practical, skills-based learning by integrating and applying it to their broader frames of reference, their moral understanding, and, as relevant, their faith and spiritual life. While not often discussed in resource management settings, this integration is important because sustainability challenges are moral, philosophical, and religious at their roots (Orr, 2002).

According to Mezirow (1991), TL is about how we learn to negotiate and act according to our own purposes, beliefs, and values, rather than acting according to those of others or that

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we assimilate without thinking. It is about gaining a sense of agency, greater autonomy, and becoming more socially responsible and clear decision-makers (Mezirow, 1991; 2000). Thus, the following proposition is presented:

Proposition 3a: *TL for sustainability occurs from opportunities for reflection and discussion of beliefs, values, worldviews, faith, emotions, intuition, sensory experiences, and self-perceptions.*

Some studies reviewed demonstrated that the main processes for TL were provided from an enabling and prepared environment where participants could discuss. The importance of putting theory into practice was also noted to gain a deeper understanding of their practice by learning about relevant theory (Sims, 2017). Marschke and Sinclair (2009) revealed important communicative and TL outcomes, indicating that the deliberative spaces being created for participation foster some level of dialogue and reflection among committee members. Moyer et al. (2014) reported elements for the TL process: experimentation, practical application, observation and experience, site facility, and training.

Galt et al. (2012) used a critically reflective research approach to analyze TL efforts in education at a university, from course implementation, by constructing teaching plans, defining competencies, preparing space, and activities to be undertaken (laboratory work, exams, assignments, and lectures) as they relate to social constructivist learning theory and student-centered investigations. Hence, it is worth noting a further proposition regarding the conditions for learning:

Proposition 3b*: For TL for sustainability, it is essential to consider that participants engage, take responsibility, and transform their behaviors in favor of sustainability, as well as the deliberative spaces being created for participants to promote some level of dialogue, reflection, and active participation.*

3.3 Results

As results, Dal Magro et al. (2020) observed two main subcategories of change emerged from the data analysis: critical thinking and awareness of the complexity of sustainability. Therefore, the program experience allowed students to develop a different worldview, corroborating Mezirow (1978) regarding the theme (e.g., transformation can occur when individuals recognize that their perspective is no longer functional and decide to take ownership of a new perspective as being more valuable). Aboytes and Barth (2020) listed as results from a TL process the generation of information and knowledge about sustainable fashion to the general population, the development of products with social impact, and the attention received from larger industries.

Teen et al. (2020) found that all respondents reported that the Havelock North water supply contamination reminded them or made them better understand their connection to and dependence on natural ecosystems. Thus, the event caused a shift in the perspectives of small business owners, and some adapted their water use practices. However, although all interviewees made short-term adjustments to their daily water supply practices after the incident, and only one entrepreneur out of twenty reported consciously making medium- to long-term changes to their supply arrangements. Therefore, the researchers noted that the belief that the contamination was a one-time occurrence, combined with the significant emotional and financial pressure they were under, prevented the entrepreneurs from translating their initial responses into transformative action. From another point of view, Brunstein and King (2018) observed that in organizations such as universities, in which people work and learn for many

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years, focused and cumulative transformation is possible. In order to enhance the learning process, effective reflections, along with training around collective dilemmas and engagement, can enhance learning at the transformation level.

In the course developed by Weinberg et al. (2020), the authors reported that when considering themselves as potential agents of change for sustainability, professors expressed motivations to change their daily behaviors and influence people close to them, such as family and friends, to do the same. Professors finished the course with a broader understanding of the multifaceted nature of sustainability (e.g., environmental, social, and economic), and many expressed feelings of guilt or shame about their previous limited understanding.

Moore et al. (2018) stated that from the practices implemented, the participants could identify complex system dynamics that were previously invisible. This, in turn, allowed for a new look at the distribution of resources and agency across the system. Moreover, the results demonstrated how a transformative space helps to practice the experience of contestation, unpredictability, dynamics of transformation, and social innovation. The fourth proposition of the study are presented:

Proposition 4: *Going through lasting TL experiences for sustainability leads learners to become aware of the interrelationships between humanity and natural ecosystems, implying a change in individual and collective attitudes.*

Finally, as professors and managers need to develop tools to support transformative learning that enable individuals to develop competencies and confidence in their capacity to contribute to a more sustainable future, this study offers some strategies based on the meta-synthesis findings that can direct future practices in organizations, companies, and education institutions towards a TL in sustainability (Figure 2). These insights are especially relevant for management education for shaping social and organizational realities and creating responsive and responsible organizations.
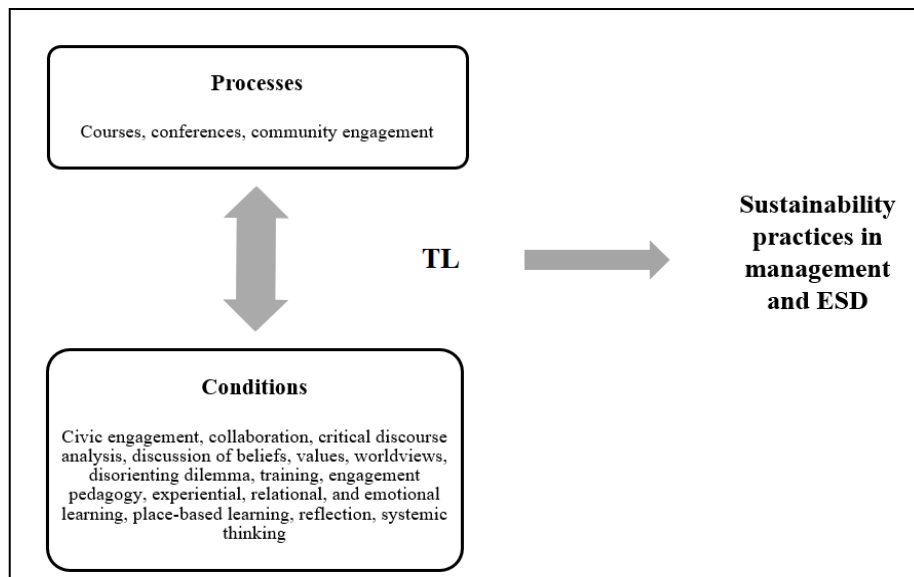

Figure 2 - Strategies for sustainability practices in management and ESD
Source: The authors (2022).

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4 CONCLUSIONS

The global unsustainability dilemmas are huge and to overcome them worldwide might be excessively demanding. Despite the advances towards sustainability, there are still many businesses that work in the business-as-usual logic, as well as educational institutions, with traditional teaching. Thus, current practices have not fully taken advantage of the potential of more critical and humanist theories, such as TL theory. To do so, it is necessary to transcend the traditional and conventional notion of work, breaking with the sociocultural heritage of thinking and acting and moving from isolated case experiences to a collective conscience. Thus, we need strong strategies as guiding principles to make organizational and education practices genuinely transformative, especially in times of crisis, such as COVID-19 pandemic, which has brought new organizational and educational challenges.

Therefore, this study sought to analyze how TL theory has contributed to sustainability practices in management and ESD and what kind of strategies can direct future practices in the field. Using a meta-synthesis approach, thirteen case studies were selected for in-depth analysis through the key characteristics of TL. This analysis provided how the literature has been approaching the topic and enabled six theoretical propositions to be elaborated, which resulted in the strategies for future practices. The study also guides a reflection on the need for critical thinking in companies, schools, and universities, which combines the concern with economic gains in the short term with the medium and long term, considering the right of future generations to a sustainable planet. This emphasizes the role of subjects on sustainability in the curriculum of educational institutions, especially in management education.

It should be noted that the present study does not seek to exhaust the theme; on the contrary, given an ongoing need for research on how to support transformative processes in management and education towards sustainability, it is intended to encourage the discussion. In addition, the study has some limitations. The fact that only qualitative case studies identified on one database were analyzed, despite being a reputable database with many indexed journals, which improves its credibility to research, it can be considered a limitation. Other exclusionary criteria defined for the study also stand out since they may disregard potential articles from being included in the analysis.

Thus, it is recommended for future research to use other methods in order to explore the topic from other points of view and analysis. Moreover, it is suggested the use of other databases and inclusion/exclusion criteria. Furthermore, it is pertinent that future research empirically assesses the propositions elaborated and presented herein. Also, it is interesting to understand TL from educational and organizational empirical experiences in the face of the COVID-19 pandemic, given the need for adapting to the new challenges.

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