Development of leaders of technologically-based companies: a transformative learning perspective

Desenvolvimento de líderes de empresas de base tecnológica: uma perspectiva de aprendizagem transformadora

Received in: April 18th, 2023
Accepted in: May 16th, 2023

Marta Inês Caldart de Mello
PhD in Engineering and Knowledge Management from the Programa de Pós-Graduação em Engenharia e Gestão do Conhecimento da Universidade Federal de Santa Catarina (PPGEGC-UFRJ)
Institution: Universidade Federal de Santa Catarina (UFSC)
Address: Campus Reitor João David Ferreira Lima, s/n, Carvoeira, Florianópolis - SC, CEP: 88040-535
E-mail: martamello@ifc.edu.br

Cristiano José Castro de Almeida Cunha
Doctor in Business Administration from the Rheinisch-Westfälische Technische Hochschule Aachen
Institution: Departamento de Engenharia e Gestão do Conhecimento da Universidade Federal de Santa Catarina (EGC-UFRJ)
Address: Campus Reitor João David Ferreira Lima, s/n, Carvoeira, Florianópolis - SC, CEP: 88040-535
E-mail: 01cunha@gmail.com

Solange Maria da Silva
Doctorate in Production Engineering
Institution: Departamento de Ciências da Administração da Universidade Federal de Santa Catarina (CAD-UFRJ)
Address: Carvoeira, Florianópolis - SC
E-mail: solange.silva@ufsc.br

Gertrudes Aparecida Dandolini
Doctorate in Production Engineering
Institution: Departamento de Engenharia e Gestão do Conhecimento da Universidade Federal de Santa Catarina (EGC-UFRJ)
Address: Campus Reitor João David Ferreira Lima, s/n, Carvoeira, Florianópolis - SC, CEP: 88040-535
E-mail: gertrudes.dandolini@ufsc.br

ABSTRACT
This research aims to understand the learning processes of leaders of technology-based companies (TBCs) from the perspective of transformative learning, in which leader development is a process of changing awareness and transformation throughout life. A qualitative methodology consistent with the interpretative paradigm was applied, using thematic oral history as a method. Data were collected in semi-structured interviews with six EBT leaders. Data analysis was conducted based on the deductive and inductive coding
approach. The findings suggest that learning processes and their outcomes implied changes in the way of leading. In processes, the informal character of transforming experiences, disorienting dilemmas as learning triggers, the role of critical reflection, and emotions during transformation stands out, in addition to “urge for change”, an aspect rarely included in empirical research on transformative learning. In the outcomes of the processes, data revealed learning in different dimensions: world view, self, epistemological and ontological learning, behavior, and capacity. The scientific contributions to the literature refer to the unprecedented use of the theoretical perspective of transformative learning to understand the development of TBCs leaders, especially the relationship between processes and learning outcomes, something that has not been studied so far in this type of organization.

**Keywords:** leader development, transformative learning, technology-based company.

**RESUMO**
Esta pesquisa tem como objetivo compreender os processos de aprendizagem de líderes de empresas de base tecnológica (EBTs) sob a ótica da aprendizagem transformadora, em que o desenvolvimento de líderes é um processo de mudança de consciência e transformação ao longo da vida. Aplicou-se uma metodologia qualitativa coerente com o paradigma interpretativo, utilizando como método a história oral temática. Os dados foram coletados em entrevistas semiestruturadas com seis líderes da EBT. A análise dos dados foi realizada com base na abordagem de codificação dedutiva e indutiva. Os resultados sugerem que os processos de aprendizagem e seus resultados implicaram mudanças na forma de liderar. Nos processos, destaca-se o caráter informal das experiências transformadoras, dos dilemas desorientadores como gatilhos da aprendizagem, do papel da reflexão crítica e das emoções durante a transformação, além do “desejo de mudança”, aspecto raramente contemplado nas pesquisas empíricas sobre aprendizagem transformadora. Nos resultados dos processos, os dados revelaram aprendizagem em diferentes dimensões: visão de mundo, self, aprendizagem epistemológica e ontológica, comportamento e capacidade. As contribuições científicas para a literatura referem-se ao uso inédito da perspectiva teórica da aprendizagem transformadora para entender o desenvolvimento dos líderes das EBTs, especialmente a relação entre processos e resultados de aprendizagem, algo que não foi estudado até agora neste tipo de organização.

**Palavras-chave:** desenvolvimento de líderes, aprendizagem transformadora, empresa de base tecnológica.

**1 INTRODUCTION**

Current organizations and their leaders are challenged in a daily basis by a dynamic, complex, and defiant environment. In this context, the complex requirements of leadership and the growing need for continuous learning have become even more critical. Leaders need to be able to deal with the challenge of change, promote environments of innovation, encourage trust, and be prepared to move into unexplored territories (Brown and Posner, 2001). Furthermore, learning, living and working patterns are changing.
rapidly. This means not only that leaders must adapt to change, but also that established ways of doing things must also change quickly. Therefore, it is up to leaders to mobilize people and promote the necessary “adaptive work”, that is, to promote the evolution of values, beliefs, and behaviors. Having this work done is the essence of leadership (Heifetz, 1994: 26).

Intrinsic to leader development is the concept of change (Day and O’connor, 2003) which, in turn, is the essence of the learning process. The literature has suggested that there is an important connection between learning and leader development, especially in the context of transformative learning. Therefore, there is an ongoing call for the principles of this type of learning to be incorporated into studies on leader development (Madsen, 2010; Brown and Posner, 2001).

Transformative learning is about change – “dramatic and fundamental changes in the way we see ourselves and the world we live in” (Merriam, Caffarella, and Baumgartner, 2007: 130). The application of their ideas and practices has been recognized as an alternative for developing leaders who are more aware of the human and environmental implications of their work. The outcomes and learnings of the transformative learning process include more open, reflective, inclusive, discriminating, and emotional perspectives (Mezirow, 2000: 8).

These characteristics involve a type of learning that is not acquired by means of training or courses aimed at improving performance, and this learning involves transformation at a deep level of the individual; a change of paradigm or mental model, which occurs at the epistemological level or reflective judgment (King and Kitcheners, 2004). Thus, the present research used the theory of transformative learning as a theoretical lens to understand the learning processes of leaders of “technology-based companies” (TBCs).

2 LITERATURE REVIEW

The literature review is structured in two subsections: development of leaders in Technology-Based Companies (TBCs), and Development of Leaders and Transformative Learning.

2.1 DEVELOPMENT OF LEADERS IN TECHNOLOGY-BASED COMPANIES

For Côrtes, Pinho, Fernandes, Smolka, and Barreto (2005: 87), Technology-Based Companies (TBCs) are companies that “make significant technological efforts and
concentrate their operations on the manufacture of ‘new’ products”. Some characteristics distinguish them from other organizations, such as: they depend on technology and they have relatively frequent growth potential, a high degree of technological knowledge of their human capital, high investments in R&D, and outcomes with high added value (Santos and Pinho, 2010; Dahlstrand, 2007; Andrade Jr., 2013).

The details that distinguish technology-based companies have a direct impact on the entrepreneur's leadership. The environment of uncertainty that characterizes TBCs and their dependence on the knowledge and intellectual abilities of their employees pose different challenges for leaders. The leader must enable the definition of the direction, the creation of the alignment and the maintenance of the commitment (Mccaultey, Van Velsor, and Ruderman, 2010: 2) beyond the people who are part of his company, extending to the community where it operates.

Leadership inherently involves multiple dilemmas, especially ethical ones, and as the leader progresses, they are capable of feeling and interpreting increasingly complex dilemmas. Their moral and ethical "radar" becomes more sophisticated, as does their understanding of knowledge or the way they interpret experiences (Day, Harrison, and Halpin, 2012).

Based on this look at the development of leaders, Day, Harrison, and Halpin (2012) point out that it is short-sighted to focus development only on improving observable expertise. Training only a specific set of skills may result in some increase in the leader's knowledge level, but does little to improve long-term development. This can have negative impacts, as skills (expertise) are contextual and, depending on the circumstances, can quickly become obsolete.

On the other hand, focusing on developing broader concerns such as identity, moral reasoning, and reflective judgment would enable the emergence of more self-aware and adaptive leaders, which many organizations need and value. Such highly developed leaders would be able to respond quickly to any change that arises by generating new skills and competencies (Day, Harrison, and Halpin, 2012).

In this sense, the development of leaders focuses on the acquisition of individual knowledge, skills, competencies and the improvement of holistic functioning, which promotes more effective leadership, especially for those positioned in formal roles (Day and Dragoni, 2015) and comprises the expansion of a person's ability to be effective in leadership roles and processes.
Leader development processes are characterized as intrapersonal, leader-centered, and involve issues such as skills, experience, learning, personality, and self-development. They refer to the development of knowledge and “skills associated with the formal leadership role” (Day, 2000: 584). In this case, the focus of development is “human capital”, concentrated mainly on attributes of the individual leader, such as knowledge, skills and intellectual gifts (Day, Fleenor, Atwater, Sturm, and McKee, 2014). Specific examples of the intrapersonal competence type include self-awareness (emotional awareness, self-confidence, appropriate self-image), self-regulation (self-control, dependability, adaptability, personal responsibility) and self-motivation (commitment, initiative, optimism).

From a traditional and individualistic leadership perspective, such capabilities contribute to increasing individual knowledge, confidence, and personal power (Day, 2000).

Leader development occurs in the context of adult development, that is, developing leaders are also developing adults (Day and Sin, 2011). Day and Zaccaro (2004) discuss leader development as a form of change/transformation. For the authors, learning can drive to transformation and leader development. However, the learning required to transform transcends the simplistic assumption, based only on changing specific and observable behaviors, skills and competences. It is reductionist to think of programs, experiences or interventions to directly shape (cause) the development of leaders (Day and Dragoni, 2015). Leaders differ in levels of development and in terms of their individual capabilities, as well as changing in different ways based on development experiences (Day and Thornton, 2017). According to Day and Thornton (2017), experience has a moderating effect on the capabilities that each one brings and on the immediate outcomes of their development.

2.2 LEADERSHIP DEVELOPMENT AND TRANSFORMATIVE LEARNING

Theorists in the area of leadership development (McCauley, Drath, Palus, O'Connor, and Baker, 2006; Day and Sin, 2011; Day and Dragoni, 2015) recognize the potential that the field of human development can offer for development of leaders. Helsing, Howell, Kegan, and Lahey (2008), for example, draw attention to the need to include theories of adult education in the perspective of transformative learning in leader development. This type of learning allows people to broaden their views about themselves and the world, increasing the complexity of their cognitive, emotional, interpersonal and intrapersonal capacities (Helsing et al., 2008).
Many of the insights from transformative learning theory can be transferred to the field of leader development. Firstly, because both deal with adults in the learning process whether they are called students, learners, workers, leaders or managers and involve adults teaching, regardless of whether the process is recognized as part of professional activities or not. Thus, many adult education fundamentals about emotional learning rhythms, learning styles, best practices, and so on, can be applied to leader development (Brookfield, Kalliath, and Laiken, 2006).

Kegan (2013) classifies learning into two types: “informative” and “transformative”. The first is aimed at changes “in what is learned” and increases the knowledge base and the repertoire of skills, as well as extending existing cognitive structures. It is literally informative, as it aims to bring new content to the existing way of knowing. The second is focused on changes in “how to learn”; in the “way of knowing”. The change is epistemological and does not just refer to a change in the behavioral repertoire or an increase in the knowledge base. In this case, beliefs and assumptions are the basis for the ways in which people shape reality (meaning construction) and learn.

Mezirow (1991) describes transformative learning as a process that occurs through critical self-reflection, resulting in the reformulation of a perspective of meaning (the way the individual understands the world) that allows a more inclusive and discriminating understanding of experience (Cranton, 1994). In this definition, the basic idea is that learning occurs when the individual makes a critical reflection on their own experiences, transforming their thinking and perspectives about the world, resulting in behaviors in alignment with the new understanding.

In this way of learning, the reference models (mental models) and, therefore, the content of the value and belief systems themselves, can be changed (Mezirow, 2000). People are capable of relinquishing a past understanding in favor of a new one. Along the same lines, Hoggan (2016b:15) suggested that “transformative learning refers to processes that result in significant and irreversible changes in the way a person experiences, conceptualizes and interacts with the world”.

The transformative learning process involves some stages identified in empirical studies (Mezirow, 1978), although not all steps occur or necessarily follow a line sequence. Mezirow (1978, 1991, 2006: 28) described the transformation process in ten stages: i) disorienting dilemma: confrontation with a contradictory point of view; ii) self-analysis with feelings of fear, anger, guilt, or shame; iii) critical assessment of
assumptions (epistemic, sociocultural or psychic assumptions): a sense of alienation from traditional social expectations; iv) sharing the recognition of dissatisfaction and the transformation process: recognizing that the problem is shared; v) search for options for new roles, relationships, and actions; vi) planning a course of action: building skills and self-confidence in new roles; vii) the acquisition of knowledge and skills to implement the plans; viii) provisional experimentation with new roles: acquiring knowledge and skills to implement a new course of action; ix) building competence and self-confidence in new roles and relationships: trying new roles and evaluating them; x) reintegration into one's own life, based on conditions dictated by the new perspective: reintegration into society with this new perspective (Mezirow, 2006: 28; Cranton, 2016: 48).

Therefore, the particular characteristic of transformative learning is engagement in the process of critical reflection. The person reflects on the assumptions that support their beliefs and perspectives on the world, which leads to a fundamental change in their reference models (mental models), which are, in turn, integrated into their lives, producing changes recognized by people themselves, as well as by those with whom they interact in daily life (Henderson, 2002: 203). Transformation usually begins with a catalytic event, what Mezirow (1991) called a disorienting dilemma, in which “seeds of change” are planted.

Two other constructs of transformative learning theory are especially relevant to understanding the dynamics of transformation: "models of reference" and "perspectives of meaning".

Reference models are networks of assumptions and expectations through which people filter the way they see the world (Cranton, 2016: 18). They are mental models that give meaning to experiences, cultural and linguistic structures through which meanings are interpreted, and also grant coherence and significance to experiences (Mezirow, 2006: 26). Models of reference are shaped by perspectives of meaning or habits of mind (Mezirow, 1991, 1992).

Perspectives of meaning “operate as a set of codes that significantly shape sensations and delimit perceptions, feelings and cognition” (Closs, and Antonello, 2014: 228) and represent the individual’s world view.

For Mezirow (1992), models of reference are shaped and often distorted by culturally assimilated perspectives of meaning. His theory points to critical reflection as the way to transform these perspectives of meaning. Kitchenham (2008: 113) reinforces that
the remedy for any distortion is the transformation of perspective; and Dirkx (2000) states that transformation depends mainly on critical reflection, reason, and rationality.

Transformation occurs when a distorted, inauthentic or unwarranted assumption is replaced by a new or reformulated point of view or mental habit. The result is a more reflective, differentiated, complex, and inclusive structure of meaning that serves as a guide to action (Mezirow, 2000). Then, points of view, mental habits and transformed models of reference can result in changes not only related to the way of thinking (epistemic change), but also in the way of being (ontological change) (Taylor, 2006: 394).

From this understanding, it becomes relevant to understand the potential outcomes of transformative learning that are usually reported in empirical studies (Hoggan, 2016a), specifically, Hoggan's typology of transformative learning outcomes (2016b), as this is the lens used in the analysis of this study.

According to Hoggan (2016a, 2016b), it is an analytical tool of outcomes in six dimensions, which include world view or cosmovision, self, epistemology, ontology, behavior and capacity, and their respective subcategories, in addition to three criteria of outcome.

World view is a mental model similar to schema and paradigm concepts, which emphasizes the subjective way of observing and understanding the world. A change in world view refers to significant changes in how a person understands the world and how it works (Hoggan, 2016b). Self (I) refers to any of the ways in which people experience a significant change in their sense of self (I). Epistemological change concerns the adoption of a new way of knowing (Hoggan, 2016a). Ontology refers to the way a person exists in the world, how he reacts physically and emotionally to his experiences. It concerns deeply-seated mental and emotional inclinations that affect the overall quality and tone of your existence (Hoggan, 2016a).

The behavior dimension emphasizes action, which pervades Mezirow’s (2000) transformative learning conception. For the author, learning is a process of giving meaning to experience, which will act as “a guide for future actions” (Mezirow, 2000: 5). “Change in behavior as an outcome is therefore essential to transformative learning theory” (Hoggan, 2016b: 12). The capability dimension refers to “developmental outcomes that lead to greater complexity in the way people see, interpret and function in the world” (Hoggan, 2018: 46).
According to Hoggan (2016b), when analyzing the outcomes of transformative learning, three outcome criteria should be considered: depth, breadth, and relative stability. Depth refers to the impact of a change or the degree to which it affects any specific type of outcome, e.g., world view, personality, epistemology. Breadth refers to the number of contexts in which a change is manifested; and relative stability emphasizes that change is not temporary (Hoggan, 2016b). These criteria are in line with the phases of transformative learning identified by Mezirow (1991), which begin with the confrontation with a disorienting dilemma and, finally, the reintegration of the change in life based on conditions dictated by the new perspective.

In conclusion, it is realized that transformative learning involves an opening to a new paradigmatic understanding of the world. The process can take years or it may never be fully completed.

3 METHODOLOGICAL ISSUES

In the literature survey on the two associated constructs – Leader Development and Transformative Learning – the systematic review method was used (Petticrew and Roberts, 2006), with searches in Scopus, Ebsco, Scielo, Web of Science, as well as in Proquest base. In the strategy of search and selection of studies, articles that contained the search terms in the title, abstract or keywords were selected. In the inclusion/exclusion process, the flowchart of the PRISMA recommendation – key items for reporting systematic reviews and meta-analyses (Moher, Liberati, Tetzlaff, Altman, and The PRISMA Group, 2009) was adopted, with four steps: identification, selection, eligibility, and inclusion.

In these bases, 114 documents were originally recollected. Duplicate works were excluded using the EndNote software and after reading the documents completely, 52 works were left (19 papers and 33 theses), which were considered valid for the literature review. It is worth mentioning that none of the analyzed articles presented empirical studies relating transformative learning to the development of leaders in the context of TBCs, leading to the conclusion that “TBCs emerge as a promising research topic” (Dahlstrand, 2007: 375) and an open field for wide search about the learning of their leaders.

After reviewing the literature, in order to achieve the proposed objective, basic qualitative research (Merriam and Tisdell, 2016) was adopted as a methodological alternative for field research, since it seeks to understand the meaning of the experience lived by organizational leaders, that is, how they understand their world and their
transformative learning experiences as a function of leadership. Consistent with the object
of this research, qualitative research methods are generally more appropriate to under-
stand communicative learning, as is the case of transformative learning, since they require
an “abductive reasoning, or better, a reasoning from concrete instances to an abstract con-
ceptualization” (Mezirow, 2003: 59).

In this sense, oral history was chosen as an investigation strategy, as it is one of
the methods that make up the broader field of qualitative research. It presents itself as “a
way of capturing the experiences of people willing to talk about aspects of their lives”
(Meihy, 2002: 51).

For this study, the method of thematic oral history was adopted, which intends to
understand a specific theme defined as a central focus, offering, therefore, greater objec-
tivity. The interview has a thematic character, is carried out with a group of people on a
particular subject and does not cover the respondents’ entire existence (Meihy, 2002;
Freitas, 2006). The outline of the theme should be so explicit that it appears in the ques-
tions to be asked to the respondent. “Details of personal life are only interesting insofar
as they reveal useful aspects of central thematic information” (Meihy, 2002: 145). In this
sense, the semi-structured interview technique was adopted.

Aiming to reach the scope of the study, three criteria were adopted in choosing
the interviewees: experience in the role of leader, the context of TBCs and the time of
five years, at least, as a leader. This is justified by the fact that leaders experience many
situations conducive to learning. Thus, we sought to know their life experiences as a
means of understanding the lessons that impacted their development in the reality of
TBCs.

In view of this, six TBCs leaders granted and validated their testimonies and,
therefore, represent the subjects of this study. The names presented here are fictitious, in
order to preserve their identities. The period for carrying out the interviews lasted four
months. All were carried out in the companies of the interviewees, with an average dura-
tion of 1 hour and 30 minutes.

As a data analysis method, a hybrid thematic analysis approach was adopted, in-
corporating both inductive and deductive approaches. The interpretation of this empirical
content was based on the research objectives and theoretical contributions on transform-
ative learning, focusing on the four phases of the learning process (Henderson, 2002),
which served as a guide for researchers to understand the process. , which are: i) a
disruptive event occurs in the person's life, which challenges their view of the world; ii) the person then critically reflects on beliefs, assumptions and values that shape the current perspective; iii) the person develops a new perspective to deal with the discrepancies brought to light by the triggering event; iv) the person integrates the new perspective into their life.

Next, the outcomes derived from the process were identified, when Hoggan (2016b) was used, who proposes a definition broad enough to encompass a variety of learning experiences that can be considered transformative: “Transformative learning refers to processes that result in significant and irreversible changes in the way a person experiences, conceptualizes and interacts with the world” (Hoggan, 2016b: 15).

In interpreting the data, therefore, it was based on the parameters established in this definition, to delimit what should and what should not be considered transformative learning. Additionally, the typology of transformative learning outcomes was applied (Hoggan, 2016b). Originating from the adult education literature, this typology provided me with a useful framework to analyze outcomes, both from the transformative learning process and from the leader development process, based on the six dimensions of analysis mentioned above: world view/cosmovision, self, epistemology, ontology, behavior, and capacity.

4 SYNTHESIS OF FINDINGS

The analysis and discussion of the outcomes take place from two perspectives: the Transforming Learning Process and the Transforming Learning Outcomes.

4.1 THE TRANSFORMATIVE LEARNING PROCESS

About the learning process, in deductive coding, according to Mezirow (1978, 1991, 2006), two elements emerged: “disorienting dilemmas” and “critical self-reflection”. On the other hand, the inductive logic gave rise to new themes, originating from the respondents' speeches. In this case, the elements “role of emotions”, “learning categories” and “desire for change” were the outcome of inductive coding.

4.1.1 Disorienting Dilemmas as a Precursor to Learning

Usually, transformation begins with a catalytic event, which Mezirow (1991) called a “disorienting dilemma”.
The six leaders surveyed faced disorienting dilemmas that surfaced unconscious assumptions and provided new perspectives on the world, their lives, their work, and themselves. The encounter with each one’s disorienting dilemma brought up assumptions taken for granted, which proved to be insufficient and disorienting to deal with circumstances, whether external or internal.

In all experiences reported, what triggered the potential for transformation in them and provided them with an openness to learning were the inconsistencies existing between what they believed to be true and the shock they suffered in the face of the new perspective presented by the disorienting dilemma (Mezirow, 1997). At this stage, questions they had made apparent the contradictions between the perspective presented and the assumptions, beliefs or expectations taken as true. In some way, leaders felt thwarted in their expectations, frustrated in their intentions, or challenged in their beliefs and values. For example: i) Bob asked himself how he could lead the team in a new approach to work, in whose principles he did not believe; ii) Armando questioned whether his posture was in line with his psychological profile, or whether his way of acting was just a response to his expectations about the role of a leader; iii) Rafael was confronted with the perception of those led about him, and questioned himself about what kind of leader he was and why he acted that way; iv) Daniel was confronted with his own posture as a leader and the weight his words had for those he led. He then questioned his way of expressing himself; v) Nei, in experience 1, questioned which direction his extreme professional dedication would take him. In experience 2, he questioned himself about the extent to which his “stinginess” had contributed to the company’s crisis; vi) José’s dilemma was to know and decide how to transform himself into the person he wanted to be.

Thus, in the data analysis, it was found that the questions motivated by the disorienting dilemma involved an emphasis on the perception of the source, structure and history (origin) of the model of reference (mental model), in addition to a judgment of its relevance, adequacy and consequences. Mezirow (2003: 61) argues that “this kind of metacognitive reasoning is a requirement of transformative learning”.

According to Mezirow (1978), the greater the traumatic severity of the disorienting dilemma, the greater the probability that a transformation will occur. The experiences of Nei and Rafael represent well this aspect mentioned by the author. Deep insights were gained by Nei in experience 1, in which the impact of his friend’s death was a turning point that redirected his professional life project.
Rafael’s experience is another example. Discovering the perception of those he leads about his way of leading shook him both psychologically and physically. It was at that moment that he became aware of the similarity between his leadership posture and that of his boss, who wanted outcomes “at any cost”, and only then did he realize why the boss was not invited by his subordinates to moments of relaxation, such as barbecues and social meetings.

4.1.2 The role of emoticons

According to Mezirow (2006), in the initial stage of the transforming process, disturbing emotions or feelings may arise and trigger the reflection process, such as fear, anger, guilt or shame. In this study, it was possible to corroborate this statement, as it was identified, in the reports, that the uncomfortable feelings and emotions acted so that the contradictory premises became evident through **critical self-reflection**. Emotions apparently triggered an internal turbulence, a kind of alert, drawing the leaders' attention to the incongruity between the premise and the resolution of the problem.

This state of internal unbalance seems to have been the force that drove the leaders of this study out of the comfort zone of their lives, forcing them to reflect on the experience. The most emblematic of the reports was the case of Rafael, in which the emotional shock was so intense that it reflected on his physical health and resulted in his hospitalization.

Thus, the disorienting dilemmas experienced by leaders were experienced as deeply emotional experiences. The data suggest that feelings and emotions permeated the entire process and constituted the fuel for the transformation, favoring (and not blocking) their critical reflection.

Armando’s anxiety when employees are fired and Nei’s emotional exhaustion (agon-y) with the “disruption of the corporate relationship” exemplify the strength of emotions in transformation. Likewise, the “very bad feeling” experienced by Daniel, when he was judged by those he led due to an inappropriate speech, and Rafael’s statement that he “suffered” and “was kind of broke, both as a professional and an individual”, are indications that the reflection and, consequently, the transformation would not have occurred without those feelings.

Mälkki and Green (2014: 15) classify the emotions involved in the disorienting dilemma as an “early warning system, announcing a mismatch between cognitive
assumptions and the demands or needs of the situation in question”. These emotions push the individual out of his comfort zone and make him reflect, and seeing these unpleasant emotions as a natural part of our humanity, following their own logic, can help us to relate to them. On the other hand, seeing them as something to be ashamed of or to be abandoned actually creates some resistance and prevents transformation (Mälkki and Green, 2014).

Joseph's account exemplifies this aspect well. He kept a passive attitude towards life, avoiding change for fear of the discomfort and unbalance that follow any internal conflict. However, he was able to reframe the meaning of these emotions, and instead of pushing them away and avoiding considering those unpleasant issues, he was able to better accept them so that he could identify the suppositions and assumptions affected by them. By recognizing the internal conflict as an inevitable part of the journey, José changed the way of interpreting the experience, thus allowing him to achieve transformation.

In this manner, all the leaders in this study went through a rocky emotional path, which suggests that learning requires discomfort before transformation. They allowed emotions to illuminate the map of one's system of beliefs, values and expectations. They accepted the emotions and were guided by them in critical self-reflection in search of the problematic premises involved in the issue.

Uncomfortable emotions are significant for learning because they focus attention and provide guidance and motivation for action (Taylor and Cranton, 2013). They are inherently linked to critical reflection, because “purely objective reasoning cannot determine what to observe, what to pay attention to and what to question about” (Van Woerkom, 2010: 348).

Nei’s experience 2 illustrates this aspect well. He realized that his way of managing was a consequence of his stinginess and that this prevented the company from growing the way he wanted. Giving away this way of seeing how the world works and opening up to a new way of experiencing it, conceptualizing it and interacting with it (Hoggan, 2016b) was a “painful” process for Nei. By renouncing problematized assumptions, such as the “fear associated with stinginess”, and opening himself up to experience, Nei allowed the difficulties of dealing with emotions to signal the way for his process of self-reflection.

Renouncing the assumptions and expectations of being miserly was also painful for Nei, because it involved the loss of an orientation towards the future, taken for granted
until then. Interrupted future orientation produces a kind of “ontological or existential shock” (Mälkki and Green, 2014: 16). For, although the way of being is changed, there is a certain delay until its conceptual understanding is aligned with the new modality. Thus, it is necessary to deal with the loss of this guiding structure of the future, which must now be rebuilt according to the changed premises. Until then, the person has the feeling of being on an emotional roller coaster, not knowing when it will end and where it will lead: “We feel removed from the familiar sense of ourselves” (Mälkki and Green, 2014: 16). However, “it is only by allowing pain and confusion to enter the conscious mind that transformation can occur” (Lawrence and Cranton, 2015: 71).

In short, disorienting dilemmas meant moments when personal limitations surfaced in the lives of leaders, when they saw the need to change behavior, pay more attention to people or solve technical problems based on renewed perspectives. These were emotionally difficult moments, because the established expectations and assumptions proved to be inadequate to explain some aspects of the experience. They were confronted with areas or dimensions of apparent meaninglessness, and the most common reaction to this meaninglessness was anxiety (Mezirow, 1991).

Although the internal conflicts were painful and difficult, it seems that these moments of anxiety moved leaders towards some form of insight, resulting in transformative learning at the personal level and double loop learning (Argyris and Schön, 1996) at the organizational level. One piece of data that exemplifies this last type of learning is Nei’s statement that the implementation of a talent recognition policy has already pervaded the company’s organizational culture.

Based on these results, it seems essential to consider the emotional dimension of learning (Mälkki, 2012; Illeris, 2004) in addition to the cognitive-rational approach of Mezirow (2003). In this way, it will be possible to fill the “gap in relation to the emotional dimension”, often mentioned in the literature (Van Woerkom, 2010: 347; Sands and Tennant, 2010: 114; Illeris, 2004; Merriam, Caffarella, and Baumgartner, 2007: 137).

### 4.1.3 Learning categories

Most of the experiences reported by the interviewees – Beto, Armando, Rafael, Daniel and Nei – were included in the informal category. Informal learning is a natural consequence of everyday life experiences, it is not necessarily intentional and therefore
“may not even be recognized by the person himself as a contributor to his knowledge and skills” (SEC, 2000: 8).

Informal learning occurred both in the organizational context and outside it. For Beto, Armando, Rafael, Daniel and Nei (experience 2), they occurred in professional situations in the organizational context. The different circumstances include: crises in the company, problematic interaction with the team and disastrous communication with those they lead. Beto and Nei (experience 1) experienced, respectively, the death of a co-worker and the reading of a book, and their experiences occurred outside the organizational context.

José's experience was classified as non-formal learning. It took place during his participation in Empretec (Entrepreneurs and Technology), a course aimed at developing entrepreneurial behavior, in which he studied the history of leaders of global companies.

Finally, the interviewed leaders did not report experiences relevant to the formal category. Formal learning means “learning pathways in recognized educational institutions and programs leading to the awarding of diplomas and qualifications” (Sec, 2000: 8).

These outcomes are in line with Cranton's indication (2016: 48), when he states that "a disorienting dilemma can arise in many ways, such as, for example, in a change in the work context", as in the case of Armando, Daniel, Rafael and Nei (Experience 2); in a tragic event, such as the loss of a friend, in the case of Nei (Experience 1); or by reading a book, as happened with Beto.

Coinciding with these outcomes, McCall and Morgan (2010: 1) state that the main source of learning to lead is not genetics, nor are training programs, nor business school, but experience, that is, the informal way of learning. For Van Velsor, Mccauley, and Ruderman (2010: xix), most leadership development occurs at work, through tasks/assignments, relationships and hardships (disorienting dilemmas). According to the authors, formal development programs play an important and distinct role, but do not replace other formal and informal experiences.

In summary, the world around the leaders surveyed, especially the professional environment, provided them with rich sources of learning that influenced what and how they learned. Regardless of the adverse situation experienced, the experience of living it was a powerful path for the development of each of the interviewees.
4.1.4 Urge for change

One aspect that emerged from the data analyzes was the evidence of the “urge for change” at the time of the disorienting dilemma. Leaders' statements suggest that they made a choice between ignoring/dismissing the experience or constructively engaging with the disorienting dilemma, and chose to embrace the implications of the experience.

Engagement meant saying “yes” to integrating the new, even if the path to get there could be painful. At first, this was unconscious, but at some point in the process they decided to integrate, and at that point, the urge for change and a deliberate conscious effort to do so emerged.

Next, there are some statements that suggest the immersion of the interviewees in their disorienting dilemma.

“ [...] I had to understand [...] what happened, how does this happen? [...] So... then I started reading other things and studying this issue of awareness and learning more deeply, and that made me change also as a person.” (Beto).

“ [...] I decided that I was going to change for me... so, when I decide, for me, the page is turned, it's over, I understand the problem, I'm going to solve it. [...]” (Rafael).

“ [...] I started to think that I should check myself in some things and that I should think it was better for me to spend... So, there are certain things that, at first, I did it reluctantly, but then I realized that I should have done that myself... But under normal conditions of temperature and pressure, I wouldn't have done it, you know...” (Nei).

“ [...] Because it's my urge for change, it's a genuine desire, I want, I want to change.” (José).

“ [...] 'Man, I won't make that mistake again, I won't, because I assimilated it, I learned from it [...].” (Daniel).

Taken together, these accounts reveal a will component involved in deciding when and how leaders engaged in transformative learning. Mezirow (1991: 14) refers to this desire and urge as “conative power”.

Still regarding the "urge for change” component, Taylor and Cranton (2013: 40) state that people cannot be forced to change, they need to be willing and able to engage in activities that have the potential to lead them to changing perspectives. That is, transformative learning is a voluntary act, one must be open and willing to engage in the process. According to these authors, the idea that there needs to be a desire or willingness to
learn is not clearly addressed in theoretical descriptions and raises several interesting questions for theory, practice and research related to transformative learning.

4.2 TRANSFORMATIVE LEARNING OUTCOMES

In this subsection, the outcomes of transformative learning are analyzed from the perspective of Hoggan (2016b) and their relationship with the transformation processes of Mezirow (1991). In these analyses, Hoggan's (2016b) typology of transformative learning outcomes was identified as a useful framework for analyzing the research outcomes. This model made it possible to observe changes in different dimensions: world view, self, epistemological learning, ontological learning, behavior, and capacity. They are distinct dimensions, however, interrelated, of transformative learning.

Table 1 presents a summary of the relationship between the learning processes and the respective dimensions affected by these processes.

<table>
<thead>
<tr>
<th>Disorienting dilemmas</th>
<th>Learning processes (MEZIROW, 1991)</th>
<th>Affected dimensions (HOGGAN, 2016b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading a book. (Beto)</td>
<td>Change of epistemic and psychological perspective of meaning.</td>
<td>World view; Self; Epistemological; Ontological; Behavior</td>
</tr>
<tr>
<td>“Violent” crisis in the company; layoff of employees. (Armando)</td>
<td>Change of epistemic, sociolinguistic, and psychological perspective of meaning.</td>
<td>World view; Self; Behavior</td>
</tr>
<tr>
<td>Explosive and unexpected reaction from someone he leads. (Rafael)</td>
<td>Change of epistemic and psychological perspective of meaning.</td>
<td>World view; Self; Epistemological; Ontological; Behavior</td>
</tr>
<tr>
<td>Inappropriate speech. (Daniel)</td>
<td>Change of epistemic and sociolinguistic perspective of meaning.</td>
<td>World view; Behavior; Capacity</td>
</tr>
<tr>
<td>Experience 1: A friend suicided Experience 2: Crisis in the company. (Nei)</td>
<td>Change of epistemic and psychological perspective of meaning.</td>
<td>World view; Self; Behavior</td>
</tr>
<tr>
<td>Study the history of global company leaders at Empretec. (José)</td>
<td>Change of epistemic and psychological perspective of meaning.</td>
<td>World view; Self; Epistemological; Behavior</td>
</tr>
</tbody>
</table>

In order to understand what leaders actually learned in the context of this conceptual framework, the focus was on statements that signaled a specific outcome or change. Thus, the dimensions of learning that would have been affected by changes in meaning perspectives were identified. Below are the transformative outcomes in each of the six dimensions of learning.
4.3 DIMENSIONS AFFECTED BY THE CHANGE OF PERSPECTIVE OF MEANING

With the analysis lens of Hoggan's typology (2016b), it was verified that the effects resulting from changes in the sociolinguistic, epistemic and psychological perspectives of meaning affected the dimensions: i) world view; ii) behavior; iii) self; iv) epistemological learning; v) ontological learning; and vi) capacity.

Changes in the perspectives of meaning (learning processes) of the leaders interviewed for the present study were a consequence of a renewed interpretation of the experience, which, in turn, was reflected in the aforementioned dimensions. Next, the transformative outcomes of the learning processes are presented, that is, the outcome of these changes. They are classified according to the dimensions postulated by Hoggan (2016b).

4.3.1 World view

As a result of changes in the epistemic perspective of meaning, the dimension most affected by the leaders' experiences was “world view”. All leaders showed transformative outcomes in the world view dimension. Some statements can be seen below:

Beto: change from a two-sided view to a more complex, open and inclusive way of interpreting experiences; awareness of his assumptions, beliefs and expectations and how he shapes behavior (deeper self-awareness); and a broader vision of leadership (more open perspectives).

Armando: reformulation of the meaning of experiences as a way of preserving his essence (self-protection); reframing his own expectations and feelings in relation to his role as a leader; reformulating the meaning of experiences as a way to preserve his essence (self-protection); and reframing his own expectations and feelings in relation to his role as a leader.

José: reformulation of the meaning of uncomfortable emotions (conflict) in view of the change of perspective; emancipation from limiting assumptions and beliefs, and a broader view of the determinism of facts in the conduct of life (profound change in the view of how the world works).

The transformative outcomes in the world view dimension included changes in the way leaders began to interpret their reality from the examination of assumptions, paradigms and perspectives, that is, after challenging their perception of the world (Tennant, 2005: 109).
This dimension was the most accurate and complete understanding of reality, including the awareness of important things that were once ignored. In Hoggan's typology (2016b), this is called changing assumptions, beliefs, attitudes and expectations. Thus, this dimension focused on issues, problems and situations that, once perceived and known, were no longer hidden or unconscious. By exposing themselves to the harsh reality of experience, leaders developed more complex understandings of the world as well as envisioning greater possibilities, that is, they developed world views that include a greater variety of differences.

### 4.3.2 Behavior

The second dimension most affected by the leaders' experiences was “behavior”. In this sense, changes in the perspectives of epistemic, sociolinguistic and psychological meaning impacted on behavior.

The transformative outcomes in the behavior dimension involved practical expressions (actions, knowledge, attitudes) or new social relationships reintegrated into the context of the new or reformulated perspective. In this sense, all leaders presented transformative outcomes in the behavior dimension. Some of them are described below.

- **Rafael**: facing problematic situations in a lighter way, then avoiding clashes.
- **Daniel**: improvement of communication with subordinates, especially with regard to speech.
- **Nei**: improvement of communication with subordinates, change in lifestyle aimed at balancing personal and professional life, and institutionalization of practices aligned with the new perspective, such as, for example, the company's talent retention policy.

In this way, the transformative outcomes associated with behavior were identified in all dimensions of Hoggan's typology (2016b).

Changes in relationships, for example, are behavioral outcomes related to changes in the self. The change in behavior related to the world view is related to choices in life, decision-making in the company and the way of interacting with the community. Ontological changes outcome in learning new ways of being and also involve changes in habitual tendencies (e.g., physical and emotional reactions), which are behavioral by definition. Finally, “changes in epistemological patterns of decision-making can lead people to make different behavioral choices” (Hoggan, 2018: 46).

Behavior is the visible expression of assumptions, beliefs, expectations, and feelings of leaders, or rather, these assumptions guide their action. Day, Harrison and Halpin,
(2012: 106) argue, for example, that “behavior provides insight into differences in reference models (mental models) from one leader to another”. Some, for example, may think in terms of leadership with a focus on tasks and rewards (transactional leadership), while others think of leadership with a focus on values and people (transformational leadership).

4.3.3 Self

The third dimension most affected by the leaders' experiences was “self”, due to the change in psychological and sociolinguistic meaning perspective.

Transformative outcomes in this dimension indicated a significant change in leaders' sense of identity and in their relationship with followers. Data analysis provided some insights regarding the development of leader identity in respondents. In this sense, five leaders presented transformative outcomes in the “self” dimension. Some of this as follows:

- Beto: reframing the role of leader.
- Armando: authenticity and emancipation from social expectations about the leader's role.
- Rafael: restructuring of leader identity and changes in interpersonal relationships with subordinates.

The transforming outcomes associated with the Self revolved especially around the development of the leader's identity, resulting in a greater sense of authenticity, which was reflected in the interpersonal relationship with the followers (construction of social capital).

For theorists in the field of leadership development (Lord and Hall, 2005: 599), as the leader identity develops, the focus shifts from a more individual orientation to a more relational or collective orientation, “consistent with the adoption of increasingly inclusive world views”. This idea is consistent with the constructive-evolutionary theory of human development (Kegan, 1982) and with the theory of transformative learning (Mezirow, 1991).

4.3.4 Epistemological learning

The fourth dimension most affected by the experiences of leaders, as a result of the change in the epistemic perspective of meaning, was the dimension of
“epistemological learning”. Three leaders presented transformative outcomes in the dimension of epistemological learning, as follows:

Beto: development of a more empathetic way of knowing (ability to put yourself in the other’s shoes).

Rafael: progression from a relatively simplistic perception of leadership to a more complex perception (open minded).

José: development of a more intuitive way of knowing.

The insights captured in the dimension of epistemological learning were related to changes in the “form” (Kegan, 2013: 55) of knowing and being aware of. “Epistemological change does not only mean forming or changing meanings, it also means changing the very way in which meaning is constructed” (Kegan, 2013: 57). The outcomes in this dimension focused on the way leaders build and evaluate knowledge, that is, they changed the lens through which they perceive reality and interpret their experiences.

4.3.5 Ontological learning

The fifth dimension affected was “ontological learning”, resulting from the change in epistemic and psychological perspective of meaning.

Transformative outcomes in the dimension of ontological learning included changes in the leaders’ way of being. In this sense, two leaders presented transformative outcomes in this dimension, as follows:

Beto: change in terms of being more patient (flexible attitude).

Rafael: change in terms of being more sensitive to the limitations of those he leads, shift towards a more balanced orientation between tasks, outcomes and people, and change in terms of having a more flexible and empathetic attitude.

“Ontological changes refer to changes in deeply established mental and emotional inclinations that impact the overall quality and tone of existence” (Hoggan, 2016a: 74) of the leaders of this study. It was a shift in how they exist in the world and how they react physically and emotionally to experiences.

4.3.6 Capacity

Finally, the “capacity” dimension was influenced by the change in the epistemic and sociolinguistic perspectives of meaning.
Transformative outcomes in the capacity dimension included the expansion of awareness, which was promoted by the leader's exposure to new information, knowledge, insights or values, especially those that were different their own views or ignored.

Cranton (2016: 111) states that “the expansion of consciousness occurs, more commonly, when the person observes familiar things from a different perspective, thus increasing his self-awareness about ordinary things”.

As an insight captured in the report of one of the leaders participating in the study (Daniel), with regard to the capacity dimension, we have: the expansion of awareness towards a more inclusive, comprehensive, complete and integrated view of organizational reality, especially in what concerns the different profiles existing among those he leads.

Taken together, these results suggest that surveyed leaders engaged in transformative learning across all dimensions.

Therefore, during the analysis process, it was possible to perceive that the change in one dimension, frequently, generated changes in others. In this way, as the transforming process took place, it promoted the integral development of the leader, as a network of connections that was expanding.

Finally, from a theory point of view, by capturing some insights from the data, it was possible to reflect on the various dimensions of the transformative learning theory that impacted the development of the researched leaders, which made it easier for researchers to identify which learning processes led to which types of outcomes.

5 CONCLUSIONS

The present study aimed to understand how the learning processes of leaders of technology-based companies occur from the perspective of transformative learning. Leadership theories and the literature on its development provide vast information on the subject, most research directs its focus to instrumental aspects. They tend to look at specific interventions that are supposed to contribute to improving leader performance, such as leader development technologies (360-degree feedback, coaching, mentoring, on-the-job experience), rather than recognizing leader development as a broader, coherent, continuous, theoretically oriented and evidence-based process.

Based on the experiences reported by the interviewees and subsequent analyses, it was possible to identify, describe and understand how the leaders developed throughout their trajectories.
In order to understand how to learn to be a leader, the theory of transformative learning (Mezirow, 1991) was used. In essence, transformative learning happens when the individual critically questions and reflects on their own beliefs and actions, and this outcomes in a fundamental change in their way of perceiving themselves and the world. It refers, essentially, to the production of a new meaning from the experiences of the individual. As found in this study, transformative learning consisted of a change in the leaders' awareness, which altered their way of being (O'Sullivan, Morrell, and O'Connor, 2002: xvii).

Therefore, the first contribution of this study was the analysis and detailed description of the learning processes and how the change of consciousness can imply the development of leaders. In this sense, by showing which learning processes lead to which outcome, the research provides insights to think about how transformative learning can provide subsidies to understand the leader development process.

By conducting this study, it was possible to verify, in real-life contexts, that critical reflection was an essential element in the leaders' learning process. Therefore, it can be concluded that learning can occur continuously and informally, anywhere and at any time.

Understanding how the learning processes occurred made it possible to advance in the recognition of critical reflection as essential to the world of work, especially for the leader, since, “reflecting critically is learning to think for yourself – freeing yourself from conditioned assumptions about the world, the others and oneself” (Mezirow, 1998: 192), enabling conscious and responsible choices.

Also in what concerns processes, the important role that “emotions” played in the learning process of the surveyed leaders was identified. Emotions, especially uncomfortable ones, were embraced by leaders and perhaps were the catalyst for transformative learning, helping them in the process of identifying and reconsidering distorted or obsolete assumptions about the world, and leading them to the core of the dilemma (Maëlkkki and Green, 2014). They permeated not just one stage, as proposed by Mezirow (1991), but the entire transformation process. Thus, the relevance of emotions in this study is highlighted, as they are an aspect rarely portrayed in theory and rarely explored in previous works.

Another aspect brought by the data was the component of the urge for change, initially unconscious. However, at some point in the transformation process, the desire
for change became conscious. In the data, there were insights into the desire to change and a deliberate effort to change. This is considered an interesting aspect of the process, as, with their own inner strength, the leaders embraced new realities and forged new identities. Without this consent, they would not have the opportunity to experiment with new behaviors, reformulate old ways of thinking, feeling and acting, that is, they would not have learned from the experience. The urge for change was the step to move from reflection to transformation.

Surprisingly, this urge is an aspect rarely included in empirical research on transformative learning. Some researchers are concerned with “readiness to learn” and with the stages of learning, however, this is a more mechanical, organized and linear process than the concept of urge to change (Taylor and Cranton, 2013: 40). The question that remains is: what makes people want to change? Thus, from the data of this study, it is believed this is an issue to which theorists and researchers should pay more attention.

The second contribution of the study is the description and detailed analysis of the transforming outcomes and their implications in the way of leading. In this sense, understanding the learning outcomes made it possible to access the specific processes that promote them.

From data analysis, learning outcomes were identified in different dimensions: world view, self, epistemological learning, ontological learning, behavior and capacity (Hoggan, 2016b). Figure 1 expresses the group of learning outcomes, based on this typology.
The data also suggest an expansion of the leaders’ world view, making it more comprehensive and complex. Similar to Mezirow’s (2000) description, leaders’ models of reference (mental model or meaning structure) have become more inclusive, varied, permeable (open to other points of view), critically reflective of assumptions, emotionally capable of change and integrators of experience, giving profound changes to perspectives (change of paradigms).

The experiences of these leaders, as Mezirow points out (1991: 152), establish irreversible transformations. According to the author, “once a person sees the big picture, it is impossible not to be aware of what is now known. Thus, once completed, the process is irreversible.” It is not possible to go back to what it was before, as the entire paradigmatic perspective is expanded and restructured. The foundation from which the world came to be seen was irreversibly changed (Cranton, 1996).

In the learning process, leaders were able to review their perspectives, values and beliefs and, as a result, began to act differently based on the revised perspectives. It is important to highlight that all leaders showed outcomes in the behavior dimension.
(Hoggan, 2016b), since they adopted different ways of acting in relationships and in the way, they deal with everyday life, especially in the role of leader.

Self-knowledge and self-awareness emerged as products of critical reflection. The expansion of consciousness allowed the expansion of the sense of self (ontological process). Bringing the unconscious to light enabled them to increase self-awareness and develop more open perspectives. In addition, self-knowledge and self-awareness enabled leaders to understand how they shaped their way of being in the past. This means that, in this transformation, they developed an understanding of their values, beliefs and assumptions, both on a personal level and in their relationships with others, establishing a new way of relating to material and social reality. “Self-awareness is a theme that has long permeated the leadership development literature” (Allen, 2007: 34).

Flexibility of thinking (openness) was another outcome of transformative learning. Challenging their own opinions allowed the leaders surveyed to consider broader perspectives or approaches in general, that is, it allowed them openness to consider and understand the perspectives, values and beliefs of others, as well as openness to experimentation. Mezirow (2003) understands this flexibility of thought as a skeptical posture, which involves challenging one’s own strongly held opinions.

By seeking to understand the learning processes and their respective outcomes, it was possible to advance in understanding the existing dynamics between the two constructs – learning and development. The elements of transformative learning that stood out in this dynamic and resulted the development of the researched leaders are these: disorienting dilemma, emotions, critical reflection and outcomes.

As a third contribution, this work advances in understanding the existing dynamics between transformative learning and leader development, something not studied so far in TBCs. In this sense, the findings of this work contribute to the literature in the field of leader development, especially in this type of organization.

Finally, this research contributes to the exploration of the nature of transformation, for a clearer understanding of what it means to develop leaders. By properly understanding the dynamics of transformation, it is possible to think about how to develop leaders prepared for “adaptive work” (Heifetz, 1994: 22), that is, capable of leading people, organizations, communities, and societies towards transformation.

From this perspective, leaders are active subjects who reflect and act to make the world a better place. In this sense, the objective of transformative learning is, therefore,
social (and not just individual) transformation, but social change essentially depends on personal transformation. In conclusion, in this study, we sought to develop some ideas, theoretically grounded and based on evidence, of how people progress as leaders. It is hoped that, by systematizing the transformative learnings of six TBCs leaders, this research can illuminate the lessons learned from the experiences, so important for the field of leader development.

FINANCING

This work was carried out with the support of the Coordenação de aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Financing Code 001.
REFERENCES


Merriam, S., and Tisdell, E. T. 2016. *Qualitative research: A guide to design and implementation*. San Fransisco: John Willey and Sons


