



Technical Report

## Potential practical outcomes and learning from a Change Laboratory

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**Abstract:** This paper examines the potential practical outcomes generated during and from Change Laboratory (CL) interventions. Based on my experiences from interventions from Brazil and Finland, the study emphasizes two key results: conceptual learning and structural transformative learning. Conceptual learning involves changes in how the participants understand themselves and their activity systems, enabling participants to recognize contradictions, strengthening collective agency, and co-design solutions. Structural transformative learning here refers to actual changes in the activity, such as the implementation of a new object-purpose and a new model of the activity. It may also include new tools, new models, new techniques, new rules, new division of models that may contribute to the resolution of the contradictions. To illustrative I use a case from an intervention in the activity of resocialization of adolescents in conflict with the law located in a center in São Paulo, Brazil. The case shows how CL enabled participants to reconceptualize problems and redesign their purpose, giving new meaning to the instrument - the Individual Care Plan, which started following a new principle of listening to the youth participation, and significantly reduced violence. The findings highlight that CL interventions can foster meaningful transformation. However, broader systemic changes require continuity, inter-institutional collaboration, and supportive policies.

**Keywords:** Learning; Change Laboratory; Outcomes; Activity Theory; Formative Interventions.



## 1. Introduction

Some initial questions that a person asks himself or herself when encountered, for the first time, with the Change Laboratory (CL) method — both in planning and in the intention to participate in an intervention — are: why implement or participate in an CL? What practical achievements can be produced? What can participants learn?

The purpose of this paper is to discuss: what practical achievement can be gained and learned by participants from a Change Laboratory intervention? Thus, I should clarify from the beginning that this paper is about the knowledge learned by the people who participate in the intervention and changes in their activities, rather than about research knowledge and publications. To answer this question, I draw on my own experiences in conducting, supervising and/or monitoring more than two dozen formative interventions at workplaces, both in Brazil and in Finland (Francisco Junior et al., 2023; Lopes et al., 2021; Vänninen et al., 2021; Vilela et al., 2019).

Obviously, there are personal reasons that can lead a person to conduct or participate in an CL, such as curiosity, career advancement, social pressure, and need for research, among others. However, here we are interested in the practical collective and social motivations of intervention.

For those who do not know yet the Change Laboratory, it is an interventionist method, based on a Cultural Historical Activity Theoretical Approach created by a group of researcher from Finland in 1990s (Engeström et al., 1996; Virkkunen & Newnham, 2013). The method uses concepts and principles from social psychology, such as principle of double stimulation (Sannino, 2015), the model of activity system (Engeström, 2008) to support practitioners to analyses the problems faced in their activity and envision new solutions. A lot have been published about the potential learning and research results from a CL.

The results of a CL can be related to at least three aspects: conceptual learning, actual transformations in one or more activity systems, and formation of transformative agency. Here I will focus on the first two. To illustrate the results, I will present an intervention conducted by a colleague, (Morgado et al., 2020) in a reintegration center for young people in conflict with the law. In this intervention, carried out in one of the units of the Casa Foundation, in the State of São Paulo, Brazil, the initial problematic situation involved recurrent cases of violence between the center's security workers and adolescents. Faced with this scenario – and knowing the work developed by the research group of the School of Public Health of USP – the Public Ministry of Labor suggested the conduction of a Change Laboratory in one of the units that, at the time, was considered the most problematic: the Campinas unit.

In the following section, I present the two learning concepts used to describe the practical outcomes of a Change Laboratory: conceptual learning and structural transformative learning. I then outline the content of these learnings and identify who engaged in them. Finally, I summarize the process and discuss its implications for achieving more sustainable and effective interventions.

## 2. The two analytical concepts to understand the outcomes of a CL

Learning is a topic discussed at least since the time of the ancient Greek philosophers. Here, to keep focus on the changes that can be achieved in a CL, and not on the concept of learning, I limit myself to presenting only the analytical concept that will be used in this analysis.



## 2.1 Conceptual learning

Conceptual learning refers to a change in how a phenomenon is conceptualized, that is, how something is understood, explained, represented, or categorized. This aspect is sometimes called knowledge, generalization or cognition, and can be expressed discursively and observed in discourses and graphic representations. Although such concepts may appear to be individual or collective, I will not make this differentiation here, because these domains are deeply intertwined: the social is embedded in the individual, just as the individual is embedded in the collective. Language and knowledge themselves are social constructions, although they also have individual origins and manifestations. Conceptual learning, therefore, can refer to any element of the system—subject, object, rules, division of labor, community, expected outcomes, or tools.

## 2.2. Structural transformative Learning

Structural transformative learning refers to changes external to individuals, i.e., in the product or mediating structure of the activity system. Obviously, a concept understood as knowledge about something, can be and is materialized and externalized in shared representations (e.g. models), but here I refer to predominantly material, external/shared and consequential changes. This does not mean that they do not also involve conceptual, internal and cognitive aspects. Structural transformative learning is about the implementation, the application of an idea in practice, involving not only discourse but also consequential actions.

Although they have similarities with the concepts of remediation and expansive learning from Cultural Historical Activity Theory (CHAT), I choose to use other terms, as they are distinct phenomena and, thus, avoid confusion for the reader. These CHAT concepts are closer to what I call structural transformational learning. Perhaps the main difference between these two concepts of CHAT, and the two analytical concepts of learning adopted here, is that, in CHAT, learning is simultaneously conceptual and structural, without an explicit separation between these levels.

I recognize — and anticipate criticism — that the two levels of learning are not independent. On the contrary, they are dialectically constituted: they are one and the same thing. There is no concept or knowledge about something without the material and sociocultural structure to which it refers. The abstraction that I propose in separating these two phenomena is necessary for analytical and didactic purposes. This abstraction aims to break down the transformation process to better understand it, identifying intermediate results and allowing reference to what can be directly and empirically observed.

## 3. Learnings in the preparation of an intervention

The first learning takes place during the preparation of the intervention. Here, learning is limited to researchers and to some degree also the decision maker (e.g. management, administrator or policy maker). Generally, the starting point of a training intervention is a problematic situation – a problem that does not have an easy or immediate solution. The initial problems that usually motivate the implementation of a CL are situations marked by lack of clarity or by previous attempts at solutions that have had little success. Such problems can be of a technical, social or environmental nature.

After the negotiation of an intervention — which, in a very summarized way, involves the explanation and construction, through dialogue with the management, of the object of the intervention — the first stage consists of the collection of the "mirror data" (data that mirror the practices from the activity). This stage aims to gather materials that will be used during the



sessions to promote learning and, at the same time, to assist the interventionist-researchers in understanding the history of the organization, its contradictions, its functioning, the actors involved, and in the formulation of hypotheses about possible development paths. This does not mean that these hypotheses will necessarily be presented or will prevail, but rather that they will serve as a preparatory basis to guide the learning process.

After — or even during — the collection of mirror data, the team of researchers meets to discuss the data and perform a pre-analysis. This phase, which can be associated with ethnography or phenomenology, already involves a learning process on the part of researchers. By analyzing the data, the researcher begins to understand the functioning of the activity, its structure, contradictions and possible solutions.

In the case of the intervention described by Morgado (2020), during the collection of mirror data, the interventionist team was able to observe internal incompatibility in terms of infrastructure and contradictory practices. For example, the use of bars and certain procedures contradicted the principles of rehabilitation and education. A conflict between the security team and the social service team was also identified, among others.

The understanding of the problem, the system, the functioning of activities, their contradictions, and possibilities for development begins—but does not end—during the intervention preparation phase. At this stage, learning is predominantly conceptual, still partial and biased. Interventions interrupted at this point—for example, due to difficulties in negotiation—often result only in academic outputs, such as publications and conference presentations, and at best reach a limited group of professionals. These studies typically present their findings through the lens of CHAT. For instance, Botelho and colleagues (2023) investigated the Brumadinho dam disaster involving the Vale mining company (Botelho et al., 2023). Although they were unable to negotiate a CL, they published valuable insights gained during the preparation phase, including analyses of contradictions within and between the activities of safety and disaster prevention. Despite the limited practical impact, such in-depth understanding of the problem already represents an outcome.

## 4. Learning during the sessions

### 4.1 Recognition of the need for solution and participants role in problem solving

The first type of conceptual learning is learning the need to create a solution and the relationship between the participants and the problem. During the sessions, participants gradually change the way they understand the elements of the system. In the initial meetings, they often begin by re-conceptualizing the problem and their own relationship with it. Through the presentation of mirror data and group discussions, they become more aware of the seriousness of the issues they face and realize that there are no ready-made solutions; instead, it is up to them to construct viable paths forward.

Although the insight that *“there is no ready-made solution and it is up to us to solve the problem”* may appear simple, it is both challenging and crucial. This realization frequently generates cognitive discomfort, as many participants are accustomed to receiving pre-defined solutions from external agents such as consultants, doctors, teachers, priests, or psychologists. It is not uncommon for participants to express dissatisfaction with the interventionist, sometimes even frustration, at the idea that no ready solution exists and that they themselves must build it. Such reactions reflect how deeply ingrained the expectation of external solutions is.



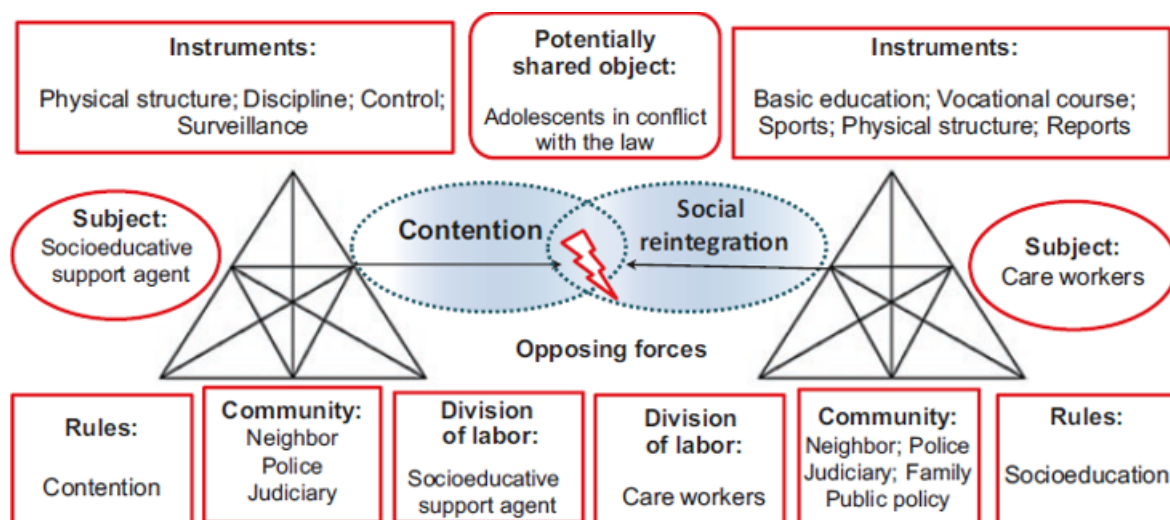
Developing new solutions collectively often creates cognitive dissonance and demands significant time and energy.

For a long time, I underestimated the importance of this learning moment. Only more recently did I recognize how critical it is, as it directly influences participants' commitment and the continuation of the subsequent sessions.

#### 4.2 Expansion of participants understanding of the problem

The second learning is the expansion of participants conception of the problem. Through the sessions, with historical analysis and the exchange of opinions and perspectives, an expansion usually occurs, that is, a qualitative change in the understanding of the roots causes that generate the challenges faced in the activity. From the understanding of the historical changes in their system, the participants usually formulate hypotheses of contradictions that explain the problems observed.

In Morgado's (2020) intervention in the center for the reintegration of young people in conflict with the law. During the sessions, participants began to realize that the way social workers and security guards defined the object (the young person) and, consequently, their practices and approaches — was contradictory. Although they dealt with the same object, the purposes were different: for the security guards, it was contingency, to prevent events of violence. To do this, they used practices of intimidation, control and, in some cases, violence. For social workers, the purpose was education, resocialization and empowerment of young people. Figure 1 shows the contradictions faced in the activity between the objects of socioeducative agents and care workers.



**Figure 1: Representation of the two activity systems with a partially shared object in the Fundação Casa, São Paulo Brazil, from Morgado (2020).**

The participants realized that one group ended up getting in the way of the other's work. The situation was conceptualized by the group through the model of two partially shared activity systems, in which although the object is physically the same (the young person), the teams focus on different aspects and aim for contradictory results (Figure 2).





**Figure 2: Participants in the intervention of the Change Laboratory at the Casa Foundation (Morgado, 2020).**

Another learning often reported by participants—though I do not classify it as a separate category—is the recognition of their own history. Frequently, there is no written record of this history, or participants have simply never taken the time to share it with one another. Within the CL process, they analyze their past and identify key historical events, which then serve as a basis for formulating hypotheses about existing contradictions. Gaining awareness of one's own history can also influence participants' sense of identity and may later facilitate collaboration. However, this potential impact remains an area that requires further investigation into future research.

#### **4.3 Understanding the object and the activity system**

The third learning is the conceptualization of the object and the activity system. It may sound surprising, but during interventions it is not uncommon to find that participants lack a clear understanding of each other's work. While they may be familiar with one another, they often do not have a complete picture of their activity system. In many cases, they have never taken the time to collectively reflect on how their activity operates—its purpose (object), tools, division of labor, rules, and the actors involved. For this reason, modeling their current activity system and way of working can already represent an important learning experience for practitioners.

Sometimes the analysis of the current system and object occurs before the historical analysis, other times afterward, but in both cases participants must engage in examining their current activity system to better understand its structure. Gaining awareness of the object and the system of activity is both revealing and necessary for formulating hypotheses about contradictions and, ultimately, for designing meaningful solutions. Without a clear conception of the object and the system, it is unlikely that the root causes of the problems will be identified.

The example from Morgado (2020) illustrates how important it is figuring out what the object of the activity is. Without it, they would not be able to redesign their system. Often, the subjects involved in an activity perform tasks without being fully aware of *why* they are doing it, what the social purpose of the actions is, what they are collectively building — that is, the object. In addition, often the activity system as a whole is not clear to the participants. They do not have an explicit vision of what their colleagues do, what actions they take, what tools and practices they use, with what objectives, what rules they follow, among other aspects.



#### 4.4 Recognizing the capacity to change

The fourth type of learning is the recognition of one's own capacity to change. Often, we take for granted—and therefore overlook—a key form of collective learning: the group's realization that they are capable of solving their own problems. As mentioned above, one of the first learning by participants is that there is no ready-made solution, and that it must be constructed by the participants themselves. This situation generates what researchers call a conflict of motives, or cognitive dissonance, which on the one hand motivates the search for solutions, but on the other can also lead to resistance and frustration.

This learning of one's own capacity is not always expressed discursively, but it often manifests itself in the increased agency of participants. This recognition—or discovery—of being capable of change is facilitated by the earlier learnings about the root of the problem and their current activity system. At this point, participants know what needs to change. Sometimes, mirror data from other contexts facing similar problems, where solutions have already been found, can support this process. This learning is also a fundamental ingredient for the next step: the collective construction of new solutions.

#### 4.5 Designing solutions

The fifth type of learning is the conception of the new solution. Coming to a solution is one of the most expected learning outcomes by the participants, as it can provide relief from the manifestations of contradictions experienced within the activity. It is very common that participants begin to discuss solutions already in the very first sessions, which at first sight could be seen as a positive sign. However, designing solutions before conducting a historical analysis of the system—its structure and contradictions—will most likely lead to superficial outcomes. The deeper the analysis, the deeper and more transformative the solution will be.

Here a practical recommendation is worth highlighting. I suggest that the interventionist researcher carefully takes note on a shared board of the proposed solutions so that they are not lost and may be revisited later. At the same time, the researcher should redirect the discussion back to the problems and the analysis during the initial sessions, postponing the focus on solutions until the group has a clear understanding of the historical and systemic contradictions at stake.

Much has been written about the consequential transformations produced by a Change Laboratory (Engeström & Sannino, 2010; Hopwood & Sannino, 2023; Nogueira de Vasconcelos et al., 2025; Vilela et al., 2019). Here, I limit myself to briefly mentioning the types of transformations and then illustrating them.

Solutions can be grouped into two categories: changes in mediators or changes in the object itself. Changes in mediators may concern technical mediators—such as tools, symbols, theories, and methods—or social ones, such as new rules, new community members and forms of cooperation, or a redefinition of the division of labor. Changes in the object, on the other hand, refer to qualitative enrichment of the object in a way that enables the contradictions of the system to be resolved. In most cases, changes in the object also involve changes in mediators.

The participants of Morgado's intervention, based on the conception of contradictions, redesigned the way they elaborated the Individual Care Plan (IAP) — an interdisciplinary technical institutional instrument that, in principle, should be built by the team collaboratively when the adolescent enters the institution. However, alleging lack of time or opportunity for collaboration, the plan was prepared in a protocol manner only by the technical team, as a necessary



bureaucratic document. With the intervention, the IAP was reconceptualized by the participants as a means of collaboration, following the new fundamental principle: listening to the adolescent. From the intervention, the elaboration began to be carried out not only in conjunction with the technical team (educators, social workers and psychologists) and the security guards, but, above all — and more importantly — with the active participation of the young person.

## **5. Learning after or between the sessions**

### **5.1 Learning during the implementation of solutions**

Once a solution is designed, the most challenging phase begins—the implementation—which requires greater human and financial resources. Here learning is both conceptual and structural transformational. If participants receive support from management or strategic decision-makers, that is, those responsible for allocating resources, they are generally able to start implementing at least some of the proposed solutions. Securing this support, however, also involves a form of learning on the part of the decision-makers. They have to learn what the participants have learned. When they do not take part directly in the intervention, continuous interaction and communication are essential to ensure that the learning of participants remains aligned with that of decision-makers.

Implementation means the materialization of solutions. Consequential actions are taken that gradually reshape the structure of the activity system. As solutions are put into practice, tertiary contradictions—tensions between the old and the new—begin to emerge. These contradictions require participants to return to the model, analyze it again, and refine it, in a continuous cycle of reflection, testing, and implementation. The implementation involves reconceptualization and also a structural transformational change of the activity system, in which not only the participants and the management learn, but the a broader community and the structure of activity systems is transformed.

In the case of this intervention, the workers had the support of the local management and the concrete possibility of testing and implementing the idealized solutions. This enabled transformational learning, with structural changes in the activity system. In this case, the transformation was in the object, which became in fact shared, in the tool, the IAP, which started to follow a new principle: listening to the young person. This implied a new form of organization and cooperation among professionals.

This new conception of the object, articulated with the artifacts (such as the IAP) and with a new division of labor, led to a significant reduction in episodes of violence in the unit, which was precisely the starting point of the intervention. As a result, the unit — previously considered one of the most problematic — came to be seen as a model within the system.

### **5.2 Learning during the consolidation**

The evaluation and reflection of the new activity model is necessary to consolidate the new model, representing an important result of the learning process that can occur from a Change Lab. In this phase, participants systematize what they have learned and how they can support it. In Morgado (2020) intervention, after the end of the intervention, a co-evaluation and reflection session was organized together with the management, with the aim of systematizing and discussing the possibility of disseminating the pilot created in the intervention. To do this, we adapted the method called Human-Centered Co-evaluation, proposed by (Hyytinen et al., 2019).





This method is premised on the active participation of the workers who developed the innovation: they present the results obtained to management, which, in turn, evaluates the relevance and feasibility of the proposal, making decisions about its support, continuity or expansion. The methodology seeks to balance the practical knowledge of workers with the strategic requirements of management, promoting a constructive dialogue between different levels of the organization. It is a collaborative evaluation process guided by human values and supported by concrete evidence of practice.

During the co-evaluation session, senior management recognized that the pilot was interesting and the idea promising. However, he pointed out that the diffusion to other units would depend on broader factors, especially legal issues, which would require changes in the current legislation. In addition, it was highlighted that it would be necessary to articulate collaboration with other systems of activity, such as the judicial system and municipal governments, which are responsible for the individual plans of young people in assisted freedom.

### 5.3 Learning during the dissemination

The dissemination of the learning from the local experiment is something challenging, as it involves external activity systems that did not participate directly in the initial process. Scaling up outcomes requires changes at other levels, i.e., the continuity and dissemination of learning within a wider network of activity systems. A single intervention is rarely enough. Therefore, researchers must anticipate and plan strategies to ensure continuity, whether through new intervention cycles, inter-institutional articulations, or structural and political support.

In Morgado (2020) intervention the dissemination did not take place. Faced with complexities, interventionist researchers concluded that it would be necessary to carry out a new CL, now involving multiple actors and multiple institutional levels. This approach is characterized as a fourth-generation CL, whose emphasis is precisely on intersectoriality and the transformation of broad socio-technical systems, through collaboration between different organizations for the joint construction of more sustainable solutions.

## 6. Final considerations

In this paper, I have suggested some potential practical learning results from a CL intervention. Two types of learning are possible: conceptual and structural transformational learning. Box 1 summarizes these learnings in a general logical order, aligned with the typical phases of a CL. However, it is important to highlight that this does not imply that such learning will necessarily occur in every intervention, nor will they follow this exact sequence.

Regarding who learns during the sessions, it is difficult to determine precisely it, since this varies from case to case. In some interventions, there is a stronger connection between participants and external members, which allows knowledge to reach individuals who did not take part directly, while in other cases, it is likely that not all participants learn. There are also situations in which new participants are gradually incorporated into the process, or in which communication with other learning spaces is deliberately encouraged.

Therefore, it is difficult to establish a generalization. Such a generalization would require a more in-depth empirical analysis. Nevertheless, I would venture to say, based on my experiences — and particularly considering Morgado's (2020) intervention as an example — that, at this stage, learning usually involves the researcher, management, and some participants. I would also say that learning in this space is mostly conceptual, as no structural changes in the system have been implemented yet.



### Box 1. Summary of learning during and from a Change Laboratory

#### I) Conceptual Learning

- A. Recognition that **there is no silver bullet** and that **it is the participants who need to solve the problem** — not an outside expert who will come up with a ready-made solution.
- B. **Expansion of the understanding of the problem**, through the formulation of **hypotheses about contradictions** that can explain the observed manifestations.
- C. Understanding of the **current activity system** and definition of the **object of the activity**.
- D. Recognition that **participants are capable of bringing about change**—that is, strengthening collective agency.
- E. Formulation of **concrete solutions**, including the **design of a new object** and a new **model of the activity system**.

#### II) Structural Transformational Learning

- A. **Implementation of solutions**, which may involve the introduction of new elements into the activity system or the definition of a **new activity object**.
- B. **Reflection and consolidation** of the implemented solutions, evaluating their effectiveness and adjusting the model as necessary.
- C. **Dissemination of solutions** to other locations or similar contexts, promoting the expansion of the impact of the transformation.

Learning between and after the sessions usually goes beyond the researchers, participants and management, involving other members of the community and in some cases other neighboring activity systems, and in some cases even activities at different hierarchical levels. Again, it will depend on the specific configuration, the problem being addressed, the support, the connections, the solution envisioned and many other particularities. Here I do a generalization based on my previous experiences, which are mostly what would be classified as second and third generation CLs<sup>1</sup>, that at this phase learning expanding beyond participants and even beyond the particular activity under analysis (Table 1).

Despite differences between interventions, it is possible to generalize that the subject of learning throughout the Change Laboratory is expansive, involving the formation of a coalition of people collaborating to transform one or more activity systems. At the beginning of the CL, learning is largely limited to the researcher and, in some cases, also to management. If negotiations progress well, learning expands to participants; after implementation, it extends further to other community members and neighboring activity systems. If expansive learning continues, learning may spread to similar activities from different locations.

<sup>1</sup> The generations of CLs refer to the different unit of analysis. The second generation refer to CL which involve a single activity system, while the third generation involve more than one. For more detail see (Engeström & Sannino, 2021).

**Table 1. Description of the subject and predominant type of learning during a CL.**

Who learn?	Mostly conceptual		Conceptual and Structural Transformational		
	Preparation	In Sessions	Implementation	Consolidation	Diffusion
Researcher	■	■	■	■	■
Management / Decision makers					
Participants		■	■	■	■
Community					
Neighbouring activities				■	■

The CL can thus be understood as a process of constructing heterogeneous coalitions through cycles of expansive learning, which continue to grow and consolidate over time (Engeström & Sannino, 2021). The continuity of the expansion initiated by a CL largely depends on the strength and sustainability of these coalitions. However, further knowledge is needed about how the interventionist researcher can actively support and nurture these coalitions to ensure their long-term development and impact.

### About the author

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