International Society of the Learning Sciences

Expansive Learning and Transformative Agency for Equity and Sustainability: Formative Interventions in Six Continents

Yrjö Engeström, University of Helsinki, Finland, yrjo.engestrom@helsinki.fi (Convenor, Author)
Aydin Bal, University of Wisconsin-Madison, United States, abal@wisc.edu (Convenor, Author)
Annalisa Sannino, Tampere University, Finland, annalisa.sannino@tuni.fi (Author)
Luciana Pena Morgado and Rodolfo Andrade de Gouveia Vilela (Authors)
lucianalpm24@gmail.com, ravilela@usp.br
University of São Paulo
Marco Antonio Pereira Querol, Federal University of Sergipe, Brazil mapquero@academico.ufs.br (Author)
Heila Lotz-Sisitka, Rhodes University, South Africa, h.lotz-sisitka@ru.ac.za (Author)
Ge Wei, Capital Normal University, Beijing, China, ge.wei@cnu.edu.cn (Author)
Nick Hopwood, University of Technology Sydney, Australia, nick.hopwood@uts.edu.au (Author)
Jaakko Virkkunen, University of Helsinki, Finland, jaakko.virkkunen@helsinki.fi (Discussant)
Mutizwa Mukute, Rhodes University, South Africa, mmukute@gmail.com (Discussant)

Abstract: This double symposium brings together activity-theoretical formative intervention research conducted in six continents. The aim is to illuminate and examine the common threads, important differences, and new challenges of formative intervention studies to address "wicked problems" in different cultural, political, and economic contexts. Formative interventions facilitate expansive learning and systemic transformation led by local stakeholders in organizations and social movements. The formative intervention methodology is based on the principles of double stimulation and ascending from the abstract to the concrete. Its most well-known application is the Change Laboratory method. Formative interventions generate and support expansive learning and transformative agency. The current global crises of climate change, poverty and deepening inequalities are giving rise to what is called fourth generation activity theory for tackling fateful challenges by building heterogenous multi-activity coalitions. The symposium will present the theoretical and pedagogical challenges and possibilities in Change Laboratories and other formative interventions to develop just and sustainable solutions to global crises.

Symposium Overview

This double symposium brings together activity-theoretical formative intervention research conducted in six continents. The aim is to illuminate and examine the common threads, important differences, and new challenges of formative intervention studies in different cultural, political, and economic contexts. The methodology of formative interventions is based on the principles of double stimulation and ascending from the abstract to the concrete (Engeström, Sannino & Virkkunen, 2014; Sannino, Engeström & Lemos, 2016). Its most well-known application is the Change Laboratory method that has been used in more than 30 countries since its inception in Finland in the 1990s (Engeström & al., 1996; Sannino & Engeström, 2017; Virkkunen & Newnham, 2013). Formative interventions generate and support expansive learning (Engeström, 2015) and transformative agency (Sannino, 2020b). The current global crises of climate change, poverty, and racial inequality are giving rise to what is called fourth generation activity theory for tackling fateful challenges by building heterogenous multi-activity coalitions. This is reflected in recent developments in Change Laboratories and other formative interventions. The symposium will present and discuss these developments and seek ways to conceptualize them.

In learning sciences, it has been suggested that formative interventions might be a way to overcome the limitations of the linear interventions and expand design-based research regarding engaging local stakeholders in the design, implementation, and analysis of interventions (Gutierrez, Engeström, & Sannino, 2016; Penuel, 2014; Sannino & Engeström, 2017). Change Laboratories and other formative interventions offer new possibilities for rigorous analyses of intensive processes of collective learning, agency formation and design. Methods developed for systematic analyses of formative intervention processes allow for comparisons between interventions conducted in different circumstances. The symposium presentations will examine a range of methods used in such analyses.

The six papers of the double symposium are those of (1) Yrjö Engeström (Europe), (2) Annalisa Sannino (Europe), (3) Aydin Bal (North America), (4) Marco Pereira Querol (South America), (5) Heila Lotz-Sisitka (Africa), (6) Ge Wei (Asia), and (7) Nick Hopwood (Australia). Together the papers offer a rich set of detailed case analyses of Change Laboratories and other formative interventions from the six continents.

 © ISLS

The authors of the papers will elaborate specifically on the following questions from the perspective of their own continents:

- What are the challenges and needs for which formative interventions pursuing fourth generation activity theory might be particularly useful and relevant?
- What theoretical and pedagogical challenges and possible new developments might be identified in the methodology of formative interventions?

Paper 1: Formative Interventions in Theory and Practice: Change Laboratories across the Globe

Yrjö Engeström, University of Helsinki, Finland

This introductory paper of the symposium reviews and discusses the basic theoretical and methodological tenets of formative interventions. It presents the preliminary results of a comprehensive literature review of studies on Change Laboratory interventions conducted in different parts of the world. The Change Laboratory is a formative intervention method based on cultural-historical activity theory and the theory of expansive learning. Committed to serving struggles for equity, social justice and sustainability, the Change Laboratory was developed and first implemented in 1995 in Finland. Grounded in dialectics and the Vygotskian theoretical tradition, its uptake has been demanding and only quite recently it has reached the point of accelerated international adoption. By now the Change Laboratory has been used in over 30 countries in educational institutions, workplaces, and communities to generate bottom-up solutions to challenging problems and complex transformations. At this point, about 250 publications on Change Laboratories have been identified. This growing body of research s warrants a careful and comprehensive review.

Paper 2: Change Laboratories of the Fourth Generation: Interconnected Interventions for Eradicating Homelessness in Finland

Annalisa Sannino, Tampere University, Finland

Fourth generation activity theory (Engeström & Sannino, 2021) emerges largely through formative interventions that support the creation and development of heterogenous coalitions focused on critical societal challenges and "wicked problems." Whereas the early implementations of the Change Laboratory method were focused on contradictions and transformations in single relatively well-bounded activity systems (Engeström et al., 1996), fourth generation Change Laboratories bring together actors from different activity systems, from grassroots practitioners and activists to administrators and decision-makers across sectors and levels of governance.

The first full-scale effort at this type of Change Laboratory intervention was conducted in 2018 and 2019 in Finland, to support the effort to eradicate homelessness in the country. Three interconnected Change Laboratories were conducted, the first one in a supported housing unit for formerly homeless young people, the second one in the city of Tampere, and the third one at the national level. A large number of NGOs, public sector service providers and agencies, cities, and ministries participated in the city level and national level Change Laboratories. However, the first intervention in the housing unit became a reference point and source of energy for the subsequent city level and national level laboratories (Sannino, 2020a; 2020b).

In fourth generation activity theory studies, multiple coalescing expansive learning cycles need to be nurtured and analyzed. In this paper, we will examine connections and interactions between the expansive learning cycles of three Change Laboratories. All the six sessions of each Change Laboratory were video-recorded and transcribed. We also recorded a number of interviews with participants and homelessness experts. In addition, each Change Laboratory produced a document detailing the solutions and suggestions designed in the intervention. This extensive dataset will be analyzed to answer the following questions:

1. What kinds of connections and interactions may be identified between the expansive learning cycles induced by the three Change Laboratories?
2. How were these connections and interactions related to the different expansive learning actions (Engeström, Rantavuori & Kerosuo, 2013) and to the different steps in the formation of transformative agency by double stimulation (Sannino, 2015; 2020a; 2020b; Morselli & Sannino, 2021)?

Paper 3: Inclusive Future Making to Address the Racialization of Behavioral Problems in Schools

Aydin Bal, University of Wisconsin-Madison, USA

This paper presents the Culturally Responsive Behavioral Interventions and Supports (CRPBIS) Project and a multisite longitudinal formative intervention study, Learning Lab, that aims to examine and disrupt the

racialization of behavioral problems with local stakeholders, especially those from racially minoritized communities who have been historically excluded from schools' knowledge-production and decision-making activities.

Disproportionality in behavioral outcomes is a historically accumulated systemic contradiction that requires systemic solutions led and owned by local stakeholders (Bal, 2018). The CRPBIS Project was initiated in 2011 in the state of Wisconsin as a strategic family-school-community-university coalition and funded by the state's education agency, districts, civic organizations. An inclusive knowledge-production and systemic design process, Learning Lab, has been implemented in public schools in the United States (U.S.) and Brazil facing racial disparities in school discipline. Learning Lab is informed by Cultural-Historical Activity Theory (CHAT), critical pedagogies, and decolonizing epistemologies (Cole, 1996; Engeström, 2016; Freire, 2000; Ladson-Billings & Tate, 2006; Smith, 2021). Learning Lab is a formative intervention in which local stakeholders work collectively to transform their systems through articulation, examination, and resolution of contradictions. The role of the interventionists in formative interventions is to stimulate a transformation process (Gutierrez et al., 2016).

Learning Lab has been implemented at 12 schools: Two elementary, seven middle, and two high schools in four districts in Florida and Wisconsin in U.S. and one K-12 special education school in Rio, Brazil (Bal, 2016; Bal et al., 2018; Bal et al., 2021). Leaning Labs informed each other. Learning Labs included 10-15 stakeholders, especially those who were historically excluded from schools' problem solving and decision-making activities. Learning Lab united students, parents, community members, teachers, support staff (e.g., social workers, and playground attendants), administrators, representatives of civic organizations (e.g., Urban League, Centro Hispano) and the university researchers. Following a cycle of expansive actions (Engeström, 2016), members started identifying daily manifestations of the contradictions in their schools related to discipline and analyzed their existing discipline systems and its outcomes. Then, they designed new behavioral support systems to address those contradictions. The new systems were culturally responsive to their school communities' diverse experiences, resources, interests, and goals. The new systems are implemented in the next academic year.

Data were generated through video recordings of meetings, interviews, and document analysis. The method of analysis of expansive actions (Engeström et al., 2013) and the emergence of transformative agency (Sannino, 2015) were utilized.

This paper presents the design principles of the Learning Lab as an example of fourth generation CHAT (Engeström & Sannino, 2021). The session will contribute to the learning sciences by demonstrating how local stakeholders and organizations with diverse and often opposing interests and histories built heterogenous coalitions that collectively generated knowledge about racial disproportionality and designed the future of their schools for justice, joy, and expansive learning for *all*.

Paper 4: Formative Interventions for Re-integration of Adolescents in Conflict with the Law

Luciana Pena Morgado, Rodolfo Andrade de Gouveia Vilela, Marco Antonio Pereira Querol

Change Laboratory has been increasingly used in Brazil as a method for developing work in multiple activities (Vilela et al. 2020). For instance, it has been applied in developing the activity of children labor prevention (Donatelli et al. 2020), public health (Masiero, 2018), education (Cenci et al. 2016; Silva-Macaia et al. 2020), railway transport (Lopes et al. 2020), urban cleaning service (Bobadilha, 2020), waste management (Cassandre et al. 2018), agroforestry (Francisco Junior, 2018), airport construction (Lopes et al. 2018), and labor inspection (Vilela et al. 2018) among others.

The study presents a Change Laboratory intervention implemented for developing activities involved in the re-integration of Adolescents in conflict with the law (Morgado, 2018; Morgado et al. 2020). The initial problem that led to the demand of the intervention presented in this study was the recurring episodes of violence in which security guards and adolescents were involved in a cycle of violence. The intervention took place in a Re-integration Center located in Campinas, Sao Paulo State, Brazil. In the study, we will present how the method of double stimulation was used to produce transformative agency and expansive learning. The data is composed by 30 hours of transcription of videos of 14 sessions, lasting two hours each, which took place between August 30, 2018, and April 30, 2019. During the sessions, with the use of double stimulation, practitioners expanded their conception of the problem and causes of violence, formulating a hypothesis of the main contradiction between the object of social workers (to re-integrate by education and psychological assistance) and the object of the security guards (to imprison using violence). With the help of models as second

stimulus, workers designed, tested, and implemented a germ-cell - a new model for the activity that integrated both objects. They developed a boundary crossing tool, what they called an "Qualified Case Discussion", in which the family of the adolescent, the security guard, the social workers, psychologists and pedagogues jointly constructed the trajectory of a young. The main developmental challenge now is how to expand the new model to other units of the institutions and to the high management.

Paper 5: @River Commons Formative Intervention: Scaling Citizen-based Water Quality Monitoring in South Africa

Heila Lotz-Sisitka, Rhodes University, South Africa

Fourth generation CHAT research and its concern for poverty and climate change responsiveness via expansive learning and transformative agency (Engeström & Sannino, in Yamazumi, 2020) is immanently necessary in South Africa, the 30th driest country in the world where we are experiencing a persistent crisis in water resources supply and quality management which affect the poor most severely. This crisis intersects with a historicity of apartheid state infrastructure marginalization, and contemporary mass failure of wastewater treatment plants and associated monitoring capacity. Coupled with regular climate change induced droughts, this manifests as a cultural-historical-ecological wicked '@RiverCommons' problem of long durée. It induces an urgency to learn and act in and for equity and sustainability in a context where a history of racism and exclusion has left up to 60% young people unemployed. Involved in the '@River Commons' 4th generation CHAT inspired formative intervention processes (Engeström & Sannino, 2021) are policy actors, intermediary institutions, and citizen-based water quality monitoring (CBWQM) groups operating in an intersecting, multi-levelled system of heterogeneous coalitions (HCs). Currently this is involving the following HCs:

A tertiary form of heterogenous coalition (HC) involving: the Department of Science and Innovation, the Water Research Commission, Ecological Infrastructure for Water Security coalitions, business partners, major NGOs, national educational institutions, and the Presidential Employment Stimulus Programme

Secondary form HCs - Hosting organizations and graduates: River Rovers (supporting the Enviro-Champs) and Data Detectives (translating the data from the mobile data monitoring application into tools for 'management into action' and 'agency for river health' activity, amongst others), all working in support of CBWQM river monitoring activity.

Primary HCs involving unemployed youth and their communities, community organizations, traditional leaders and local government partners who monitor and report on river health at local levels in and across catchments.

All are engaged in expansive learning cycles that seek to address a pernicious policy-praxis contradiction that promotes CBWQM, but which fails to support it pro-actively on all fronts.

The '@RiverCommons' formative intervention is taking place as we speak – to date over the past four years, continuing into the present. Led by a coalition of active partner organizations operating within and between diverse HCs; expansive learning cycle(s) and transformative agency via double stimulation processes have been catalyzed along HC learning pathways that focus on different aspects of generatively 'scaling' CBWQM activity along a differentiated CBWQM value chain. Mirror data and double stimulation tools have been generated through historical and ethnographic data that includes reviews of CBWQM practice, survey data involving 60 CBWQM HCs, analysis of research and evaluation reports, questionnaire data, and in-depth policy contradictions analysis as well as workshop data.

Four adapted change laboratory interventions or 'national workshops', involving intersecting actors from the 3 HCs, with smaller scale less formal Change Laboratories involving multi-actors (at times online due to COVID-19) in-between the 3 main CLs, were catalyzed and documented, with more emerging. Diverse aspects of generative forms of 'scaling' CBWQM activity have, so far, been advanced with different HCs along expansive learning pathways, and via cross over Change Laboratories involving all HCs. The 'old' activity of voluntary CBWQM using a limited scope of tools has been extended to a youth employment initiative developing a 'work for the common good and learn for the future' approach to CBWQM that embraces equity and sustainability principles *at the same time*, using a wider range of tools, but which still needs to be more fully institutionalized and embedded in national systems of education, training and work. The '@RiverCommons' formative intervention work is therefore still in progress but is shaping emergence of ethico-politically inspired emancipatory agency from below for scaling of CBWQM '@River Commons' in settings where equity and sustainability must be engaged at the same time. Elaboration of the focus on emergent ethico-political emancipatory agency across HCs offers a new perspective on CHAT research, especially in its emergent fourth generation.

Paper 6: Developing Pre-service Teachers' Practical Knowledge through Formative Interventions

Ge Wei, Capital Normal University, Beijing, China

Practical knowledge is critical for the professional development of teachers, and the development of such knowledge in advance is important in initial teacher education (ITE). However, very little research has so far been undertaken to uncover the evolutionary process through which the components of such practical knowledge are acquired. By conducting a longitudinal interventionist study in a Chinese Normal university during the 2017-2018 academic year, this paper helps improve the understanding of how pre-service teachers (PSTs) develop their practical knowledge through interventions made by more experienced external parties (e.g., school and university mentors). Through the 13-month period of formative interventions, we examined a series of changes in PSTs' practical knowledge through their performance in a mandatory learning module, *Curriculum and Instruction* (which includes two courses and seven credits), in a bachelor-level ITE program.

Drawing on expansive learning theory (Engeström, 2015), we explored a multi-cyclical learning trajectory of theory and practice during the interventions. The results showed that the seven expansive learning actions functioned as analytical tools to map the PSTs' learning, while several deviations, disruptions, and practical actions of design during the process were revealed as well. Moreover, knowledge components of PSTs' practical knowledge have various manifestations in different sessions of intervention.

This study is a response to the historical crisis of the theory–practice schism in teacher education. In contrast to a linear input-output teacher training method, formative interventions facilitate the development of PSTs' practical knowledge through active engagement, self-inquiry, and a 'heterogeneous coalition' (Engeström & Sannino, 2020) between PSTs, teacher educators, and potential knowledgeable others. This study proposes a new research agenda for the transformation of ITE program through the activation of PSTs' professional agency in formative interventions. Meanwhile, it contributes Asian experiences and reflection to the methodology of interventionist studies in an uncertain times.

Paper 7: Developing Equitable and Engaging Pedagogies in Nepalese Classrooms through a Cross-national Pragmatic Formative Intervention

Nick Hopwood, University of Technology Sydney, Australia

This paper addresses the questions of this symposium with reference to a collaboration between education researchers in Australia and teachers and teacher educators in Nepal. What are the current challenges and needs for which Change Laboratories and other formative interventions pursuing fourth generation activity theory might be particularly useful and relevant? What theoretical and pedagogical challenges and possible new developments might be identified in the methodology of formative interventions? In this case, challenges related to (1) aiming to deliver long-term change but having only limited time for direct collaboration; and (2) constraints in the Nepali education system that created contradictions between participants' desired pedagogies and those that seemed possible. The formative intervention needed to develop means to enact high quality pedagogies that cost little or nothing in money and time. The paper reveals how pragmatic variations to Change Laboratories can uphold foundational principles while also adapting to contingencies of complex international collaborations and challenging pedagogical environments.

Starting points: frustrated pedagogical ideals

Many teachers and teacher educators share a common frustration: that the pedagogies that wish to see enacted in classrooms do not materialize. We need to identify historically accumulated contradictions in activity systems that lie at the roots of these difficulties. In countries such as Nepal, these contradictions originate in colonial influences on formal education, and continued inequalities of wealth. Today, teachers are charged with delivering a curriculum that is heavy with content, often in crowded classrooms, often in a language (English) that is not the language students speak at home. Cultural values and norms also shape what teachers do in the classroom, and thus may contribute both to the development of contradictions, but also ways of breaking away from them.

The intervention

A formative intervention study was conducted that resulted in a significant change in pedagogies across a whole school in Kathmandu. It was part of a collaboration between the University of Technology Sydney, Kathmandu University and Tribhuvan University in Nepal, The Royal University of Bhutan, a Nepalese

 © ISLS

educational NGO, and teachers from schools in Nepal and Bhutan. A group of 14 teacher educators and teachers spent two weeks in Sydney, and then continued the process of change upon return home. Inspired by the Change Laboratory (Engeström et al., 2014), mirror data were collected to enable participants to gain reflective distance and see themselves as agentic actors (Virkkunen & Newnham, 2013): closely discussing practice and using artefacts to identify problems and question the status quo (Bal et al., 2021; Morris et al., 2021). A key contradiction was identified: a desire to engage learners more, more interactively with each other, and more equitably (particularly concerning female and less high-achieving students) vs didactic approaches that became a default for teachers concerned to deliver content in a short amount of time (where student engagement tended to be limited to higher-achieving boys who would volunteer to answer teacher questions, and there was otherwise little student-student interaction).

The outcomes

Participants developed a suite of eight principles: new mediating artefacts to reshape classroom practice. Crucially these were viewed as being low-or-no cost materially and in terms of time. These were: growth, playfulness, liveliness, designing for praise and appreciation, setting up for success, inclusiveness, journeys between concrete and abstract, and stories. Two teacher educators from Kathmandu University applied these principles through the idea of micro-projects. They took this idea back and worked over several years with a nearby school – Creative Academy. Micro-projects began as a germ cell, a compressed idea that ascended and expanded into diverse concrete forms (Engeström, 2020). It was a practical idea that could embody the eight principles. Over time, a micro-projects group formed in the school, and their use spread across curriculum areas and grades, first across the primary school and then into the secondary school.

Insights

Micro-projects became firmly embedded in pedagogies in Creative Academy, representing a significant transformation. This became possible through expansive learning, prompted by the formative intervention. However, tracing ways in which the object expanded reveals how this process relied on principles that have long underpinned Change Laboratories, but which diverge significantly in their concrete, pragmatic manifestation. This suggests a helpful openness in CHAT-inspired formative interventions, showing their adaptability in the face of distinctive challenges presented by contextual needs and constraints.

References

Bal, A. (2018). Culturally responsive positive behavioral interventions and supports: A process-oriented framework for systemic transformation. *Review of Education, Pedagogy, and Cultural Studies, 40*(2), 144-174.

Bal, A., Afacan, K., Clardy. T. & Cakir, H. I. (2021). Inclusive future making: Building a culturally responsive behavioral support system at an urban middle school with local stakeholders. *Cognition and Instruction*. https://doi.org/10.1080/07370008.2021.1891070

Bal, A., Bird Bear, A., Ko, D., & Orie, L. (2021). Indigenous Learning Lab: Inclusive knowledge-production and systemic design toward Indigenous prolepsis. In W. Cavendish & J. F. Samson (Eds.), *Intersectionality in education: Toward more equitable policy, research and practice*. Teachers College Press.

Bobadilha, B. G. (2020). Invisibilidade pública na atividade de varrição: uma pesquisa-intervencionista para formação de agência transformativa no trabalho (Doctoral dissertation, Universidade de São Paulo).

Cassandre, M. P., Senger, C. M., & Querol, M. A. P. (2018). Contributions of the activity theory to analyze disturbances in organizations: the case of solid waste management within a university hospital. *International Journal of Learning and Change, 10*(4), 300-324.

Cenci, A., Bôas, D. F. V., & Damiani, M. F. (2016). The challenge of inclusive education in a Brazilian School: teachers' concerns regarding inclusion. *Research, Society and Development, 2*(2), 94-106.

Donatelli, S., Vilela, R. A. D. G., Querol, M. A. P., & Gemma, S. F. B. (2020). Collective development of a flow of care for children and teenagers exposed to work: using the double stimulation method. Interface-Comunicação, Saúde, Educação, 24.

Engeström, Y. (2015). *Learning by expanding: An activity-theoretical approach to developmental research.* 2nd edition. Cambridge University.

Engeström, Y. (2016). *Studies in expansive learning: Learning what is not yet there*. Cambridge University.

Engeström, Y. (2020). Ascending from the abstract to the concrete as a principle of expansive learning. *Psychological Science and Education*, *25*(5), 31-43.

Engeström, Y., & Sannino, A. (2021). From mediated actions to heterogenous coalitions: Four generations of activity-theoretical studies of work and learning. *Mind, Culture, & Activity*, *28*(1), 4-23.
Engeström, Y., Rantavuori, J., & Kerosuo, H. (2013). Expansive learning in a library: Actions, cycles and deviations from instructional intentions. *Vocations and Learning, 6*, 81–106.
Engeström, Y., Sannino, A., & Virkkunen, J. (2014). On the methodological demands of formative interventions. *Mind, Culture, and Activity*, *21*(2), 118-128.
Engeström, Y., Virkkunen, J., Helle, M., Pihlaja, J., & Poikela, R. (1996). The Change Laboratory as a tool for transforming work. *Lifelong learning in Europe*, *1*(2), 10-17.
Francisco Junior, O. A. Laboratório de mudanças e desenvolvimento: estudo sobre uma intervenção na Associação Morretes Agroflorestal Ecológica-AMAE. Master dissertation, UFPR.
Freire, P. (2000). *Pedagogy of the oppressed*. Continuum.
Gutiérrez, K. D., Engeström, Y., & Sannino, A. (2016). Expanding educational research and interventionist methodologies. *Cognition and Instruction, 34*(3), 275-284.
Ladson-Billings, G., & Tate, W. F. (2006). *Education research in the public interest.* Teachers College.
Lopes, M. G. R., de Gouveia Vilela, R. A., de Almeida, I. M., Zuccolotto, S., & Vezzá, F. M. G. (2020). Is it possible to run a Change Laboratory if the company does not recognize its demand as legitimate? In Collaborative development for the prevention of occupational accidents and diseases (pp. 51-63). Springer.
Lopes, M. G. R., Vilela, R. A. D. G., & Querol, M. A. P. (2018). Anomalies and contradictions in an airport construction project: a historical analysis based on Cultural-Historical Activity Theory. *Cadernos de saude publica*, 34.
Masiero, C. P. (2018). Demanda x capacidade instalada: contribuições do LM no enfrentamento da crise na hemodiálise de um hospital público. Master Dissertation, UNESP.
Morgado, L. P. (2018). Violência aprisionada: contradições e desafios na atividade de reintegração de adolescentes em conflito com a lei (Doctoral dissertation, Universidade de São Paulo).
Morgado, L. P., de Gouveia Vilela, R. A., Takahashi, M. A. C., Querol, M. A. P., Neto, S. B., & Cavalcante, S. R. (2020). One Activity, two objects: Preparatory phase of Change Laboratory at an assistance center for adolescents in conflict with the law. In Collaborative development for the prevention of occupational accidents and diseases (pp. 65-81). Springer.
Morris, C., Reid, A. M., Ledger, A., & Teodorczuk, A. (2021). Expansive learning in medical education: Putting Change Laboratory to work. *Medical Teacher*, *43*(1), 38-43.
Morselli, D., & Sannino, A. (2021). Testing the model of double stimulation in a Change Laboratory. *Teaching and Teacher Education*, *97*.
Penuel, W. R. (2014). Emerging forms of formative intervention research in education. *Mind, Culture, and Activity, 21*(2), 97–117.
Sannino, A. (2015). The emergence of transformative agency and double stimulation: Activity-based studies in the Vygotskian tradition. *Learning, Culture and Social Interaction, 4*, 1-3.
Sannino, A. (2020a). Enacting the utopia of eradicating homelessness: Toward a new generation of activity-theoretical studies of learning. *Studies in Continuing Education*, *42*(2), 163-179.
Sannino, A. (2020b). Transformative agency as warping: How collectives accomplish change amidst uncertainty. *Pedagogy, Culture & Society*, 1-25.
Sannino, A., & Engeström, Y. (2017). Co-generation of societally impactful knowledge in Change Laboratories. *Management Learning*, *48*(1), 80-96.
Sannino, A., Engeström, Y., & Lemos, M. (2016). Formative interventions for expansive learning and transformative agency. *Journal of the Learning Sciences*, *25*(4), 599-633.
Silva-Macaia, A. A., Querol, M. A. P., Fischer, F. M., & de Gouveia Vilela, R. A. (2020). Conflict in a Formative Intervention at a Public School: Lessons for Researcher-Interventionists. In Collaborative Development for the Prevention of Occupational Accidents and Diseases (pp. 83-97). Springer, Cham.
Smith, L. T. (2021). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books.
Vilela, R. A. D. G., Jackson Filho, J. M., Querol, M. A. P., Gemma, S. F. B., Takahashi, M. A. C., Gomes, M. H. P., ... & Almeida, I. M. D. (2018). Expansion of the object of surveillance for occupational accidents: history and challenges underwent by a reference center aiming at prevention. *Ciencia & saude coletiva, 23*, 3055-3066.
Vilela, R. A., Querol, M. A. P., Hurtado, S. L. B., de Oliveira Cerveny, G. C., & Lopes, M. G. R. (2020). Collaborative Development for the Prevention of Occupational Accidents and Diseases. Springer.
Virkkunen, J. & Newnham, D. S. (2013). *The change laboratory: A tool for collaborative development of work and education*. Sense.

Virkkunen, J., Mäkinen, E., & Lintula, L. (2010). From diagnosis to clients: Constructing the object of collaborative development between physiotherapy educators and workplaces. In H. Daniels, A. Edwards, Y. Engeström, T. Gallagher, & S. Ludvigsen (Eds.), *Activity theory in practice: promoting learning across boundaries and agencies* (pp. 9-24). Routledge.

Vygotsky, L. S. (1978). *Mind in society.* Harvard University Press.

Yamazumi, K. (2020). An interview with Annalisa Sannino and Yrjö Engeström on fourth generation activity theory. *Actio: An International Journal of Human Activity Theory*, 4, 1－16

 © ISLS