



The Laboratory as Pedagogy for Social Change: Innovation for Research and Education

Ana Isabel Zermeño-Flores, María Rebeca Padilla de la Torre, Thomas Tufte & Christian Labbé

To cite this article: Ana Isabel Zermeño-Flores, María Rebeca Padilla de la Torre, Thomas Tufte & Christian Labbé (2024) The Laboratory as Pedagogy for Social Change: Innovation for Research and Education, *Communicatio*, 50:4, 90-111, DOI: [10.1080/02500167.2025.2487453](https://doi.org/10.1080/02500167.2025.2487453)

To link to this article: <https://doi.org/10.1080/02500167.2025.2487453>



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Published online: 13 May 2025.



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The Laboratory as Pedagogy for Social Change: Innovation for Research and Education

Ana Isabel Zermeño-Flores

<https://orcid.org/0000-0001-7371-8767>

University of Colima, Mexico

anaz@ucol.mx

María Rebeca Padilla de la Torre

<https://orcid.org/0000-0002-5881-3958>

Autonomous University of

Aguascalientes, Mexico

rebeca.padilla@edu.uaa.mx

Thomas Tufte

<https://orcid.org/0000-0003-3253-8481>

Loughborough University London,

United Kingdom and School of

Communication, University of

Johannesburg, South Africa

t.tufte@lboro.ac.uk

Christian Labbé

<https://orcid.org/0000-0003-4475-1693>

Institute of Educational Informatics

University of The Frontera, Chile

christian.labbe@gmail.com

Abstract

This article develops an original pedagogical model, a Lab(oratory) for training and scientific practice in the field of Communication for Social Change. The proposal arises from the practical experiences achieved through the collaborative work of the Kaleidoscope Network, which is an international epistemic and practical community for the study of digital culture and human development. The case studies used by the Kaleidoscope Network are derived from over two decades of experience in Mexico. Despite their regional origin, the Lab proposal asserts its international significance, particularly within the realm of training and practice in social science in the Global South. First, the article offers a description of and reflection on the context of colonial hegemony, inequality and resource scarcity in public universities in the Global South. Second, the theoretical framework and central principles of the model are developed. Subsequently, through a literature review and analysis, the conceptual design of the proposal is built. Finally, the laboratory's design is presented to readers for reflection, discussion and contribution, which, in summary, proposes a critical–creative pedagogy embedded in science for social transformation that is open, ethical, humane and inclusive.

UNISA  Routledge
Taylor & Francis Group

Communication

www.tandfonline.com/rcsa

Volume 50 | Number 4 | 2024 | pp. 90–111

<https://doi.org/10.1080/02500167.2025.2487453>

ISSN 1753-5379 (Online), ISSN 0250-0167 (Print)

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Keywords: decolonial pedagogy; social change; Communication for Social Change; ICT for development; communities of practice; transforming research training

Introduction

In a mediatised world saturated by information and communication technologies (ICTs) in our everyday lives, why is it important to address the training and research capabilities of social scientists? What would be a successful training and research strategy to propose to students in the context of a colonialist notion of the university, and how can the decolonial perspectives and epistemologies from the Global South serve as a relevant framing? In practical terms, how can the proposed training be implemented in contexts marked by severe inequalities and financial constraints so prevalent within public higher education in the Global South?

This article draws on the practical experiences acquired within the Kaleidoscope Network (KN).¹ KN conducts research in digital culture and human development. The Lab proposal elaborated on in this article is based on the assumption that there exists an urgent need within public universities in the Global South to foster the development of new approaches to learning that include promoting social empathy, critical vision and transformative hope along with the strengthening of capacities for its practical implementation. As we shall see, the Lab proposal is informed by a strategic concern to promote creative and collaborative solutions to understand and address contemporary social challenges. KN, which all authors of this article are members of, draws on over two decades of experience in undergraduate and graduate student training, as well as in basic, applied and community intervention research. The KN work is situated in the intersection between the fields of media and communication studies on the one hand, and development studies on the other: Communication for Social Change (C4SC), Information and Communication Technologies for Development (ICT4D), digital culture and human development.

This article draws upon the perspective of C4SC, which encompasses ICT4D, a tradition that has been developed in Latin America for over 60 years (Barranquero and Ángel 2015; Gumucio-Dagron and Tufte 2008). This tradition is a response to social struggles, colonialist inertia and regional inequalities (Gumucio-Dagron 2012). According to this standpoint, the root causes of inequalities are deeply embedded within structures, which emphasises collective transformation over individual change and stresses the need for social involvement. The perspective understands that change is activated through horizontal dialogue, critical reflection and constructive hope, thus striving to collaborate *with* communities—not *for* them—by means of liberating/emancipatory education and dialogical/alternative/participatory communication. In addition, it emphasises the integration of theory and practice.

1 <https://portal.ucol.mx/cuis-redcaleidoscopio/>

From this viewpoint, scientific production and training must be in line with specific stances: ethical considerations centred on justice and the appreciation of human and cultural diversity; advocacy for policy promoting participatory processes and universal knowledge accessibility; an epistemic approach that welcomes interdisciplinarity, criticism and transformative optimism; and a pedagogical method that employs creative and reflective strategies. This framework would help to shape researchers who are committed and prepared to build other worlds.

In this article, we propose the foundation of an innovative laboratory model for the purpose of generating contextually relevant knowledge and solutions that serve as a pedagogical tool to foster the development of early scientific vocations and capabilities in undergraduate students, as well as to enhance research skills in graduate students. On a more specific level, this proposal is grounded in the critical–creative pedagogical approach (Schwittay 2021; 2023), the epistemological and theoretical principles of epistemic and practice communities (Feldman et al. 2013; Wenger et al. 2002) and the resources, experiences and insights generated within KN.

This work is relevant because, although it is directed at the Mexican context, it has the potential to inspire others facing similar educational and socio-economic challenges, particularly in the Global South. In this sense, it may be of interest to scholars, educators and educational policy designers who genuinely care about strengthening scientific education.

The process we follow to present this proposal consists of five phases. First, we discuss the relevance and contradictions of training change agents within universities; we also problematise higher education in Mexico as the institutional context in which the Lab could be implemented. Second, we construct a theoretical framework in which we integrate the critical–creative pedagogical approach as a means to building knowledge and human-communicative relationships for transformation, understood as critical-political knowledge informed by decolonial perspectives and Global South epistemologies. In addition, we address the perspective of epistemic and practice communities that foster the collaborative construction of specific knowledge.

Third, we conduct a thorough review of academic literature to identify theories, models, approaches and methodologies used in the field, as well as the results and experiences of similar projects, along with cases of other laboratories aligned with our goals that focus on training social scientists. Fourth, we systematise the experience of KN as an epistemic community and a community of practice. This involves reviewing the foundational ideas that nourish the community and the co-implemented projects that have enriched the network. We gather documents and records from our projects and analyse other materials that provide insights into the accumulated collective experience. Finally, based on all the above, we develop the conceptual design of the proposal. We integrate initial features and principles guiding the laboratory's design, which are open to reflection, discussion and contributions from other participants.

With this proposal, we make a significant contribution to the education of researchers committed to knowledge generation and social change.

Challenges in Adopting a Decolonial Perspective for Scientific Education

One of the big challenges of our time in the field of education and knowledge production is emerging from the external pressures that are transforming the university from a public good to a private good (Philip Altbach in De Sousa Santos et al. 2022). This is a development embedded in the dynamics of the neoliberal economic context in which we live, and where the societal dynamics increasingly are pushing our educational institutions away from a strong commitment to the historical project of humanity and rather towards the closing of the mind, to serve the private good (De Sousa Santos et al. 2022). These pressures upon universities have further stimulated them towards instrumentality in their form of teaching and learning (De Sousa Santos et al. 2022). The prevalent pedagogies are increasingly risk averse, closing down on creative and problem-based learning, and critical thinking and reflection are becoming increasingly difficult to cultivate.

Parallel to this development we see a decolonial turn—critiquing the politics of knowledge of the modern university (De Sousa Santos et al. 2022; Kaplún 2005). De Sousa Santos et al. discuss the epistemological challenges of Eurocentrism and the lack of institutional space and support to ensure the epistemological freedom that allows for broad, open and democratic knowledge production.

In reflecting upon decolonial perspectives on knowledge production and the associated pedagogies, Catherine Walsh argues for the need to critically explore the cracks in Western Christian civilization and, paraphrasing both Aime Cesaire and Frantz Fanon, she argues for these cracks being “spaces, places, and possibilities of and for decolonization” (Mignolo and Walsh 2018, 82). Walsh is inspired by Paulo Freire and worked with him when he spent time in exile in the United States.

A key question Walsh poses is “How do we, and can we, move within the cracks, open cracks, and extend the fissures?” How can we shift our gaze to see from and through the cracks? (...) How can we remain vigilant that the cracks do not close or that the dominant order does not simply patch them over?” (2018, 83). This is where pedagogy becomes relevant to consider, a pedagogy constituted in Freirean praxis. Walsh does so, and she frames her pedagogical approach within a rising decolonial pedagogical praxis.

Challenges for Scientific Education in Mexico

The case of public universities and research centres in Mexico clearly illustrates the global trend of promoting education and knowledge generation with limited critical scope and capacity for social change. Hence, our proposal emerges from the analysis of

the challenges in scientific education in Mexico that share similarities with other regions in the Global South. In Mexico, public universities and research centres play a key role in training researchers, conducting scientific research, developing technology and innovation, and participating in knowledge dissemination and transfer (Vargas-Merino 2021). However, despite their strategic importance, they face historical challenges in fulfilling this mission. Vargas-Merino (2021) highlights three challenges: the uncertainty in budget allocation driven by the political manoeuvres occurring every six years depending on the party in power, administrative centralisation that favours universities in Mexico City while neglecting those in the provinces, and the crisis of legitimacy faced by public universities and threats to their autonomy stemming from corruption scandals in some of the country's universities.

Furthermore, there is the precariousness of funding for higher education, as well as for science and technology. According to Rodríguez-Gómez (2023, 17), “the federal budgets for 2020, 2021, 2022, and 2023 did not include the fund mandated by the constitution and general law,” which has led to the discontinuation of extraordinary funds that institutions used to improve their infrastructure, support academic bodies and, among other things, strengthen research. To make matters worse, “Mexico’s standardized indicator for research and development expenditure (GIDE) barely reaches 0.3% of the gross domestic product, a level lower than the Latin American average (0.7%) and far from the average of OECD-affiliated countries, which is close to three percent” (Rodríguez-Gómez 2023, 17).

Conversely, as indicated by Ortiz (2010), public universities in Mexico generally have rigid vertical structures that expand bureaucracy. This has led to a disconnection between research and teaching, prioritising the training of professionals over knowledge producers and favouring reductionist empiricism over epistemological reflection. These conditions have fostered a precarious scientific culture, which could be partly explained because “in Latin America, and particularly in Mexico, the transformation of universities toward the development of research and knowledge transfer capabilities started late” (Arechavala and Sánchez cited in Vargas-Merino 2021, 174).

Furthermore, the Organisation for Economic Co-operation and Development (OECD 2019) points out that one of the challenges facing higher education in Mexico is the persistent narrow conception of teaching, which equates the educational experience with hours spent in front of a class, rooted in lectures conducted within classrooms. It emphasises the need for innovative, more interactive methods that engage students creatively and effectively.

Critical–Creative Pedagogical Approach

It is on the basis of the above insights that we contemplate and identify our pedagogical aspirations. For this purpose, we suggest the critical–creative framework of Anke Schwittay (2021; 2023). Schwittay has developed her critical–creative pedagogical

proposal by drawing on her university experiences. It offers us a relevant pedagogical approach to inform our conceptualisation of the laboratory.

Schwittay (2023) developed the critical–creative conceptual framework based on her work with university students of international development in the United Kingdom (UK). Her framework is a response to the challenges often encountered by students within neoliberal educational institutions. Schwittay often encountered students with visions and aspirations when entering university, but losing these and becoming disillusioned in their process of learning. It was therefore of fundamental importance for her to develop a transformative pedagogy whereby the students could not only better understand the global challenges they faced but also imagine alternative responses to them. Teaching what she calls “critical hope” is at the core of her pedagogical proposal, and she outlines four interconnected pathways in critical–creative pedagogy.

Whole-person learning is the first strand, which argues for the inclusion of student experiences in the educational process. Thus, drawing on John Dewey, Schwittay argues for the inclusion of both body and mind in the learning process. In practice, for example, she asked students on her course Urban Futures to bring their personal experiences of living in Brighton, UK, where the university is located, into the classroom and then work with their diaries, emotions and critical reflections to discuss rights to the city and urban citizenship.

The second pathway, that of Creative Methods, draws among other methods on Augusto Boal’s methods and theories around theatre. The key point here is to bring in art practices into transformative education, something that, with Boal’s Forum Theatre method, is a very participatory and inclusive practice. Linked closely is the third pathway, that of the Praxis Orientation, a core concept in Freire’s liberatory pedagogy. Again, the process of working with praxis is embedded in Schwittay’s teaching, asking students to develop activism campaigns for causes of their choice based on workshops where they acquire relevant theoretical and practical knowledge to develop such campaigns.

Finally, the fourth pathway is that of Critical Hope. This proposal aims to avoid unrealistic optimism and is equally grounded in Freire’s notion of radical hope. As Schwittay (2023, 12) states: “This is hope that is reparative in addressing past injustices, active in materially engaging with contemporary challenges and future-oriented in seeking transformative action.”

This critical–creative pedagogy needs a generative Theorising that allows the pedagogies of possibility to grow. In the following, we develop this Theorising in more detail, subsequently presenting the Mexican case study upon which our proposal and principles for a Lab is based.

Spaces for Research and Distributed Knowledge Formation

Laboratories are traditionally assumed to be spaces for research in the natural and technological sciences. However, it is possible and desirable to adopt them in other fields of science (Feldman et al. 2013). This means understanding that the laboratory is more than just a specialised and equipped place for doing science; it is a distributed and continuously evolving cognitive system (Nersessian et al. 2003). We also see it as a space from which to promote creativity, critical reflection and active participation of participants to contribute to the understanding of and action on complex social issues (Schwittay 2023).

Therefore, work in the laboratory promotes ongoing innovation, learning, knowledge generation, development and change among its members, whether they are conducting research, providing technical assistance or students. Nersessian and her colleagues (2003) warn that the laboratory is a space not only for research but also for learning; furthermore, it is a “problematic space” because it involves social relationships and ethical questions. This understanding aligns with the reflexivity emphasised by Mignolo and Walsh (2018), who examine how we create gaps and fissures in knowledge. Her decolonial pedagogical proposal seeks to promote reflection on our own awareness of gaps and our participation in their formation. In this sense, the author advocates the production of knowledge in the plural, which potentially aligns with the distributed and interdisciplinary cognitive system proposed by Nersessian and her team (2003).

Laboratories are communities of practice. Wenger and his colleagues (2002) explain that the concept has its origins in the business realm and has permeated other fields such as academia. These authors state that “Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic and deepen their knowledge and experience in this area by interacting continually” (2002, 4). They are organised, ritualised, stable forms with more or less defined members who find value in their interactions because it allows them to become better in their practice.

Communities of practice have various interpretations; however, Flórez et al. (2021), in their literature review, confirm that these constitute possibilities to support the education system in general and, particularly, in the field of higher education. They value them as “cross-cutting platforms of knowledge” because they promote interaction and collaboration between experts and novices, as well as experimentation (trial and error), group counselling, reflection and interdisciplinary dialogue, among other things. They (Flórez et al. 2021, 7) consider them an opportunity to innovate in human resource development and knowledge generation:

... this type of social structure could “evolve into a community of research and practice as more and more professionals and researchers engage with the community, the influence it exerts will transform into its continuous growth (Cheek et al., 2009, p. 237).”

Although each community of practice has its peculiarities, Wenger and his colleagues (2002) point out that they share a common basic structure of three components: (a) a *domain* of shared knowledge, which is the object, topic or problem of interest, (b) a *community* or group of people interested in that domain, who interact, discuss, support, trust and respect one another, and (c) a *practice*, which constitutes the actions related to the domain itself, including the knowledge frameworks and resources involved in the exercise. It involves a repertoire of experiences, ideas, attitudes, skills, tools, styles, languages and visions of what the problems of interest are and how to address them.

According to Feldman and his colleagues (2013), *research groups* share the characteristics of communities of practice. They agree with Nersessian and his team (2003) that both, as well as laboratories, are *complex cognitive–cultural systems*. But, above all, research groups are epistemic communities because their members are competent and experienced in a domain of science. Feldman and his fellow researchers (2013, 227) identify three characteristics that epistemic communities and research groups share:

First, members of research groups agree on what the central problems of their domain are. Second, they share beliefs about what makes responses to those problems valid. Third, they share normative and principled beliefs that provide a value-based rationale for their actions (Haas, 1992). This third characteristic is evident in scientists' desire to create new knowledge in their field.

Furthermore, these authors argue that these groups are essentially defined by the leader and the field of study, with participants that include scholarship students, postdoctoral researchers and technical staff. These authors specify that while not all members necessarily need to participate in the same projects, they do need to share the field of study. A key characteristic of these groups, according to these authors, is their type of organisation. They identify that in *strongly organised groups*, students and postdocs work together in the laboratory—a space that serves as the centre of the action. They meet regularly to share and analyse the progress of each project, pooling their knowledge, discussing readings and providing advice. In addition, they exchange knowledge and experiences in informal discussions and engage in social activities that enhance camaraderie. In contrast, in *less organised groups*—with a looser organisation—students' involvement in projects and mentoring is more individualised. They assert that the groups of the first type achieve better results in training generations for research practice. The significant value of dialogical communication is evident as a key element in research and training groups, which aligns with the logic proposed by both Freire (1973) and Gumucio-Dragon (2012).

In line with Nersessian and her team (2003), who conclude that laboratories are communities focused on innovation and that through their daily practices they promote the development of participants, both individually and collectively, we adopt the laboratory format to integrate a strongly organised epistemic and practice community (Feldman et al. 2013). This is aligned with critical–creative pedagogy (Schwittay 2023).

Relevant Teaching and Learning Strategies—A State of the Art Review

In order to position our experience with KN in a state-of-the-art field, we conducted a thorough analysis of relevant scientific literature. We used the Web of Science (WoS) database and performed a bibliometric analysis with the software VOSviewer, accessible free of charge for academic and research purposes. This process resulted in a scientific map that details the experiences, practices, innovations and recommendations related to teaching and learning strategies in the field of Communication for Social Change in the university setting, both in learning communities and laboratories.

Our search criteria were focused on areas of innovation in scientific practice education and teaching–learning practices. We limited the time range from 2019 to 2023, and we concentrated on original articles, early access papers, book chapters and reviews. Furthermore, we restricted our search to the knowledge areas available in the WoS database, including Education and Educational Research, Multidisciplinary Sciences, Interdisciplinary Social Sciences, Scientific Disciplines of Education, Sociology, Development Studies, Communication, Political Science, Social Issues, Ethics, Women’s Studies and Philosophy.

The study corpus encompassed 226 texts, allowing us to generate a scientific mapping that revealed the thematic and intellectual structure of research in this field. We focused our analysis on the co-occurrence of keywords (see Figure A). It is important to highlight that scientific mapping involves identifying the main research topics and recurring themes in the literature through the analysis of keyword co-occurrence.

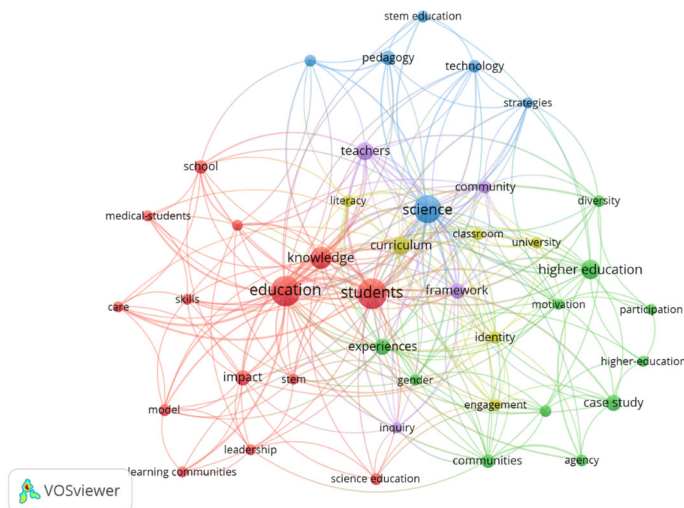


Figure A: Keyword co-occurrence

Source: Self-generated through analysis with VOSviewer to identify the co-occurrence among 1177 keywords from 226 texts obtained from WoS.

The bibliometric analysis helped to identify significant patterns in five keyword clusters, 41 of which reached the specified co-occurrence threshold, as shown in Table 1.

Table 1: Keyword co-occurrence clusters

Clusters	Interpretation
Cluster 1 (14 items): care, education, impact, knowledge, leadership, learning communities, medical-students, model, professional learning community, school, science education, skills, STEAM, students.	It shows a close relationship between education and development, along with the importance of leadership and community learning in the process. It also highlights the relevance of skills and knowledge in science, technology, engineering, art and mathematics (STEM) for the education of students in this field.
Cluster 2 (11 items): agency, case study, community, community of practice, diversity, experiences, gender, higher education, , participation.	It highlights the importance of experiences and diversity in the training of students in the laboratory, as well as the relevance of motivation and active community participation.
Cluster 3 (6 items): pedagogy, professional development, science, STEM education, strategies, technology.	It indicates the importance of strategies and technology in the training of students, especially in the field of science and technology education.
Cluster 4 (6 items): classroom, curriculum, engagement, identity, literacy, university.	It presents the relevance of identity and literacy in the educational process, along with the importance of the curriculum and active student participation in the classroom.
Cluster 5 (4 items): community, framework, inquiry, teachers.	It emphasises the significance of the conceptual framework and research in student education, as well as the key role of teachers in the educational process.

Source: Self-generated through analysis with VOSviewer to identify the co-occurrence among 1177 keywords from 226 texts obtained from Web of Science.

The results highlight the importance of considering various factors for the development of laboratories in Communication for Social Change. These factors include the relationship between education and development, leadership, community learning, motivation, active student and community participation, as well as the relevance of strategies, technology, understanding of conceptual frameworks and research skills related to Communication for Social Change. The results underscore the fundamental role of teachers or mentors in the formation.

Review of Similar Laboratory Cases and Identification of Best Practices

According to King's statement (2014), social scientists have transitioned from working individually in their offices to collaborating in larger, interdisciplinary research teams,

in a format similar to that of a laboratory. The search for cases related to the establishment of laboratories or communities for research and the training of researchers in the field of social sciences has confirmed that these initiatives represent successful alternatives in various universities. These instances may arise as a result of public policies implemented by the universities themselves, proposals generated by groups of academics or specific research projects.

Without aiming to be exhaustive, after reviewing 14 cases in different countries (Colombia, Ecuador, Mexico, UK and US), we selected five experiences that provided valuable insights to enrich our laboratory proposal (see Table 2). Through an inductive exercise, we identified 12 desirable characteristics that we grouped into three practical categories and we related them to the vision of critical–creative pedagogy and epistemic and practice community vision. Although these visions are not explicitly presented in the analysed cases, we consider it necessary to do so to demonstrate the direction of our proposal.

Orientation

1. **Training for research and peer updating.** The work is integrated, to a greater or lesser extent, into the objectives, pedagogical models and mentoring of undergraduate and postgraduate educational programmes. This implies promoting a collaborative learning environment in which participants become co-researchers and co-trainers, fostering the collective construction of knowledge.
2. **Non-disciplinary approach.** This corresponds to the search and innovation to transcend disciplinary and fragmented thinking. It proposes the construction of knowledge and objects of study from a broader perspective, leading us to value interdisciplinarity for addressing problems from multiple perspectives.
3. **Impact on society.** This involves directing studies towards results with positive and tangible impacts on society, addressing relevant issues and generating practical solutions. It also involves influencing public policies and contributing to informed decision making based on evidence.
4. **Transcending intra-institutionality.** This entails bringing together human, technical and material resources from various institutions to overcome inertia and distrust within departments and university centres. This is achieved by promoting interdisciplinary collaboration and creating spaces that go beyond the usual boundaries of the university and a single institution. From a decolonial perspective, it involves embracing a plurality of voices and perspectives in the daily practice of the laboratory.

Work Dynamics and Participants

1. **Learning communities.** This involves promoting the creation of learning communities in which participants can share knowledge, discuss ideas and collaborate on joint projects. It calls for fostering a work environment where collaboration and the exchange of ideas are actively valued and supported.
2. **Diversity of participants.** This implies the integration of individuals from diverse disciplines and backgrounds, including professors, undergraduate and postgraduate students, visiting researchers, fellows and postdoctoral researchers. In alignment with the decolonial approach of critical-creative pedagogy, we recognise and value the diversity of voices and knowledge by including intergenerational and interdisciplinary perspectives and the ability to address issues from multiple angles.
3. **Collaboration with strategic sectors.** This suggests promoting collaboration within and beyond the laboratory, establishing strong connections with other academic institutions, researchers, government entities, businesses, social organisations and, especially, marginalised groups. With this orientation, we aim to enrich the influence and reach of projects, contributing to inclusive, high-impact solutions and aligning with a perspective of social change.
4. **Flexibility for remote work.** This involves adapting to changes in the environment so that laboratory members can collaborate effectively, even when they are not physically present. Flexibility facilitates ongoing interaction, adaptation to student situations, the promotion of collaboration and respect for a multitude of perspectives. This aspect contributes to the collective construction of knowledge and the creation of a learning environment and dialogic communication.

Sustainability and Management

1. **Technical and administrative support.** It is necessary to have a dedicated team to provide the required technical and administrative support for the smooth operation of laboratory activities. This feature would enable participants to focus their critical and creative energy on scientific and educational activities for social change.
2. **Financial sustainability.** Sustainable sources of funding should be sought to ensure the long-term continuity of laboratory operations. This would enable addressing long-term issues related to transformation and social justice.
3. **Open access platforms.** Technology must be leveraged to share research data and results with the academic community and the general public, thereby promoting transparency and the advancement of knowledge. These aspects are

relevant to critical–creative pedagogy and the decolonial perspective as they favour the collective construction of knowledge and open the door to the incorporation of other epistemologies.

4. **Emphasis on data privacy.** The research process must be safeguarded in terms of data compilation, storage and usage to ensure the privacy of participants and research ethics. From a decolonial perspective, this implies compliance with ethical and legal regulations, as well as respect for the practices and cultural values of the communities with which you work. This includes informed consent, respect for data protection traditions of such communities and empowering them to control their own data and privacy decisions.

Table 2: Global exploration of social researcher training communities

Laboratory	Main objective	Pedagogical approach and participants
Laboratory of Applied Social Research (LISA), Institute of Government Sciences and Strategic Development (ICGDE), Benemérita Autonomous University of Puebla (BUAP), Mexico. Duration: 2011 to the present.	To create meaningful knowledge; to train highly competent professionals; and transfer knowledge on democratic integrity, participatory governance and sustainable development to address various needs and challenges at the national, regional and local levels.	Observation inquiry, training enablement, projection cooperation, foresight simulation, planning strategy model. Participants: researchers, graduate students, collaboration with various levels of government, public institutions, political organisations and civil collectives.
Social Justice in Motion Research Laboratory (LIS Justice in Motion), Ibero-American University (Mexico). Duration: 2013 to present.	Conduct critical research to understand sociocultural phenomena, questioning inequalities. Support empowerment actions for an inclusive society.	Transcend academics to generate a civil society organisation that focuses on action research for marginalised and/or discriminated groups. Promotion of public policies and human rights. Participants: academics and students from various areas of Social Sciences, social organisations and volunteers.
Research Seedbeds (SI) Javeriana Pontifical University (Colombia). Duration: 2009 to the present.	Strengthen research skills through practice in undergraduate and graduate students, including critical, analytical and argumentative abilities, oral and written communication skills, and project management.	Learning community for research through practice and interdisciplinary collaboration. Participants: undergraduate and graduate students, teaching and research staff from the university, as well

Laboratory	Main objective	Pedagogical approach and participants
Institute for Quantitative Social Science (IQSS), Harvard University (USA) Duration: 2005 to the present.	To build a community that allows research at a high speed, scale and level of collaboration to advance statistical methods and technologies for a comprehensive understanding and addressing of social issues.	as graduates and external individuals. Learning communities. Adaptation to remote work (post-pandemic). Participants: academic staff, students and visitors, as well as administrative and specialised IT personnel who collaborate with industry and governments.
Female Researchers in Education, Networking, and Dialogue (FRiENDs), Oregon State University, University of Alberta, University of Idaho, University of Montana (USA). Duration: 2009 to 2013.	Create an academic space for discussion and collaboration to define research problems, analyse data and write documents.	Collaborative mentoring. Participants: researchers from various faculties and universities.

Source: Self-generated.

As can be seen in Table 2, the selected cases provide experiences that enrich our proposal and align with critical–creative pedagogy, such as Whole-person Learning and Praxis Orientation (especially LIS Justice in Motion), as well as engagement with relevant social issues which is evident across all five cases. However, not identified are other key aspects, such as the use of Creative Methods and Critical Hope, which we consider fundamental for our Lab in fostering awareness and sensitivity, developing investigative capacities from the perspective of C4SC, promoting creativity in designing change strategies and maintaining reflexivity throughout the process to identify epistemic cracks and sustain hope in transformation.

Kaleidoscope Network as an Epistemic Community and Community of Practice

As suggested by Feldman et al. (2013) and Wenger et al. (2002), epistemic community and community of practice are formed based on a shared interest in a common object, topic or problem. In the case of KN, this common interest is digital culture and human development. The community consists of researchers and members from six Mexican public institutions: University of Colima (UCOL), Autonomous University of Aguascalientes (UAA), Juarez Autonomous University of Tabasco (UJAT), Autonomous University of Baja California (UABC), Autonomous University of Chiapas (UNACH) and Autonomous University of Nuevo Leon (UANL). It also includes one institution from Chile: University of the Frontera (UFRO) and one from

England: Loughborough University London (LOL). Students also participate and, based on their educational journeys, they join and leave periodically. The practice refers to the research activities where each member can engage in participatory discussions and support one another in conducting research aimed at promoting sustainable human development. The foundation of this practice lies in sharing knowledge frameworks and a common repertoire of experiences, both of which shape the focus of this community.

Shared Frameworks of Thought

The KN is primarily composed of two key fields: communication and education. Both have a significant tradition of forming knowledge and practice frameworks to achieve development and social change. In this intersection of knowledge, the thought of Freire (2005) is recognised as one of the early influences that continues to inspire. This author is part of an extensive genealogy of contributions from Latin American critical thought (Zalpa and Padilla 2022) that has been distinguished by seeking its own approaches among Latin American countries in the face of colonial hegemony and severe inequalities within its population. Today, these principles gain relevance in the proposals of decolonial thought, which deconstructs not only the colonial and capitalist structure but also the patriarchal and extractivist one, emphasising the need to generate sustainable knowledge that recognises the dignity of human diversity, living beings and environmental care (De Sousa Santos 2018). Another significant perspective explored in Latin America and discussed here is Communication for Social Change, known in opposition to the dominant paradigm of communication as “the other communication” (Gumucio-Dagron 2012).

The previous knowledge frameworks are recognised by KN as fundamental to guiding its own research and social impact practices. They represent the legacy of regional thought, emerging from its contexts, issues and needs. In addition, KN is open to contributions from other perspectives, such as those of Tufte (2015, 2017) on Communication for Social Change in dialogue with various regions of the Global South and the human development approach of Sen (2000). In this case, the field of ICT4D, which has evolved towards interdisciplinarity and the promotion of human development (Walsham 2017), is also acknowledged.

In this regard, KN has created spaces for exchange to build common interests. It outlines three research lines: ICT for development and social change, the study of youth and digital culture, and ICT and education.

Repertoire of Shared Experiences

Primarily, five previous experiences allowed for envisioning this laboratory (Table 3). Although these initiatives have their particular characteristics (Zermeño 2017; Zermeño-Flores et al. 2020), they share the purpose of enhancing participatory research action skills among undergraduate students from the perspective of Communication for Social Change.

These experiences have primarily taken place at two public universities in the central-western region of Mexico: Colima and Aguascalientes, with the collaboration of Tabasco, a university located in the southeast of the country.

Table 3: Previous projects of the proposal

Experience	Duration	Objective	Participants
<i>Tangled</i> , community technologies (UCOL)	16 replicas (2005–2014)	Research and social advocacy to address digital exclusion.	Network of researchers, undergraduate students, various community groups, NGOs and GOs (government organisations).
Media Lab for active media production (UCOL in dialogue with UAA)	1 replica (2018)	Extracurricular space to develop skills in creating media products based on social projects.	Research group, thematic advisors, technical advisors, undergraduate students, NGOs and GOs.
Social Communication Workshop (UAA in dialogue with UCOL)	5 replicas (2018–2022)	Curricular subject in the form of a workshop to develop C4CS projects.	Faculty researchers, undergraduate students, NGOs and GOs.
Study Circle: Media and Social Agendas on Quality of Life, Youth, and ICT (UCOL and UJAT)	1 replica (2019–2020)	Extracurricular space to enhance research skills.	Female faculty researchers, research assistants and undergraduate students.
Workshop: Communication Management (UCOL)	3 replicas (2020–2022)	Curricular subject to develop skills in C4CS projects and products.	Female faculty researchers, female research assistants, undergraduate students, NGOs and GOs.

Source: Self-generated.

These experiences demonstrate a continued inter-institutional collaboration, from which we extract valuable insights related to critical–creative pedagogy and the community of practice and epistemic approach. They encompass learnings that span participation in a culture of co-creation among participants of diverse types, comprehensive acquisition of scientific and community engagement skills, utilisation of action research and deployment of creative methodologies such as those employed for multimedia resource production. Furthermore, these experiences underscore the orientation towards praxis through the development of projects involving social groups to address real problems. Establishing horizons of change involves acknowledging that engaging with young people necessitates a reliance on critical hope to counter disillusionment in the face of

structural difficulties' magnitude and complexity (Schwittay 2023). This approach requires an optimistic and hopeful outlook to catalyse impactful change.

The trajectory of inter-institutional collaboration for a little over 15 years has created the conditions to consider KN as an epistemic community and community of practice. Collaborations within the network have included research, thesis advising for undergraduate and graduate students, collaboration in teaching and publications. We produced a repertoire of theoretical, methodological, logistical, didactic, documentation and dissemination resources in the domain of Communication for Social Change, as well as resources on the specific topics of each member of the network. We shared these resources in our undergraduate and postgraduate research and teaching, thereby influencing the sharing of new visions and strengthening the socio-affective fabric within our network. In addition, we continuously aim to operate as a "strongly organised group" (Feldman 2013), engaging in various academic activities together, thus sustaining our dialogue (seminars, workshops, thesis co-advising), while also meeting regularly, whether in person or virtually, to uphold personal relationships (conferences, stays or informal gatherings), among other activities.

With this common history, it is natural to propose a space that organically connects the research group with students who, while pursuing their respective study programmes, strengthen methodological and intellectual competencies on how to conduct Communication for Social Change science by participating in the daily life of our laboratory.

Conclusions: Sustainable Implementation of the Laboratory

After considering the context of the educational system, critically reviewing the literature and assessing laboratories with purposes similar to ours, we conclude that establishing a Lab to drive research and train researchers within the framework of Communication for Social Change is a pertinent, viable and desirable pedagogical proposition. It offers the space and method to develop competent researchers committed to social transformation in contexts of profound inequality, not only in Mexico but more broadly in the Global South.

Likewise, the reflective analysis of the identity, experience and production of KN has shown consistency in considering it an epistemic community and community of practice with the capacity to support the Lab as a generic proposition and pedagogical vision. It highlights its longevity as a community of practice and learning for both itself and students from different levels and areas of knowledge, its epistemic relevance in the fields of Communication for Social Change, digital culture and human development, as well as its commitment to pursuing social changes for justice, inclusion and well-being through research, training and social engagement.

Based on our case study, we thus summarise in Figure B the fundamental elements of the Lab that we propose for Global South universities to consider as a means to enhance another pedagogy, another account of learning, one that is committed to engaging with the challenges of our times.



Figure B: Lab(oratory) for training and scientific practice in the field of Communication for Social Change. KN Pedagogical Model

Source: Self-generated.

Based on the evidence emerging from of our experience in Mexico, the Lab can be conceived as a community that produces, promotes and distributes knowledge enriched from multiple perspectives. Like a community that thrives by transcending institutional, hierarchical, merit-based and sociocultural boundaries, it operates not exclusively in a physical space, but also virtually. It is capable of bringing together individuals from diverse disciplines, with varying levels of academic maturity, from different cultural

backgrounds, representing various educational institutions, and even those independent of the university environment, such as government bodies, businesses, civil society organisations and social groups.

As our study evidences, a laboratory from the perspective of critical–creative pedagogy will seek innovative ways to generate new and contextually relevant knowledge. This knowledge should address the interconnected and constantly evolving challenges of a world engulfed in chaos, characterised by deep inequalities and structural injustices, to design comprehensive and practical solutions. In addition, it will adopt an ethical perspective in research, respecting the autonomy and dignity of laboratory members, as well as individuals or communities participating in the projects. All of this will be achieved by valuing and exploring co-creative forms of knowledge.

The work experiences in KN lead us to recommend the Lab as an environment for dialogue among diverse epistemologies, where contradictions are challenged between the vision of the university as a transformative agent and the perpetuation of colonial inertia that presents it as the sole generator of legitimate knowledge. The Lab, we propose, should serve as a tool that consistently questions epistemic biases and forms of domination present in the production and dissemination of scientific knowledge, promoting a more open and diverse view of science.

Moreover, it should respond effectively to uncertainties in funding, health contingencies and natural disasters, as well as to the challenge of physical distance to maintain collaboration and the human aspect of relationships. This involves adopting an orientation towards seeking resources that contribute to sustainability without compromising the independence of voice and knowledge. It also entails leveraging other resources that are potentially applicable to our goals (such as conferences and mobility grants, among other initiatives) and establishing strategic collaborations with entities that share the same values.

The remaining challenges can be addressed through the critical–creative adoption of ICT. This also means establishing itself as a virtual community for project execution to strengthen trust and affections. In other words, it is essential not to forget that community building goes beyond productivity and intellectual pursuits and is nourished by emotional aspects. In this regard, ICT can assist in the laboratory in establishing a sentiment-thinking ethos to promote empathy and efficiency. These technologies can also facilitate research activities, such as remote data collection, cloud-based data management and results dissemination, particularly in the context of open science, among other possibilities.

Ultimately, the laboratory design is an exercise in critical–creative pedagogy by encouraging the questioning of scientific norms and power relationships, challenging conventional academic standards, promoting innovation in education and research, and fostering critical reflection and social transformation within and beyond academia.

Acknowledgements

This work is part of Project A1-S-8412, funded by the SEP-CONAHCYT Sector Fund. The authors express their gratitude for the financial support that enabled the completion of this research; likewise, they extend their appreciation to the colleagues within the Kaleidoscope Network.

Conflict of Interest

The authors declare no competing interests.

References

- Barranquero, Alejandro, and Adriana Ángel. 2015. "La Producción Académica Sobre Comunicación, Desarrollo y Cambio Social. En Las Revistas Científicas de América Latina." *Signo y Pensamiento* 34 (67): 30–58. <https://doi.org/10.11144/Javeriana.syp34-67.pacd>
- Caleidoscopio. *Red de Investigación en Cultura Digital y Desarrollo Humano*. <https://portal.uco.mx/cuis-redcaleidoscopio/conocenos.htm>
- De Sousa Santos, Boaventura. 2018. *Construyendo Las Epistemologías Del Sur. Para Un Pensamiento Alternativo de Las Alternativas*. Fundación Rosa Luxemburgo y CLACSO.
- De Sousa Santos, Boaventura, Sábalo Ndlovu-Gatsheni, and Crain Soudien. 2022. "Critical Reflections on the Place of the University in the 21st Century." *South African Journal of Science* 118 (SPE2): 1–6. <https://doi.org/10.17159/sajs.2022/14835>
- Feldman, Allan, Kent A. Divoll, and Allyson Rogan-Klyve. 2013. "Becoming Researchers: The Participation of Undergraduate and Graduate Students in Scientific Research Groups." *Science Education* 97 (2): 218–43. <https://doi.org/10.1002/sce.21051>
- Flórez, Cardoso, Milton César, and Olga Lucía Fernández Arbeláez. 2021. "Comunidades de práctica como plataformas de mejoramiento educativo." *Sophia* 17 (1): 1–16. <https://doi.org/10.18634/sophiaj.17v.1i.1104>
- Freire, Paulo. 1973. *Extensión o Comunicación?: La Concientización En El Medio Rural*. Montevideo: Siglo XXI.
- Freire, Paulo. 2005. *Pedagogía Del Oprimido*. 2da. Siglo XXI.
- Institute for Quantitative Social Science (IQSS). Harvard University. <https://www.iq.harvard.edu/about>

- Gumucio-Dagron, Alfonso. 2012. "Comunicación y Cambio Social. Raíces Ideológicas y Horizontes Teóricos." In *Comunicación y Desarrollo. Prácticas Comunicativas y Empoderamiento Local*, edited by Marcelo Martínez Hermida and Francisco Sierra, 25–55. Gedisa.
- Gumucio-Dagron, Alfonso, and Thomas Tufte. 2008. *Antología de La Comunicación. Para El Cambio Social: Lecturas Históricas y Contemporáneas*. La Paz, Bolivia: Consorcio de Comunicación para el Cambio Social, Inc.
<https://doi.org/10.26439/contratexto2008.n016.783>
- Kaplún, Gabriel. 2005. "Indisciplinar La Universidad." In *Pensamiento Crítico y Matriz (de) Colonial: Reflexiones Latinoamericana*, edited by C. Walsh. Ecuador: Universidad Andina Simón Bolívar/Abya-Yala.
- King, Gary. 2014. "Restructuring the Social Sciences: Reflections from Harvard's Institute for Quantitative Social Science." *PS: Political Science and Politics* 47 (01): 165–72.
<https://doi.org/10.1017/S1049096513001534>
- Mignolo, Walter, and Catherine Walsh. 2018. "On Decoloniality. Concepts, Analytics, Praxis." Duke University Press. <https://doi.org/10.1215/9780822371779>
- Nersessian, Nancy J, Elke Kurz-Milcke, Wendy C Newstetter, and Jim Davies. 2003. "Research Laboratories as Evolving Distributed Cognitive Systems." *Proceedings of the Annual Meeting of the Cognitive Science Society* 25 (25): 857–62.
- OECD. 2019. *Higher Education in Mexico: Labour Market Relevance and Outcomes. Higher Education*. Paris: OECD. <https://doi.org/10.1787/9789264309432-en>
- Rodríguez-Gómez, Roberto. 2023. "Educación superior, ciencia y tecnología a la deriva: El caso de México." *Revista de Educación Superior en América Latina*, February.
<https://rcientificas.uninorte.edu.co/index.php/esal/article/view/15468>.
- Schwittay, Anke. 2021. *Creative Universities: Reimagining Education for Global Challenges and Alternative Futures*. Bristol: Bristol University Press.
<https://doi.org/10.1332/policypress/9781529213645.001.0001>
- Schwittay, Anke. 2023. "Teaching Critical Hope with Creative Pedagogies of Possibilities." *Pedagogy, Culture and Society*, March, 1–19.
<https://doi.org/10.1080/14681366.2023.2187439>
- Sen, Amartya. 2000. *Desarrollo y libertad*. Barcelona: Planeta.
- Tufte, Thomas. 2015. *Comunicación Para El Cambio Social. La Participación y El Empoderamiento Como Base Para El Desarrollo Mundial*. Icaria.
- Tufte, Thomas. 2017. *Communication and Social Change. A Citizen Perspective*. Cambridge: Polity Press.

Vargas-Merino, Ana Laura. 2021. "Condiciones Actuales de Las Universidades Públicas En México." *Revista Internacional de Pedagogía e Innovación Educativa* 1 (2): 169–80. <https://doi.org/10.51660/ripie.v1i2.47>

Walsham, Geoff. 2017. "ICT4D Research: Reflections on History and Future Agenda." *Information Technology for Development* 23 (1): 18–41. <https://doi.org/10.1080/02681102.2016.1246406>

Wenger, Etienne, Richard A. McDermott, and William Snyder. 2002. *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Boston, Mass: Harvard Business School Press.

Zalpa, Genaro, and Rebeca Padilla. 2022. "Los Estudios Socioculturales En Aguascalientes." In *La Trama Expuesta. Contextos y Análisis de Objetos Socioculturales*, edited by Salvador De León, 21–61. UAA.

Zermeño, Ana Isabel, ed. 2017. *Inclusión Digital Para La Inclusión Social. Contextos Teóricos, Modelos de Intervención y Experiencias de Inclusión*. México: Universidad de Colima / Colofón.

Zermeño-Flores, Ana Isabel, María Rebeca Padilla-De la Torre, and Amaury Fernández-Reyes. 2020. "Formación de Comunicadores Para El Desarrollo y El Cambio Social. Análisis de Experiencias En El Centro Occidente de México / Training Communicators for Development and Social Change. Analysis of Experiences in Center-West Mexico." *COMMONS* 9 (1): 59–88. <https://doi.org/10.25267/COMMONS.2020.v9.i1.3>