

# Everyday differences in development processes: unveiling significant connections of ICT in educational settings

## Summary

The aim of this paper is to show the way in which everyday life has an impact on local development processes, taking advantage of the availability of ICTs in Northeastern Uruguay, where it has been possible to build Multireferential Learning Environments. In the identification of these everyday life situations, the Cognitive Analysis (AnCo) has contributed to transit smoothly through all the different fields of knowledge, since it constitutes a double cognitive/epistemological field, which focuses on the study of knowledge from its construction, transduction and dissemination processes, considering the understanding of the language, structures and specific processes of different disciplines, with the aim of transforming these specificities into foundations for the construction of bases for inter/transdisciplinary and multi-referential understanding. This field establishes a commitment to the production and socialization of knowledge in a perspective open to dialogue and interaction between these different disciplines and their translation into public knowledge. The hypothesis states that ICTs massively implemented in educational environments contribute to sustainable local development if they are accompanied by changes in the institutions themselves in the ideological, cultural, political, economic and managerial spheres, taking into account cultural values and overcoming resistance to change. In order to meet the stated objectives, research is conducted using a strategy from a qualitative approach developed from various investigations conducted from 2015 to date. From the first investigations in the MEAs to the last ones carried out in the context of pandemic, in 2021, the social and symbolic aspect of the daily lives addressed place information and communication at the center of educational quality by transforming it into knowledge.

**Keywords:** learning, environment, ICT, cognitive analytics

*“It is the masses of truly empowered people, with real economic capacity, influence and political dignity, who can exercise a counterweight on state power. The “big capital” still has greater capacity to guide the vote and collective wills.”*

JARON LAMER “WHO CONTROLS THE FUTURE” 2014

## Introduction

Already in the year 2000, Pantzar recognizes that information has grown exponentially and its distribution is easier with the emergence of ICTs, which can contribute to generate useful knowledge that can help solve problems such as unemployment, slavery, insecurity, social, economic and geographic inequality.<sup>1</sup> However, a question arises: Can ICTs really have an effective impact on sustainable local development, on the improvement of living conditions, on the reduction of poverty, on the reduction of social inequalities in the reality of Abya Yala?<sup>2</sup> What motivates this concern? In 2014, upon completion of the doctoral thesis “Crossroads and Vanishing Lines of Interactivity”, the need to continue deepening the understanding of Multireferential Learning Environments (MLE) was perceived.<sup>3</sup> In “Interactivity as a Complement for Local Development”<sup>3</sup> it is expressed that:

*“To contribute in a certain way to broaden the knowledge on development, it is proposed to think of the phenomenon of*

<sup>1</sup>Designación de América Latina proclamada como nombre propio del continente americano en la reunión del Consejo Mundial de pueblos Indios realizada en Port Albeni, Canadá, 1975.<sup>4</sup> Se utiliza esta designación para introducir al lector en el enfoque intercultural que orienta la investigación.

*interactivity as a complement in the current processes of sustainable local development. As a starting point [...] it is considered that the term development defines the process that enables changes aimed at improving the conditions of human life and the researchers that study them focus on the analysis of the problems of the communities to achieve a sustained transition in this process”.*

The intention is to investigate considering the complexity of the phenomena, observing the multiple interactions and retroactions that do not respond to a linear causality, which requires considering recursive causal relationships.

For the enunciation of the problem, we refer to the text by Jaron Lamer transcribed at the beginning. The concern refers to whether ICTs can contribute to the real empowerment of subjects so that they possess or have greater economic capacity, influence, and political dignity to exercise a real counterweight or opposition to the state power of the day and to big capital. In light of recent political events and considering the Economic Commission for Latin America and the Caribbean (ECLAC) report on the matrix of inequality in Latin America, it is necessary to consider the daily dimension of the actors in the processes of sustainable local development.

**The objective is to identify, describe, and evaluate the derivations of ICT in the Multireferential Learning Environments involved in local development processes from a complex systemic approach where the daily dimension of those involved in the process is contemplated from a cognitive analysis model.**

This can be considered as a “transformative valuation”<sup>5</sup> designed to measure the changes occurring in the different areas of social, economic, and cultural life.

## Frame of reference

### Conceptual contributions on the development

As Amartya Sen expresses in “Development with Freedom”,<sup>6</sup> the origin of economics was significantly motivated by the need to study the opportunities that people have to enjoy a good, quality life and the causal influences of those opportunities. From Aristotle to William Petty in the 17th century, Francois Quesnay and Joseph-Louis Lagrange, these ideas pervaded early writings on economic prosperity and human welfare. However, these thinkers also perceived that people’s fortunes and their satisfaction have an instrumental nature that depends on circumstances. With enthusiasm it is expressed” that the process of human development is irreversible because to the extent that we intend to be protagonists - and not victims of our time, the need for deepening everything around us linked to people and the environment, summons and mobilizes us to research, action, learning and transformation in a never-ending process”.<sup>7</sup> This development is perceived as “an integral, self-sustained, sustainable and dynamic process of the human capacities of all citizens, in a heterogeneous but integrated society, without the excluded, counteracting the development of global capital and restoring the sovereignty of the peoples”.<sup>8</sup>

To understand the processes of development and to be able to speak of it, it is thought best to compare it with movement, with which it is united by remarkable analogies. Development, in fact, is like a movement in which its positive or ascending sense of improving people’s quality of life is taken: and this because development is considered as a “human value”. According to the UNDP Human Development Report (1996): “educated people use capital efficiently, thus becoming more productive”.<sup>9</sup> They are also likely to introduce innovations in the way they devise new and better forms of production”.

Considering people first would seem to be the conception that should prevail, but development cannot be conceived without taking into account the impact on the environment. Therefore, the best option may be to link the generation of capacity to understand and critically transform the environment, taking into account the antecedents and consequences of a diverse, multidimensional, and complex reality.

On the other hand, Sen,<sup>6</sup> by concentrating on the freedom to evaluate development, does not assume that there is a single and precise criterion that allows for an approximate model of this process, and when investigating a complex development problem, it is necessary to know and consider economic, sociological, political, ethical and even pedagogical aspects. In this approach, development is considered as the well-being of individuals everywhere and is schematized with the acronym WISE, which stands for **“The Well-being of Individuals and Societies Everywhere”**. This includes education, property rights, health, financing, or revenue, so it is essential to understand the problems from a systemic viewpoint and find solutions in interdisciplinary work.

On the other hand, the notion of territorial development, associated with the idea of sustainability, was originally linked to the environment and is therefore related to disciplines linked to the Natural Sciences. However, the theoretical contribution of the Anthropo-Social Sciences provides new visions for discussion, emphasizing the peculiarities of human groups, within their insertion in the global society. The area of organizational studies makes important contributions to the understanding of the theoretical and practical aspects of the development model proposed as socially just, economically viable, and sustainable. Organizations are social units that formalize spaces of articulation and it is essential to understand them as linking axes, capable of promoting social transformations at the same time that they are transmuted.

If development is understood as a process of expanding people’s options for planning and realizing their lives in their appropriate way, this process must be conceived as a collective project and the approach is systemic, seeking to understand the complexity of the object process. Thus, individual fulfillment can only be possible in a social context where values and actions are shared and promoted that involve the common good and not competitiveness at all costs. When thinking about collective processes, it is also necessary to think that people have conceptions and interests that sometimes conflict and need to be harmonized to achieve a common goal towards development.

Also, in the implementation of collective development projects, it is necessary to make explicit the ethical position on which the proposal is based since the actors involved in it can only commit themselves if they share ethical foundations. The exercise of freedom is mediated by values that may be affected in each locality or community by public discussions and social interactions that depend on the degrees of freedom of participation, often related to cultural, ideological, or educational values, and these values involve ethical aspects.

## Development and territory

The notion of development applied to the territory leads to the idea of local development and is related to the satisfaction of the needs of the inhabitants of a given territory. Local development can be defined as the process that promotes the integral development of local needs based on its resources and according to its internal dynamics. Decisions made in response to local interests concerning other interests define the development process as local. This then refers to the “content”, to what exists and lives in the territory, the latter being its “continent”.

Vazquez Barquero,<sup>10</sup> distinguishes three dimensions that influence and articulate local development processes:

- I. Economic, led by local entrepreneurs who take advantage of their capabilities to organize local productive factors to be competitive in the markets.
- II. Political-administrative, to create favorable economic environments to promote an attractive context that stimulates the development process.
- III. Socio-cultural. Where values, ethical principles, and the sense of sustainability of the territory are the basis of the process.

Development processes are conditioned by cultural factors such as the spirit of work, the ability to save, and tolerance, as well as by the norms and rules that regulate relations between people and organizations in the territory. Thus, when in a society effort and work ethic are rewarded, entrepreneurial capacity is a recognized social

value, and social mobility is stimulated, the population can respond to challenges in a creative way.<sup>10</sup>

However, it is impossible to speak of local development without considering the context of globalization characterized by the internationalization of the economy, politics, and culture. Arocena,<sup>11</sup> considers that there are three ways of approaching the global-local relationship:

- I. Globalization is perceived as a threat that tends to eliminate local autonomies.
- II. The local is perceived as an alternative to globalization that resigns local actors.
- III. Globalization is seen as an opportunity and a challenge that can enhance local development by proposing differentiated competitiveness strategies. This requires a critical learning process of local actors oriented to the understanding of global and local dynamics, enhancing the degrees of freedom offered by possible structural changes.

The understanding of technological modifications, innovation processes, and the importance of knowledge are fundamental factors in these circumstances. Next, we will explain the approach to everyday life in the development processes

### Approaches to everyday life in the development process

If we go back to the first question raised by Lamer in 2014,<sup>12</sup> stating that “it is the masses of truly empowered people, who can have real economic capacity, influence, and political dignity, who can exercise counterweight in state power,” and associate this situation with the possibilities of development, then it is necessary to approach and conceptualize everyday life in the processes that contribute to it. Thus, it is necessary to address the novelty that permanently arises about those behaviors that are assumed to be obvious and natural.

Aranda and Maffesoli,<sup>13</sup> unlike other sociological orientations of everyday life, develop a conception from comprehensive sociology, where contemporary sociality is established as a “polytheism of values”, in which we “act” by playing roles. In the study of the everyday, he considers that the present has a particular theoretical significance by showing that the social fabric is formed from the constant process of reappropriation of life in the here and now. Attention to the everyday is a recognition that alongside political-ideological aspects there is a space of social cohesion that undoubtedly contributes to the processes of sustainable local development by addressing sociology of the present.

Maffesoli constructs a sociology of the trivial, with a view where intuitions and metaphors contribute to capturing contemporary social manifestations and cultures, showing or highlighting that these phenomena exist. However, his aim is not to explain them nor to account for their efficient causes, so this work tries to rescue precisely the relevance of everyday life in the processes of sustainable local development.

Some aspects of Maffesoli’s vision that we wish to highlight are developed below:

**Resistance, solidarity, reinvention:** The idea underlying the phenomenon of the “silent majority” that resists and seeks new paths based on organic solidarity constituted by the confluence of powers that contribute to a certain neutralization of power is recognized. In the face of unifying totalitarianism, sociality retains its foundation

in the sense of the capacity for cohesion. Through solidarity, control tends to be neutralized and is even capable of promoting alternative forms of development in discrepancy and symbolic form (Maffesoli, 1977: 183-190).

**Being together in the tribe (bubble):** Maffesoli rescues the importance for human beings of “being together” as organic solidarity to point out the erosion of this hegemony. The Imaginary is considered a welcoming space that provides a social identity around symbolic problems, recognizing the saturation of the great explanatory systems and the rebirth of biographies (The World of Tribes, Common Knowledge).

**Social fabric and appropriation:** The relevance of the study of everyday life lies in the fact that life in the present has a particular meaning because it manages to show that in the social fabric and in the subject that concerns us: sustainable local development is achieved from the constant process of reappropriation of life in the here and now.

**Understanding everyday time:** The understanding of everyday time is fundamental in the analysis of processes in the present. Insofar as it deals with the set of daily practices, as opposed to linear and progressive time, the time lived socially and individually is that of routines, repetition, and circularity.<sup>13</sup> What is important is the creativity and astuteness to circumvent the excessive demands of power because they often lack direction or sense guidelines and are generally lived according to rhythms that do not demand coherence or a determined rhythm. The scheme of the everyday is consistent with the myth and the tragic repetition of ritual and circular time. This occurs in the AMA where repetition, the myth of knowledge, and circular time are manifested.

**Importance of the ethical foundation of feelings, emotions, and daily collective experiences:** This characteristic leads directly to the proposition that in today’s sociality, the relationship with nature changes its tone as the commitment to the present predominates. The culture of the values of the moment is manifested. The relationship with the context acquires a broad sense of absolute otherness that enables correspondence with others who are close and in a relationship of symbolic interaction. In this way, the feeling of participation, of sympathy, which is shared with others serves as a support for coexistence and enjoyment. The unique and homogeneous vanishes to give way to the multiple and differentiated. The force of sociality takes another direction, which we intend to show in this paper. For this reason, we will describe below the processes followed by the MLE in the pre-pandemic period in the region mentioned above.

### Methodological framework

This methodological framework attempts to address complex issues by providing avenues of communication and providing a way to store and organize relevant concepts, methods, and experiences.<sup>14</sup>

The framework considers three domains of approach:

- I. The domain of evidence comprising disciplinary knowledge and that of the actors involved in the system, which must be synthesized.
- II. The domain of the unknown that is perceived as unknown requires understanding and management.
- III. Finally, the domain that requires obtaining integrated support for the change of practices and policies that will ultimately make possible the required modification as a result of the research process.

The hypothesis proposes that ICTs massively implemented in educational environments contribute to sustainable local development if they are accompanied by changes in the institutions themselves in the ideological, cultural, political, economic, and managerial spheres, taking into account cultural values and overcoming resistance to change.

## Research methodology

To meet the stated objectives, research is proposed that uses a strategy based on a qualitative approach developed from various practical investigations, specifically research/action/participation. For Barbier,<sup>15</sup> action research is the result of a historical evolution of sociology based on epistemological questioning in the search for social-political efficacy. In this type of research, the research subjects are necessarily involved by the institution in which they work and by the interplay of their own and others' interests and desires. The implication is transferred to them through the singular vision and action with the world in their interaction with others. This is evident in the present research where the researcher feels committed and involved with the use and application of ICT in university education. Carr and Kemmis,<sup>16</sup> argue that action research has three particular characteristics: it constitutes a social practice; a strategic form susceptible to improvement that advances in a spiral form with highly interrelated cycles of planning, action, observation, and reflection where a collaborative control of the process is maintained. Action research is based on collaboration, democratic and consensual decision-making, and emancipation through critical reflection. This critical reflection has been generated in the virtual forums as well as in the face-to-face instances and in the evaluation processes. In short, it is a matter of generating a deliberate action to transform reality and produce knowledge that tends to and promotes these transformations. Next, we will carry out the data analysis referring to the processes analyzed and experienced in the pre-pandemic period: 2015/2019 and pandemic: 2020/2022.

## Pre-pandemia

Making a brief chronological description of the evolution of the MLE in the northeastern region of Uruguay, it is possible to identify a period of constitution and concretion that begins in 2008 and ends in 2015 where work is done in research in educational programming, youth and adult education as well as addressing various problems in schools in vulnerable social contexts, rural schools and Early Childhood Care Centers.<sup>3,17,18</sup> Already in 2015 and 2016, research in computational learning continues to deepen and the work in MLE is stimulated by a Workshop Meeting on the Application of an Interdisciplinary Approach for Development Research, Learning and Innovation System in the Northeast Region.<sup>19</sup> In 2017, an initiative of "Teaching Pedagogical Development with ICT for the Regional University Centers of UdelaR".

A Laboratory for experimentation in teaching with ICT and a workshop on "Transdisciplinary as a catalyst for sustainable local development: the case of Tacuarembó in collaboration with the University of Leuphana, INIA are also implemented. In 2018/2019 the MLE is consolidated in a program addressing Digital Citizenship at CENUR Northeast. It is integrated to the research group of the UESB the Anco-Redes studying the theme: "Análise cognitiva de redes e a teoria do núcleo central: Aproximações teórico-metodológica". At the same time, the theme "Daily life in the development process unveiling meaningful ICT connections in educational settings" is addressed, presenting the topic at the Researchers Meeting CENUR Noreste. In 2019, research based on the notion of a Social Technological System (STS), explores how to generate institutional and inter-

institutional learning processes promoting the training of people as "development agents", as well as identifying innovative practices. The problem is posed in the form of a question: What is the current state of appropriation of the collective of teachers of the University Center of Tacuarembó about the use of ICT in the exercise of their teaching practice and its contribution to institutional and regional development? As a result, it is concluded that ICT deploys agency from an integration that occurs as a result of dynamic interactions of networks of actors and artifacts available for learning, dissemination, and generation of knowledge. In these networks, it is possible to connect elements and build relationships that condition the institutional structure. Especially at the teaching level but also at other levels (student, administrative) these networks actively participate in the development dynamics of the university headquarters. It is verified that innovations and technological change arise in a specific territory (Tacuarembó Campus of the University of the Republic) and are associated with local know-how, the training of human resources (teachers, students, staff) as a knowledge management institution that carries out research and contributes to development, thus constituting a "local innovation system".

## Pandemic

In 2020, the MLE "NoresteOnline" arose after the Central Directive Council of the University of the Republic (UdelaR) resolved that the teaching be organized and sustained on digital platforms during 2020 ensuring the delivery of courses on this basis, to maintain the physical distance measures that the health emergency requires. Given this circumstance, at the new CENUR Noreste, a group of teachers has formed a group - "NoresteOnline", who have decided to collaborate with organizational and methodological support for the courses in remote mode to support the actors with greater difficulties for the development of their work in such circumstances. The objective of the group is to support the teaching staff of the region in the design and redesign of online teaching and learning activities through actions and devices of assistance and advice, promoting the formation of a learning community, and making use of open educational resources. The aim is to organize, design, and manage these resources and propose teaching activities according to the needs identified. It is also a specific objective to present various initiatives to maintain contact with students virtually, especially aimed at those who are entering university for the first time. The aim is to address some aspects that are considered fundamental in the context of the pandemic, in the sense of ensuring the right to higher education for all people in a framework of equal opportunities so as not to leave any student behind, contributing to sustain education as a continuum to preserve the continuity of educational trajectories. As a result, it is confirmed that ICTs exercise agency, not in an autonomous manner, but through their integration into the dynamics of networks of actors and artifacts and their capacity to connect elements and build relationships. ICTs also generate and participate in the resolution of problems, actively contributing to the dynamics provoked by the different instances of MEAs.<sup>20</sup>

In 2021, even in a pandemic context, innovations in academic teaching practices are investigated from a socio-technical approach in the context of the course "Redesigning the Digital University". The objective of the course was to provide university teachers with elements to identify the main transformations in the framework of online learning and teaching in emergency conditions, Covid 19. From this framework, a problematization of the educational principles and teaching practices is proposed, providing inputs to implement processes of redesign of teaching and evaluation in digital environments. The research group integrates a Professional Academic

Learning Community (CAPA) (Czerwonogora, Rodés, 2019) as an environment in which it is possible to record, exchange, and share processes of analysis and redesign in university educational research. This environment for the construction of teaching performance practices is conceived as a space for reflection that allows redefining higher education in the context of recent changes motivated by the implementation of remote teaching in health emergencies. In this research, it has been possible to analyze the CAPA where teachers can reflect on their practices and the meaningful integration of technology as strategies to transform university teaching. From these experiences, we intend to contribute to the incipient corpus of critical studies on digital universities from a socio-technical approach. Starting from educational innovation, we have witnessed, through the words of the teachers themselves, continuities and ruptures in teaching roles.<sup>21</sup>

## Conclusion

This paper seeks to show how everyday life has an impact on local development processes, taking advantage of the availability of ICTs in Northeastern Uruguay, where it has been possible to build Multireferential Learning Environments. In the identification of these everyday life situations, the Cognitive Analysis (AnCo) has contributed to transit smoothly through all the different fields of knowledge, since it constitutes a double cognitive/epistemological field, which focuses on the study of knowledge from its construction, transduction and dissemination processes, considering the understanding of the language, structures and specific processes of different disciplines, to transform these specificities into foundations for the construction of bases for inter/transdisciplinary and multireferential understanding.<sup>22</sup> This field establishes a commitment to the production and socialization of knowledge in a perspective open to dialogue and interaction between these different disciplines and their translation into public knowledge. From this point of view, a fruitful meeting of researchers, technicians, and users is necessary to bring together distant knowledge such as technology, health, art, and philosophical thought. Its understanding requires starting from the understanding of the ontology of a user who demands attention, from the hermeneutics of a subject in that context, and from a phenomenology of presence paying attention to microhistories and events in everyday life. In this context, the MLE actors need to bring into play four procedural skills: observing, listening, comparing (reading, bibliographic search), and writing. These skills take the form of research results corresponding to the field of the sociology of everyday life. Everyday practices emerge dispersed as memories, combining traces of a sociality that is rescued in the act of writing and representing what a group preserves in its relationship with the present. The affirmation of the freedom of the practices of the subjects as actors and in the potentiality of the human creative ethos is ratified. As a result, learning and the products made constitute political acts of belonging where ICTs make visible stories and presence praxis of everyday life that contribute to social development. AnCo implies a position where social interactions depend on degrees of freedom and participation related to cultural, ideological, and educational values, involving ethical aspects constantly contemplated and respected by the actors.

In the course of the various investigations developed from 2015 to date, it has been possible to identify, describe, and assess the derivations of ICT in the Multireferential Learning Environments involved in local development processes from a complex systemic approach where the daily dimension of those involved in the process is contemplated from a cognitive analysis model. This is possible

because the work has been done by approaching the domain of evidence that comprises the disciplinary knowledge and that of the actors involved, which constitute a Multireferential Learning Environment. The domain of the unknown, which is perceived as unknown and which requires understanding and management, refers to everyday life where the emergencies that constitute fundamental pieces for the development process are detected.

Finally, it is recognized in the process, the necessary obtaining of integrated support for the change of practices and policies that makes possible the required modification as a result of the research process.

It is therefore emphasized that university academic education, which has been influenced by the reflective tradition, is currently obliged to stimulate and necessarily promote the development of reflective skills. From the first research in the MEAs to the last one carried out in the context of a pandemic, in 2021, the social and symbolic aspects of daily life addressed place information and communication at the center of educational quality by transforming it into knowledge. This requires a type of reflective learning, based on a holistic approach accompanied by an integral and functional interpretation of competencies and closely linked to the concept of practical knowledge. It is required in everyday processes, to understand and intervene or act. In this horizon of meaning that is everyday life, everything is potentially susceptible to be questioned, and interrogated in its evidences and manifestations, in a world dominated by ICT and networks. Based on AnCo, it is possible to demonstrate that currently, the development processes observed from everyday life depend basically on the cooperation activities of the actors in the territory, both from the point of view of communication and knowledge production. These forms of cooperation are facilitated by work networks where daily practices reveal a collective intelligence as a driving force for development.

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## Conflicts of interest

The authors declare there is no conflict of interest.

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