

INDUCTION AND ANALOGY IN APPLIED ETHICS IN SOCIO-EDUCATIONAL PROJECTS

Inducción y analogía en las éticas aplicadas en proyectos socioeducativos

MARÍA TERESA YURÉN CAMARENA*

Autonomous University of the State of Morelos, Mexico
yurent@uaem.mx
<https://orcid.org/0000-0002-5905-7146>

ELENA RODRÍGUEZ ROA**

Autonomous University of the State of Morelos, Mexico
grodrea@gmail.com
<https://orcid.org/0000-0002-6277-6758>

MIRIAM DE LA CRUZ REYES***

Autonomous University of the State of Morelos, Mexico
miriam.cruz@uaem.mx
<http://orcid.org/0000-0002-6100-5433>

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* Doctor in Philosophy from the National Autonomous University of Mexico (UNAM). Full-time research professor at the Interdisciplinary Research Center for University Development of the Autonomous University of the State of Morelos. Google Scholar: https://scholar.google.es/scholar?hl=es&as_sdt=0%2C5&q=teresa+yur%C3%A9n&oq=teresa+
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** Doctor of Education (UAEM). Postdoctoral Researcher in the Interdisciplinary Research Center for University Development, Autonomous University of the State of Morelos (UAEM). Google Scholar: <https://scholar.google.es/citations?user=44oxVKYAAAAJ&hl=es>
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*** Doctor in Education from the Autonomous University of the State of Morelos (UAEM). Full-time Research Professor at the Interdisciplinary Research Center for University Development, Universidad Autónoma del Estado de Morelos (UAEM). Google Scholar: <https://scholar.google.es/citations?hl=es&user=BJXrRUMAAAAJ>
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Abstract

The objective is to highlight the advantages of articulating induction and analogy with applied ethics in socio-educational projects. The review of articles shows that ethics underpinned by deductive logic predominate in social projects, but some studies reveal dialogic and critical applied ethics structured with induction and analogy. Theoretical positions on the status of applied ethics are examined, confirming that induction and analogy are present both in the casuistry that culminates in the construction of maxims or prudential criteria, and in procedures that require the participation of those involved in each concrete case, and in the circle of critical hermeneutics with its dialectics. Using an analytical-synthetic procedure, 12 socio-educational projects carried out in a non-formal modality are examined. As a result, four combinations are distinguished: 1) prescriptive ethics and deductive logic; 2) ethics of recognition and alternate logics; 3) dialogic ethics and logic of discovery; and 4) prudential ethics of critical hermeneutics and dialectical logic. It is concluded that, by including induction and analogy in the ethics applied in socio-educational projects, a contribution is made to the improvement of learning and the production of behavioral patterns and moral convictions in accordance with the respective context.

Keywords

Social Education, Ethics, Logic, Morals, Induction, Social Learning.

Resumen

El presente trabajo busca las ventajas de articular la inducción y la analogía con las éticas aplicadas en proyectos socioeducativos. La revisión de artículos muestra que en los proyectos sociales predominan las éticas principialistas, a las que subyace una lógica deductiva, pero algunos estudios revelan éticas aplicadas de corte dialógico y crítico estructuradas con la inducción y la analogía. Se examinan posiciones teóricas sobre el estatuto de las éticas aplicadas, confirmando que la inducción y la analogía están presentes, tanto en la casuística que culmina en la construcción de máximas o criterios prudenciales como en procedimientos que exigen la participación de los involucrados en cada caso concreto, y en el círculo de la hermenéutica crítica con sus dialécticas. Mediante un procedimiento analítico-sintético se examinan 12 proyectos socioeducativos realizados en modalidad no formal. Como resultado, se distinguen cuatro combinaciones: 1) ética prescriptiva y lógica deductiva, 2) ética del reconocimiento y lógicas alternadas, 3) ética dialógica y lógica del descubrimiento y 4) ética prudencial de la hermenéutica crítica y lógica dialéctica. Se concluye que, al incluir la inducción y la analogía en las éticas aplicadas en proyectos socioeducativos, se contribuye a la mejora de los aprendizajes y a la producción de pautas de comportamiento y convicciones morales acordes con el contexto respectivo.

Palabras clave

Educación social, ética, lógica, moral, inducción, aprendizaje social.

Introduction

The topic of this work is the logic that underlies the applied ethics in socio-educational projects. This is a relevant theme because socio-educational projects usually target vulnerable populations with the intention of contributing to the solution of some pressing problem (access to drinking water, food sufficiency, physical and mental health, among others).



The objective is to show the advantages that inductive and analog logic bring in the structuring of the ethics that are applied in this type of projects. It is based on an assumption that has two components:

- Every project and intervention in the social field has an ethical dimension that lies in the interactions, the purposes and values that it involves, as well as in the principles, guidelines and procedures that are followed to make decisions when faced with problematic ethical situations. This dimension is known as “applied ethics.”
- The set of elements that constitute an applied ethics underlies one or more logical procedures that give it structure (deduction, induction, analogy or a combination of them).

The problem referred to in this article alludes to the fact that educational work in any of its modalities and functions always carries an ethical dimension with its corresponding logics, not only because in educational processes values and forms of being moral constitute purposes, but also because ethics is present in the interactions that shape those processes. The ethical dimension in education has been widely studied in terms of professional ethics and classroom interactions of different types and levels, but research has been scarce when it comes to socio-educational projects that are usually carried out in a non-formal modality. Hence, the idea is to identify which are the prevailing logics in these projects, which applied ethics are combined and what effects this combination has on learning and the shaping of moral dispositions.

When it comes to applied ethics, there is a tendency to argue that principled ethics, which underlie deductive logic, are the best way to face dilemmas and make decisions. Faced with this principled tendency, the idea defended in this work is that, by including induction and analogy in socio-educational projects, it contributes to the improvement of learning and the production of patterns of behavior and moral convictions in accordance with the respective context.

The methodology applied is analytical and qualitative. It examines in 12 cases how applied ethics (interactions, values, purposes) is articulated with the logic(s) that structure it, paying special attention to the effects of interactions, educational purposes and the construction of guidelines and criteria of moral judgment. As a result of this test, four types or models are tested.

The content of this article is structured in six parts: in the first part, the results of the literature review are exposed; in the second part, the



theoretical elements that support the analysis performed are presented; in the third part, the methodology is described; afterwards, the results of the analysis are exposed, followed by a discussion and some conclusions.

Applied logic and ethics: the literature review

In the last two decades, a large number of articles and books have been published about applied ethics in different fields of knowledge and practices that involve controversial or dilemmatic moral issues. Among these areas are sustainability, interculturality, gender, the use of technology, health and death, etc. Some of these works make explicit the logics that accompany the applied ethics and refer to them in the following sections.

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Deduction and principled ethics

The concept of “applied ethics” is often associated with a procedure that consists of establishing general principles defined in the field of academic ethics, from which codes of conduct and criteria for resolving dilemmas are deduced, as well as guidelines for distinguishing good and bad practices. According to Knapp and Fingerhut (2024), the concept alludes to the application of ethics in specialized areas or professions. Hirsch Adler (2013) makes explicit four principles that usually underpin professional ethics: charity (requires taking into account and legitimizing the achievement of certain goods and services), non-maleficence (orders to avoid physical, emotional and legal damage), autonomy (needs to guarantee the right of people to be informed and express their consent, as well as to be respected in their privacy) and justice (demands the rational distribution of resources, risks and responsibilities).

In the field of research ethics, the principled position of deductive cutting is also important (Aluja & Birke, 2004; Honorato *et al.*, 2022). The principles mentioned are the same that apply to professional ethics, but with some additions such as merit and integrity in research (Koepsel & Ruiz, 2015) or scientific validity (Cruz *et al.*, 2020). Some qualities derived from these principles are often emphasized, among them: respect for human dignity, confidentiality, transparency, care in the handling of animals, honesty, respect for intellectual property and social responsibility. It is usually assumed, without stating how it happens, that principles are internalized and constitute the “*ethos* of the researcher” (Koepsel and Ruiz, 2015; Bos, 2020). Also, in the field of research, the principles are considered necessary to make decisions and resolve dilemmas; from

them lists of good and bad behaviors are established (Zúñiga, 2020), both in the development of research, as well as in the publication, editing and opinion of it.

Ethics applied to environmental problems also show a prevalence of deductive logic. Faria (2020) considers applied ethics to be a generic rational reflection on the relationship between moral agents and elements of the natural world. The author reviews several positions on this (anthropocentrism, biocentrism, holism, pluralism, animal ethics) and determines as a basic assumption for the deduction that human beings decide which non-human entities and processes are morally considerable.

The applied ethics that prevail in the field of technologies are principled and deductivist. Linares (2018) provides multiple arguments to justify this position, and points out that the extension of technological power has transformed the self-understanding of the human being and has imposed technological rationality whose imperative is summarized in the idea that everything technically feasible is morally justified and must materialize. The author opts for a moderate anthropocentrism and a hierarchical biocentrism, framed in four principles:

- Responsibility (which requires ensuring the existence of moral beings capable of being responsible).
- Caution (even without strong scientific evidence, it is imperative to pause or inhibit technological action that could generate transgenerational global damage).
- Protection of individual and community autonomy (without affecting the freedom of others).
- Distributive justice (of technological benefits and risks).

In relation to artificial intelligence (AI), González and Martínez (2020) also opt for a principled stance. From their perspective, applied ethics should contribute to solving ethical dilemmas, applying the following principles: respect and protection to people, guaranteeing their autonomy, avoiding harm, maximizing the benefits that AI provides and reducing the harm that it could cause.

Induction and analogy articulated to dialog and participation

On the other hand, in several fields of social practices, maxims or criteria are inductively constructed from the specific knowledge of the cases and contexts thanks to the participation of the people involved and the dialog to compare points of view, find similarities and differences, and reach consensus.





Some articles on research ethics reveal a logic other than deductive. For example, Darretxe *et al.* (2020) warn that any research process is an ideological and ethical choice, especially if research is to be inclusive. They argue for participatory research that involves a new profile of the researcher: someone who learns in collaboration with others, seeks social transformation, and is willing to abandon a position of power and control over the process. Calvo (2022) refers to a dialogic ethic open to reflection on principles, values, virtues, ends, and affections that guide and motivate people in particular contexts.

Of the recognized ethics in the environmental field: utilitarian, deontological and virtue ethics, Marcos and Valera (2022) bet on the latter, considering that, instead of a predictive knowledge, experiential and reflective knowledge is required. According to these authors, the idea of acting locally, thinking globally, makes it necessary to combine the study of nature with a virtuous act based on good inclinations, rather than general and abstract principles.

In the field of bioethics, Honorato *et al.* (2022) warn that the principle of autonomy is problematic when put in relation to issues such as euthanasia or the anticipated will. To make it effective, it is necessary to move from a paternalistic model of care to a participatory model; in the first, the doctor often undervalues the cognitive capacity of his patient and maintains the power of decision; in the second, information is offered to the patient and the opportunity to decide on his treatment, also determining value criteria. Vergara (2022), moreover, argues that the preparation for the good death is closely related to the sociocultural context.

For their part, in the field of social bioethics, Rojas and Nemogá (2021) consider that the recognition of the equality and dignity of cultures requires understanding the way in which each community handles its interdependence with nature. A similar position is maintained by Munguía and Mancilla (2023) when they point out that social bioethics seeks to solve social situations of injustice, based on the understanding of the identity and cultural diversity of native peoples, their perception of the quality of life and their relationship with the land.

The combination of deduction and induction

The combination of logical procedures is observed in the ethics applied to the treatment of some specific problems (environment, gender, diseases, technologies). For example, Salazar *et al.* (2020) argue that applied ethics seek to offer ethical philosophical reflections that contribute to the

solution of moral problems in specific fields. For this to be possible, collaborative multidisciplinary work, involving experts and policymakers, is required. This form of applied ethics is concretized in public policies that consider power relations, which makes it essential to move from the abstract to the *empiric* sphere for the collection and treatment of particular data, and the recognition of diverse values and criteria.

Terrones and Rocha (2024) propose critical hermeneutics to discover the moral aspects involved in human activities. They consider that ethical initiatives are insufficient, especially in the field of AI, because mechanical compliance with codes does not imply regulatory questioning or motivate discussion about good practices. His proposal is procedural, dialogic, hermeneutic and critical.

Hence, even when applied ethics prevail in many fields of social practices, it is convenient to understand the particular contexts, promoting dialog and participation of those involved to arrive dialogically to ethical guidelines and criteria that contribute better to the solution of problems. This is more evident when considering that several of these fields refer to practices in a double sense: “They deal with human practice and inquire for the good of it” (Silva Carreño *et al.*, 2023, p. 192).

The theoretical references

Answering the question ¿what are applied ethics? has been a task undertaken by various authors since the 20th century. The discussion around this topic is also accompanied by positions around the logics that underlie these ethics.

On the status of applied ethics and their rationale

Oswaldo Guariglia (1996) refers to the difficulties and possibilities of applied ethics seen from the perspective of various theoretical ethics. First, it alludes to an anticognitivist or emotivist position that holds the impossibility of an applied ethics, arguing that a theoretical discipline cannot extend over such a great diversity of problems as those presented by concrete reality. It also refers to a cognitivist and universalist position that denies the possibility of these ethics considering that the theoretical level is general and consists of a few principles and rules of inference, while the specificity of the cases to which these principles apply requires an additional task of description and typing, which makes it necessary to have experts in each field of knowledge, which brings about leaving

the field of ethics. From the position of Guariglia (1996), it is advisable to develop, through the study of each case and using a type of practical reasoning that expands its field of application through the analogy, a casuistry that would later serve for solving new cases.

This form of casuistry and other possibilities are critically analyzed by Adela Cortina (1993, 1996), to justify her own position. As a starting point, it is not one, but multiple applied ethics that “aim to guide action in everyday life” (1996, p. 120). She argues that, unlike moral ethics or philosophy whose purpose is to base the moral from theoretical or academic ethics, principles applicable to life, applied ethics are the matter of those who are valid interlocutors in moral issues that affect them in some area of social life. According to Cortina (1996), individual morals are insufficient to solve the problems of coexistence, therefore, it is convenient to construct cooperatively, in each problematic field of action, a frame of reflection that guides decision-making. This construction makes dialog and comparison of points of view indispensable.

Regarding the method of construction of these ethics, Cortina (1996) distinguishes three models that are insufficient and exposes the own. The first model responds to the deductive ideal and consists of a casuistry that “considers the concrete cases as a particularization of the general principles” (p. 122). It takes the form of the practical syllogism of Aristotelian style, but when arriving at the particular moment, it resorts to prudence. The flaw he sees in this model lies in the impossibility of having material principles that are universal. If it is needed to start from the beginning, he says, it has to be formal or procedural.

A second model coincides with the casuistic form referred to by Guariglia (1996). In this article, the principles are replaced by maxims, understood as “wise and prudent criteria for practical action” (Cortina, 1996, p. 123) obtained inductively by convergence of judgments that provide probability and are based on experience. The problem noted by Cortina (1996), lies in that when maxims come into conflict, it is often resorted to material principles accepted by intuition that do not ensure rational decisions. A procedural principle is required.

A third model upholds the procedural principle of discursive ethics: “are only valid those rules of action in which all those who could be affected as participants in a practical discourse could agree” (Habermas cited in Cortina, 1996, p. 126). The application of the principle is not simple: it requires strategic rationality and must obey a dialogic ethical principle, as if it were acted on in an ideal community of communication, which is problematic. From the ethics of discourse, Cortina says (1993),



practical discourse is used to move from “I think” to “we argue”. The values, principles or maxims and strategies are proposed considering those affected in each specific case. Although this model is necessary, it is insufficient if hermeneutic circularity is not used.

Hermeneutic circularity and the role of induction and analogy

We agree with Cortina (1996) and other authors in arguing that what corresponds to applied ethics is the design of the rational framework of application “which enjoys the circularity proper to critical hermeneutics” (pp. 127-128). It is a question of valid interlocutors, with the support of specialists in each field, finding principles of medium scope and values applicable in the problematic context in question, to achieve, in a cooperative way, a certain good, which usually requires the cultivation of habits or dispositions of the participants and the respective convictions, as well as the development of some strategy respectful of the values shared by those who participate.

The hermeneutic circularity interpreted by Villa Sánchez (2023), based on Ricoeur, is complementary to that presented by Cortina, because it gives an outlet to the problem of how the tension between principles—which are the basis of moral judgment—and convictions—which arise from conventions—is resolved. According to Villa Sánchez (2023, p. 168), the hermeneutic circle, typical of praxis, is made up of three moments: the good, the just and its application. Ricoeur points out that the way out of the tension between argumentation and conviction is not theoretical, but practical, and lies in moral judgment in this situation, i.e., in prudence. Thus, the tension between what is considered good (in a certain context) and just (with the pretense of universality) does not end in a confrontation, but in the need to clarify one and the other so that “the estimation as good and respectable attributed to the action falls to the agent of said action” (p. 180). It is the practical wisdom of the agent that must mediate so that “justice truly deserves the title of equity” (Ricoeur quoted in Villa Sánchez, 2023, p. 184). In this regard, it should be added that this mediation also occurs between the plurality of the community and the autonomy of the moral subject, as well as between the legality that crosses the institutions and the traditions of the community.

The importance of Ricoeur’s proposal, Villa Sánchez says (2023), lies in the fact that it moves away from the ethics of Habermas and Apel’s argument, insofar as it concedes that the reason it analyzes is always “an impure, contextualized, historical, communal reason” (p. 171), which at-



tends to tradition and conventions or customs. At the same time, it moves away from contextualism, insofar as it meets the demand for universalization, considering that an “apology of difference by difference [...] renders indifferent all differences insofar as it renders any useless discussion” (Ricoeur cited in Villa Sánchez, 2023, p. 171). More than a path of mere understanding, a dialectical process is followed that necessarily includes criticism. This is a critical consideration of the “coherence between language, thought and action that links states of mind, emotions and historicity” (Rodríguez Ortiz *et al.*, 2023, p. 235).

Although it is relevant for the subject of this research the broad justification provided by Villa Sánchez (2023) to Ricoeur’s proposal (1996) around practical wisdom as an element of mediation, it is also convenient to consider that, when talking about applied ethics, such wisdom cannot be only that of a leader, an avant-garde or a group of enlightened people, but that of a reflective community that deliberates within the framework of a practical discourse, as Cortina proposes. This gives the process a political nuance.

It should also be borne in mind that the maxims or guidelines of medium scope have a problematic or conjectural character that – analogous to the hypotheses obtained by the logic of discovery (Beuchot, 2009) that includes induction, analogy and abduction – require for their application to address not only the common in several cases, but also the difference. As Beuchot (2009) states, it is in the dialog with others that arguments for and against are invoked, and a deliberation is made through *phronesis* (prudence). Hence the importance of this form of logic.

It is not, then, simply a question of applying certain principles to specific problems, but of constructing cooperatively maxims and strategies of action for achieving the common good. In this regard, Palazzi and Román (2005) consider that the search for solutions to new problems that arise in certain contexts, contributes to reviewing and recreating existing social morality (or ethnicity) and calls into question customary practices and ways of acting. Therefore, they affirm that applied ethics requires an open and critical conscience, as well as a willingness to take the risk of affecting interests. From their perspective, applied ethics entails a retroactive (over past mistakes) and proactive (risks are taken and projected into the future) responsibility, as well as the need to narrate. The latter requires the identity-otherness dialectic (Ricoeur, 1996; Silva Carreño *et al.*, 2023) which includes self-recognition and recognition of the other.

The discussion on applied ethics that has been exposed, serves as a basis for adopting a different position from the principled and deductivist. In this position, maxims, understood as prudential criteria rather



than principles, come to the fore. Induction and analogy are defined as logical procedures that are better suited to promote learning and the construction of moral convictions linked to context, rather than abstract principles imposed from outside. Dialectics mediated by prudence, rather than obedience to pre-established codes, also become relevant. This position is a consequence of the analytical-synthetic procedure carried out, which is described below.

Methodology

In this research, a qualitative approach of directed content analysis is applied (Hsieh & Shanon, 2005), whose starting point was the identification and elaboration of key concepts: socio-educational project, deductive logic, inductive logic, analog logic, hermeneutic circle. The analytical moment was followed by a synthesis procedure to articulate the logics with the ethics, examine their results and determine some patterns that can serve as criteria for further research.

The selection of the projects to be analyzed considers the following:

- A socio-educational project is defined as a set of activities planned and organized to provide an educational service in a non-formal way to a specific population group, which is generally socially disadvantaged.
- Each socio-educational project constitutes an educational device that includes objectives, goals, resources, strategies and rules of operation, although these elements are not always explicit.
- In socio-educational projects, different agents are usually involved that impose their imprint on the design and operation. Civil society organizations (CSOs) are frequently involved, but also public or private educational institutions and even government agencies. Of course, the population that is provided with the educational service also participates.
- The planning and design of the project does not always precede the activities that are launched; sometimes, the project is built along with its realization.
- An invariable feature of such projects is that they arise from the cooperation, agreement and willingness of those involved to meet certain objectives and rules. It is in the interactions that constitute these activities that the applied ethics are carried out and can be analyzed.



When examining the cases, the following questions were answered: who and how are involved in the project? What are the logical procedures perceived in the interactions? What is the role that the people involved in the project assume in relation to principles, maxims, moral criteria or guidelines?

The selection of cases was difficult because most of the articles reporting on socio-educational projects do not provide all the information required to answer these questions. Therefore, although more than thirty articles were reviewed, only twelve cases were selected that allowed to determine four classes of projects. The recovered articles report experiences of the last twenty years.

A first classification arose from the analytical process that resulted in a robust distinction:

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- Those projects that were based on some previous code, a set of pre-established principles or a list of good and bad practices.
- Those who established, through dialog, the maxims or rules that the participants would follow.

In relation to the latter group, it was identified who participated in the determination of the maxims and if for this purpose the specific characteristics of the social group or community benefited were considered, if the maxims or rules were the object of collective reflection and discussion, and if in that process some general principle was taken as a reference. Problematic situations, if any, were also noted when applying the maxims in particular cases and how they were resolved. Contrast tables were prepared to organize the results of the analysis. The moment of analysis culminated with the articulation, in each case, of the underlying logics to the ethics that were identified. While the moment of synthesis consisted in the comparison between the cases analyzed to obtain a classification that we consider preliminary.

Results

The analysis and synthesis carried out based on the selected socio-educational projects allowed us to distinguish four classes of combination that are shown below.

Prescriptive ethics and deductive logic

Ethics is prescriptive when the principles determined by those who provide the educational service, derive in maxims and rules, according to which the process is carried out. This is often the case in projects where a good or benefit is granted subject to training or the handling of technical or ideological information. CSOs or government bodies are often involved in such projects.

Various government policies are embodied in such proposals. An example of these is the Productive Project Support Program for Family Heads: Morelos Women's Enterprises 2014 (Official Newspaper Tierra y Libertad, 2014). Its objective is to provide credit on preferential terms for the productive activities and self-employment of the heads of families of the state of Morelos to empower them and improve the quality of life of their families according to the criterion of equity. The program stipulates that each project should be submitted by groups of between 3 and 7 women, with the intention of promoting community development and contributing to the reconstruction of the social fabric. Technical training was provided to stakeholders to develop the projects. The results were not as expected because the groups were forcibly formed, their motivation was self-interested cooperation that did not contribute to community development and bonds of trust and reciprocity were not forged (Yurén, 2017).

As in socio-educational projects associated with other policies, in the case given as an example, the objectives and ethical principles are very abstract, and the strategy was prescriptive and inflexible. Also, the educational component was handled as conditioning rather than as a training opportunity and participation was passive and imposed.

Ethics of recognition and alternating logics

In five of the cases examined, the objectives and the educational strategy were established in advance by those who provided the service, as well as the principles that guided the project (justice, equality, inclusion, peace) and the maxims that guided the strategy. It can be considered, then, that the general framework was a deductive procedure, however, in each of these experiences dialog and intersubjective recognition were promoted, as well as the production of moral criteria or guidelines with conjectural nature, which allowed proposals to be made in relation to problems lived in specific contexts. In four cases (Caballer *et al.*, 2022; Mijangos *et al.*, 2017; Catalá & Perales, 2017; Rodríguez Roa *et al.*, 2023) sought to fulfill an educational objective using art as mediation; in another case, the pro-



cess was carried out within the framework of a service-learning program (Cortijo *et al.*, 2022).

In all cases, respectful coexistence and empathic experiences were favored, as well as horizontal communication between participants, either to avoid violence (Mijangos *et al.*, 2017), or to contribute to intercultural integration (Caballer *et al.* 2022) and social cohesion (Catalá & Perales, 2017). In particular, recognition of the other and trust were stimulated (Cortijo *et al.*, 2022). These forms of interaction are attributed to the good results of those who report these socio-educational projects.

This was very clear in the project reported by Rodríguez Roa *et al.* (2023), where art was used as a mediation to achieve an ethical positioning in the face of violence. The strategy consisted of workshops whose purpose was to achieve, through artistic languages, reflection and awareness about the implications of violence in the environment and generate possible forms of resilience and action in the construction of peace. The dialogic, empathetic and creative process helped to sensitize those who participated: each one became aware of the ways in which he suffers and exercises violence and expressed a commitment to the construction of peace. The theme and objective of the workshops was given to promote a dialogic ethic, the recognition of self and the other, and taking a responsible position. In this way, the initial deductive logic gave way to induction and analogy, which favored the understanding of attentive listening and solidarity.

Dialogic ethics and logic of discovery

In relation to socio-educational projects, Corbella (2021) refers to some guidelines proposed by Martha Nussbaum and Amartya Sen: respect the individual freedom of the subjects; foster their agency to empower them; create, prioritize and enhance their capacities beyond their limitations; seek the active and equal participation of the agents of the socio-educational relationship; facilitate personal autonomy to avoid authoritarian and imposed actions; carry out individualized attention with special sensitivity to cultural diversity. Although the author refers to “principles”, we consider that these are more rules obtained inductively from various projects in which dialog and agency constituted the basic educational strategy.

This combination can be observed in projects where the learning community strategy or similar was applied, favoring that the beneficiary population participated from the beginning making decisions in relation to the tasks and objectives. In the words of those who report one of these experiences (Astorga *et al.*, 2023) it was sought to carry out an

action-research process where the co-construction of knowledge with its own senses and purposes, recognition under the forms of love, equality and social esteem, and the validation of work by those who participated was carried out. In another case (Cavallo, 2022) a dialogic-participatory methodology was favored for adults and young people to develop skills and attitudes in workshops organized according to their interests, stimulating self-management. In a third case (Vargas *et al.*, 2021), education in interculturality and reflection on moral dilemmas were sought to combat discrimination and racism. A playful strategy was applied, and although participation was not achieved from the beginning, it was made possible throughout the process so that children made proposals to adapt the general plan to their interests.

A complex project, which lasted several years and had various variants, started with the intention of helping migrant day-laborer mothers to stimulate their children's schooling and initiate a lifelong learning process themselves. The experience reported in the first year (Yurén & De la Cruz, 2011) showed that the flexibility of the device, a mediation marked by intersubjective recognition and openness to dialog, were the opportunity to work on various topics of interest to the participants (gestation, learning, justice, good coexistence, education of minors, among others). The interactions increased the interest in learning. The women reflected on their relationship with the institutions and made plans for the future; they recognized themselves as learners and found the possibility of taking on the role of teachers in an experience in which each prepared a presentation with slides to teach others how to make a dish (mole, flan, donuts, tortillas, etc.). There was also a time when the participants organized a cohabitation to give back to those who served as educators.

The cases described here reveal processes in which the understanding of the particular context, the dialog and the proposals of those who participated were favored, both in the determination of the criteria and guidelines of action and in the implementation of the activities to meet the objectives of the respective projects. Situated cognition and activity in the process of learning, together with work with and for others, contributed not only to the fulfillment of educational objectives, but also to the formation of a supportive and tolerant consciousness. Induction and analogy structured applied ethics.



Prudential ethics of critical hermeneutics and dialectical logic

Going through the different moments of the hermeneutic circle is not easy and takes a long time. An example of this is a socio-educational project developed since 2010 by several OSCs, in collaboration with indigenous communities in Sierra de Jalisco, Mexico. The project, reported by Lobo and Yurén (2023), aimed to support the process of transformation of Wixaritari communities into extreme poverty and marginalization in their effort to achieve social, environmental, economic and cultural sustainability, in response to their needs and taking as a starting point access to drinking water. The Ha Ta Tukari (“Water, Our Life”) project began when representatives of the La Cebolleta community and OSC Isla Urbana and ConcentrArte made a commitment to work together to install rainwater harvesting systems in the mountains. Over time, collaborators and volunteers joined this network of actors. The network activity required multiple agreements and an organization articulated by empathetic relations, reciprocal ethical recognition and a common purpose (Lobo & Yurén, 2023).

Once progress was made in meeting the need for access to water, other needs arose that demanded new activities. The intervention strategy was designed and developed in two intertwined lines: education and community empowerment. Workshops were implemented to promote the development of skills required in specific tasks, and activities were carried out that allowed participants to configure their own notions, identify the social and environmental problems that affected them and develop capacities to overcome them through resilience, artistic expression and joint work.

The intervention method, called “The Infinite Window” (Lobo & Yurén, 2021), has an integrative character (it allows the participant to exercise their multiple intelligences) and sensitive (it favors a creative-artistic process that integrates perception, sensations and feelings); it leads the participants to recognize themselves in relation to their social and natural environment, giving them tools to face their problems and improve their living situation. It is playful and flexible, its basic postulate holds that artistic creation is a generative agent of social transformation, because art is, in itself, a process of transformation.

To implement the socio-educational strategy, diagnosis, monitoring and periodic evaluation were necessary, which were carried out in a dialogical way. At various times, collective debate and deliberation were required to recognize needs and what needed to be changed, as well as to



generate strategies for change and implement them. Narratives from the participants were also gathered, which were the basis for adjustments to the designed programs.

The implementation of the socio-educational strategy set in motion the dialectic between the particularity of the community—uses, customs, sense of belonging and affective ties—and the universality of human rights. It also made possible the articulation between the participants, which meant erasing hierarchical and cultural boundaries, and combining respect for tradition with innovation to restructure spaces and productions. It also stimulated criticism of existing ethnicity and favored autonomy and empowerment of the community, which allowed its members to take a stand against formal and informal powers.

The observed transformations allow us to affirm that those who integrate the network (OSC and community) have responded, through their activity, to a pragmatic objective (promoting access to drinking water) according to an axiological requirement of sustainability and autonomy. The instrumental logic gave way to a communicative logic (Habermas, 1989) and the community and its members have become more autonomous and involved; children and women were made visible, spaces of expression were opened for them, and peer support networks were created. Women became interested in learning more about their bodies and gestational processes, as well as the care they required; they are now accessing elected positions and participating in decision-making that affects the community and their lives. To date, the wixaritari communities continue in their transformation process.

The prevailing logics in this long process were the induction and analogy, which structured participation, dialog and understanding of the sociocultural particularity, without undermining the subjection of the good (values, norms, practices, customs) to the analysis and opinion of moral judgment supported by principles with universalist pretension (justice, equity, autonomy), to finally overcome the “practical bottlenecks” through practical or prudential wisdom.

In this long process, multiple learning and skills have been generated, both in the Wixárika population and in the members of the OSCs. These achievements, together with the solution of environmental and social problems, also contributed to an exercise of understanding of oneself and others, and of moral self-monitoring, which is reflected in the activities developed in favor of present and future generations, in their relationship with nature.



Discussion

What the literature review showed is that, in relation to the applied ethics in different fields, there is a tendency to fundamentalism far from the critical hermeneutics and the dialectics that it involves. However, in socio-educational projects this trend is lower. The experiences of different groups seem to have influenced a way of working that favors participation, dialog, understanding of the particular and activity based on criticism.

Some implications are inferred from the cases examined. First, there is no biunivocal relationship between the ethics applied to socio-educational projects and the logics that give structure to the activities carried out. Second, the validity of applied ethics does not depend entirely on their logical structure, but this contributes greatly to the quality of the results and the process followed.

When hermeneutic circularity and dialectical perspective are sought, knowledge and understanding of particularity are invariably included to proceed inductively and analogically (Beuchot, 2009; Villa Sánchez, 2023). This opens avenues for the realization of ethics that overcome the prescriptive and often ineffective rigidity of deductivism.

The combination of hermeneutic circularity with induction and analogy contributes to good learning and the constitution of moral consciousness. This is because, on the one hand, induction and analogy support the dialog and the search for consensus that are indispensable for the construction of prudential maxims or criteria, as well as strong convictions (Cortina, 1996; Ricoeur, 1996). On the other hand, these logical procedures require working in specific contexts on real problems and situations, the solution of which requires collaboration with others. In other words, it not only demands the cognitive activity of learners, but also requires a “situated cognition” that confers relevance to learning and enriches it by social activity (Díaz Barriga & Hernández, 2002).

Conclusions

The main contribution of the work carried out is to show that the combination of induction and analogy with certain ethical perspectives has favorable effects on learning and on the formation of the moral conscience of those who participate in socio-educational projects.

Four classes of combinations are distinguished, and it is concluded that the best results are due to the incorporation of inductive logic and analogy in educational processes. When the objectives, rules and inter-



vention strategy are established beforehand and there is no time for dialog and co-construction between those who educate and those who will be educated, then the results usually have less educational impact than that of projects built and developed cooperatively. Something what happens frequently in non-cooperative projects is that the group of learners is seen as something homogeneous, without considering the differences of the participants. The result is often below the expectations of the project designers.

It is concluded that, analogous to what happens in the production of scientific knowledge, two basic logics operate in the production of principles, maxims and guidelines for moral behavior: the first is to deduce from principles, justified in some way in some institutional field (academy, church, party, among others), the norms, values and guidelines that are considered ethically valid; the second is the logic of discovery that consists in seeking the understanding of particular problem situations and, through induction and analogy procedures, arrive at the formulation of maxims, valuable purposes and guidelines of ethical behavior for the practical solution to the problems faced; active participation in this process is translated into convictions. Although the first of the logics is the most helped because it gives the impression of ethical soundness, in the educational field it has limited results because it does not require great activity of the learner. The second path, on the other hand, involves situated cognition and greater activity of the learner, which ensures better learning (Díaz Barriga & Hernández, 2002), while guaranteeing strength in moral convictions (Cortina, 1996).

It is recognized that the main limitation of this investigation is the low number of cases analyzed, largely because the description of the projects is often insufficient for their analysis. In future research it will be useful to highlight more clearly how the inductive procedure and analogy are carried out to generate criteria and patterns of moral behavior that correspond to assumed convictions. That will require observational work and interviews focused directly on revealing that process.

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Authors	Contributions
María Teresa Yurén Camarena	<ul style="list-style-type: none">• Conceptualization. Formulation of research objectives.• Research. exploration, collection, qualitative data analysis and construction of theoretical synthesis.• Methodology Design.• Monitoring• Original Draft Writing

Declaration of Authorship - Taxonomy CRediT	
Authors	Contributions
Elena Guadalupe Rodríguez Roa	• Research. Carry out a research and exploration process, specifically in the collection of data/evidence and participation in the qualitative analysis process.
Miriam de la Cruz Reyes	• Research. Conduct a research and inquiry process, specifically collect data/evidence and participate in the qualitative analysis process.

Artificial Intelligence Use Statement
<p>María Teresa Yurén Camarena, Elena Guadalupe Rodríguez Roa and Miriam de la Cruz Reyes, DECLARE that the elaboration of the article <i>Induction and analogy in the applied ethics in socio-educational projects</i>, did not have the support of Artificial Intelligence (AI).</p>

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