



Role-Playing Game (RPG) and Environmental Education: Paths towards sustainability paradigms - a theoretical essay

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Role-Playing Game (RPG) e Educação Ambiental: caminhos frente aos paradigmas da sustentabilidade - um ensaio teórico

RESUMO

Objetivo - O presente artigo tem como objetivo refletir sobre o Role-Playing Game (RPG) como recurso pedagógico na Educação Ambiental, analisando seu potencial formativo para a sustentabilidade frente aos dilemas socioambientais contemporâneos.

Metodologia - A fim disto, realizou-se um ensaio teórico, fundamentado na reflexão crítica e na articulação conceitual entre referenciais da sustentabilidade enquanto paradigma, da Educação Ambiental Crítica e dos estudos sobre o jogo e o RPG como fenômeno cultural e sistema social estruturado.

Originalidade/relevância - Este estudo insere-se na lacuna teórica que ainda aborda o RPG predominantemente sob viés instrumental ou motivacional, propondo sua problematização como dispositivo formativo capaz de explicitar conflitos, disputas de interesse e projetos societários implicados na crise socioambiental. A relevância acadêmica reside na articulação entre ludicidade, complexidade e formação crítica para a sustentabilidade.

Resultados - Argumenta-se que o RPG, ao instituir um espaço simbólico regulado por regras e aberto à negociação de sentidos, possibilita a vivência de situações complexas, a experimentação de papéis sociais e a problematização das relações de poder que transpassam a relação sociedade-natureza.

Contribuições teóricas/metodológicas - O estudo amplia a compreensão do RPG como instância cultural e formativa, articulando-o aos pressupostos da Educação Ambiental Crítica e evidenciando seu potencial como estratégia participativa e transdisciplinar.

Contribuições sociais e ambientais - Ao reforçar práticas educativas que promovem a reflexão crítica e a participação ativa dos envolvidos, o trabalho contribui para a formação de sujeitos capazes de compreender e intervir nas disputas que moldam a sustentabilidade, fortalecendo processos educativos comprometidos com a transformação socioambiental.

PALAVRAS-CHAVE: Metodologias Ativas. Mudanças Climáticas. Triple Bottom Line.

Role-Playing Game (RPG) and Environmental Education: pathways toward sustainability paradigms - a theoretical essay

ABSTRACT

Objective – This article aims to reflect on the Role-Playing Game (RPG) as a pedagogical resource in Environmental Education, analyzing its formative potential for sustainability in the face of contemporary socio-environmental dilemmas.

Methodology – To this end, a theoretical essay was conducted, grounded in critical reflection and in the conceptual articulation between sustainability as a paradigm, Critical Environmental Education, and studies on play and RPG as a cultural phenomenon and structured social system.

Originality/Relevance – This study addresses a theoretical gap in which RPG is still predominantly approached from an instrumental or motivational perspective, proposing its problematization as a formative device capable of making explicit conflicts, competing interests, and societal projects implicated in the socio-environmental crisis. Its academic relevance lies in articulating playfulness, complexity, and critical formation for sustainability.

Results – It is argued that RPG, by establishing a symbolic space regulated by rules and open to the negotiation of meanings, enables the experience of complex situations, the experimentation of social roles, and the problematization of power relations that permeate the society-nature relationship.

Theoretical/Methodological Contributions – The study expands the understanding of RPG as a cultural and formative instance, articulating it with the assumptions of Critical Environmental Education and highlighting its potential as a participatory and transdisciplinary strategy.

Social and Environmental Contributions – By reinforcing educational practices that promote critical reflection and active participation, the study contributes to the formation of subjects capable of understanding and intervening in the disputes that shape sustainability, strengthening educational processes committed to socio-environmental transformation.



KEYWORDS: Active Methodologies. Climate Change. Triple Bottom Line.

Role-Playing Game (RPG) y Educación Ambiental: caminos frente a los paradigmas de la sostenibilidad – un ensayo teórico

RESUMEN

Objetivo – El presente artículo tiene como objetivo reflexionar sobre el Role-Playing Game (RPG) como recurso pedagógico en la Educación Ambiental, analizando su potencial formativo para la sostenibilidad frente a los dilemas socioambientales contemporáneos.

Metodología – Para ello, se desarrolló un ensayo teórico fundamentado en la reflexión crítica y en la articulación conceptual entre la sostenibilidad como paradigma, la Educación Ambiental Crítica y los estudios sobre el juego y el RPG como fenómeno cultural y sistema social estructurado.

Originalidad/Relevancia – Este estudio se inserta en una laguna teórica en la cual el RPG aún es abordado predominantemente desde una perspectiva instrumental o motivacional, proponiendo su problematización como dispositivo formativo capaz de explicitar conflictos, disputas de interés y proyectos societarios implicados en la crisis socioambiental. Su relevancia académica radica en la articulación entre ludicidad, complejidad y formación crítica para la sostenibilidad.

Resultados – Se argumenta que el RPG, al instituir un espacio simbólico regulado por reglas y abierto a la negociación de sentidos, posibilita la vivencia de situaciones complejas, la experimentación de roles sociales y la problematización de las relaciones de poder que atraviesan la relación sociedad-naturaleza.

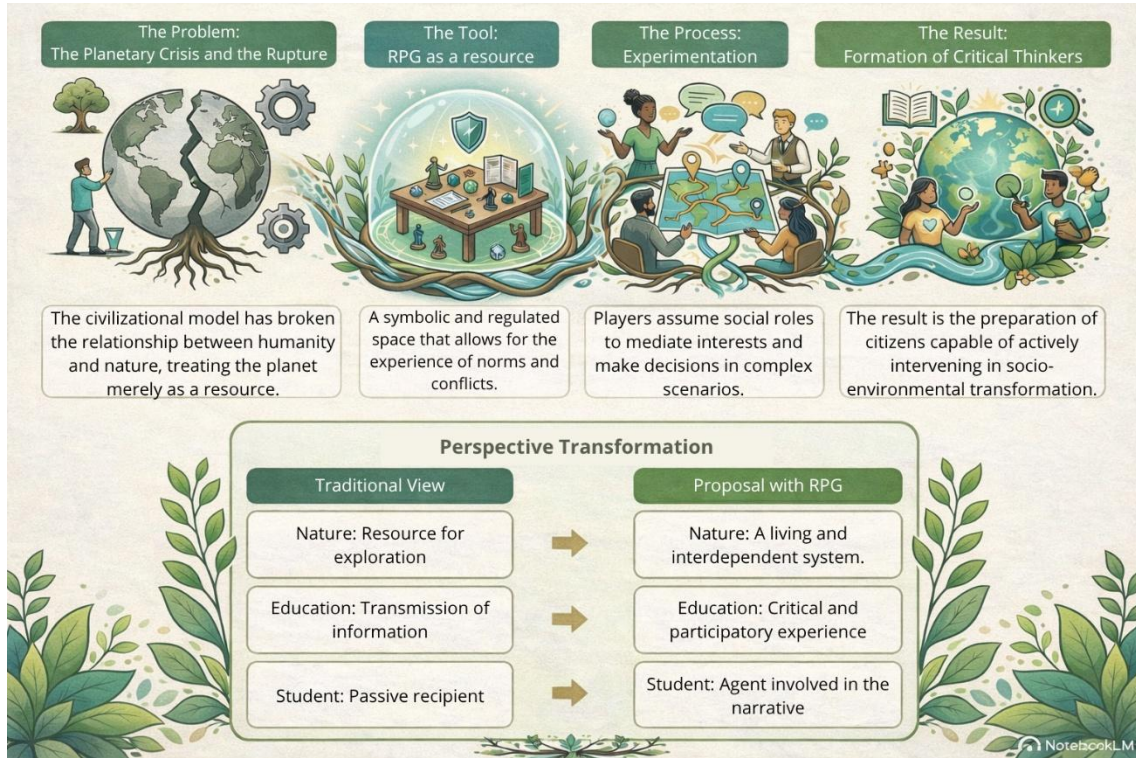
Contribuciones Teóricas/Metodológicas – El estudio amplía la comprensión del RPG como instancia cultural y formativa, articulándolo con los postulados de la Educación Ambiental Crítica y evidenciando su potencial como estrategia participativa y transdisciplinaria.

Contribuciones Sociales y Ambientales – Al reforzar prácticas educativas que promueven la reflexión crítica y la participación activa de los involucrados, el trabajo contribuye a la formación de sujetos capaces de comprender e intervenir en las disputas que configuran la sostenibilidad, fortaleciendo procesos educativos comprometidos con la transformación socioambiental.

PALABRAS CLAVE: Cambio Climático. Metodologías Activas. Triple Bottom Line.



GRAPHIC SUMMARY





1 INTRODUCTION

Over the last five decades, interconnected environmental changes characterizing the worsening planetary crisis have been documented: the continuous global warming observed during this period has driven extreme and more intense and frequent climatic events in various regions of the world; the accelerated melting of polar ice has contributed to the rise in sea level; changes in the thermal and chemical conditions of the oceans threaten marine biodiversity; and early signs of possible tipping points, such as mass mortality of coral reefs or the increasing risk of collapse of essential climatic systems, suggest that abrupt changes may be approaching (Steffen *et al.*, 2015; Rockström *et al.*, 2009; Lenton *et al.*, 2019; Ripple *et al.*, 2020).

Although they manifest in distinct ways, all these pieces of evidence converge on the same common denominator, which is the intensification of anthropogenic actions of *Homo sapiens*, inscribed in a civilizational model that exceeds the ecological limits of the planet in order to guarantee the egoic desires of this very being, historically associated with patterns of production, consumption, and development that challenge the capacity of ecological systems to sustain themselves (IPCC, 2023).

In this context, as Sauvé (1996) argues, Environmental Education (EE) has been progressively articulated with contemporary debates on sustainability, assuming a central role in the formation of individuals capable of understanding the complexity of socio-environmental challenges, without making it an instrument for uncritical promotion of sustainable development.

In the same vein, other educational currents appear to strengthen the confrontation, such as Education for Sustainability (EFS). Far from being limited to the transmission of environmental information, EFS emphasizes formative processes guided by critical reflection and articulation between environmental, social, and economic dimensions, as well as cultural factors, understanding sustainability as an educational project in constant construction (Sterling, 2013; UNESCO, 2017).

However, the contributions of Wals (2015) and Tilbury (2011) indicate that overly normative or instrumentalized educational approaches present significant limitations in dealing with the complexity and uncertainty of the conflicts inherent in socio-environmental issues. By prioritizing predefined answers or isolated behavioral changes, such approaches tend to diminish the formative potential of sustainability, reducing it to a set of prescriptions. In contrast, contemporary perspectives on Education for Sustainability advocate for learning experiences based on the problematization of real dilemmas, decision-making, and active participation of individuals, recognizing the indeterminate and controversial nature of environmental challenges (Tilbury, 2011).

Based on the premise, Brougère (2004) establishes that games have historically been mobilized as a didactic form capable of fostering engagement, active participation, and the construction of significant learning, especially by enabling the experimentation of rules, roles, and situations in a symbolic environment. His studies indicate that playful practices, when articulated with clear formative intentions, can broaden the processes of understanding, socialization, and reflection among those involved, overcoming a merely recreational conception of play.



This understanding had already been deepened by Huizinga (2000), for whom play constitutes a foundational cultural phenomenon of human experience, preceding culture itself and endowed with its own rules, meanings, and values. The author demonstrates that play creates a space-time distinct from everyday life, in which individuals experience norms, conflicts, and forms of social organization, giving play a serious, symbolic, and socially structuring character that goes beyond its instrumental use in the educational context.

In this sense, the Role-Playing Game (RPG), understood as games of role interpretation, is characterized by the collective construction of narratives in which participants assume characters and make decisions in a fictional world regulated by rules, producing shared actions and consequences (Fine, 2002). In the educational field, RPG has stood out as a pedagogical tool capable of articulating narratives, social interactions, and decision-making that favor experiential and situated learning processes. By enabling the simulation of complex scenarios marked by uncertainties and conflicts of interest, this approach contributes to the understanding of socio-environmental problems and to the development of skills related to critical thinking, argumentation, and risk management, central aspects for Environmental Education and sustainability (Gee, 2003; Terti *et al.*, 2019).

Given this context, the present article aims to reflect on the Role-Playing Game (RPG) as a pedagogical resource in Environmental Education, analyzing its formative potential for sustainability in the face of contemporary socio-environmental dilemmas.

2 GENERAL CONTEXTUALIZATION

2.1 Methodological Synthesis

Given the intended objective, this study is characterized as a theoretical essay, according to the conception proposed by Meneghetti (2011), understood as a type of scientific production guided by critical reflection, conceptual interpretation, and by argumentative construction, without the claim of empirical proof or statistical generalization. In this sense, the theoretical essay distinguishes itself from empirical studies by prioritizing the problematization of ideas and the elaboration of interpretive syntheses based on dialogue with different theoretical frameworks.

The adopted methodological approach is based on a critical analysis of consolidated scientific literature related to Environmental Education, sustainability, and the use of RPG in the educational context, seeking to articulate these fields in a reflective and non-prescriptive manner. In line with Meneghetti (2011), this essay does not aim to exhaust the topic, but rather to contribute to the deepening of theoretical debate by offering new readings and interpretive possibilities regarding RPG as a pedagogical tool in Environmental Education.

2.2 Gaia / Common Home / Planet Earth and the Human-Nature Relationship

The contemporary understanding of the socio-environmental crisis demands a shift from the notion of nature as a mere resource available for human exploitation to a broader, relational, and systemic reading of the planet. It is from this idea that the Gaia hypothesis, formulated by Lovelock (2006), proposes that Earth be understood as a complex self-regulating system, in which biotic and abiotic components interact dynamically, contributing to the



maintenance of conditions that make life possible. This perspective breaks with the modern mechanistic tradition, which fragmented the natural world into isolated parts and subordinated them to human instrumental rationality.

By recognizing Earth as an interdependent systemic organism, the notion of Gaia shifts humanity from the position of an external dominator to that of an integral part of a larger system, whose biophysical limits cannot be indefinitely pressured without consequences. In this sense, the contemporary ecological crisis can be interpreted as the result of a historical rupture in the human-nature relationship, consolidated mainly from the modern development project, marked by intensive exploitation of natural resources and the belief in unlimited growth (Lovelock, 2006).

Furthermore, when discussing sustainability beyond its market appropriation, Boff (2012) argues that Earth should be understood as a “Common Home,” an expression that refers to the ethical dimension of care and co-responsibility. For the author, sustainability is not restricted to economic efficiency or rational resource management; in fact, it implies the construction of a new civilizational relationship based on the interdependence between human beings and natural systems. From this perspective, current unsustainability, derived from Anthropocentrism, establishes a problem that goes beyond the technical, demonstrating a crisis of values, meaning, and belonging.

In line with this perspective, Freitas and Freitas (2016) propose understanding sustainability as an emerging paradigm, capable of reorganizing the cultural, scientific, and political foundations of contemporary society. For the authors, the environmental crisis cannot be faced from the same epistemological bases that produced it, since the modern paradigm, marked by the fragmentation of knowledge and the separation between society and nature, proved incapable of dealing with the complexity of socio-ecological systems. Such changes imply recognizing the ecological limits of the planet and reconstructing social practices based on a systemic and relational vision, overcoming the reductionist logic that historically legitimized the intensive exploitation of nature.

Furthermore, Krenak (2019), in turn, radicalizes this critique by stating that the separation between humanity and nature constitutes a modern fiction that sustains environmental devastation. For the author, the idea that human beings are “outside” the Earth determines their unlimited exploitation, converting the planet into an object of use and disposal. Recovering the relational dimension between humanity and the natural world therefore means re-enchanting the experience of belonging and breaking with the narrative of superiority that sustains the current civilizational model.

Thus, if the environmental crisis reveals a historical rupture in the relationship between humanity and Earth, and if sustainability presents itself as a horizon capable of reorienting this relationship, it becomes inevitable to ask what the role of education is in this scenario. Freitas and Freitas (2016) remind us that education, science, and technology are instances that shape social conjunctures, capable of both reinforcing and questioning the patterns that produce socio-environmental changes. From this perspective, discussing sustainability also implies revisiting the meanings attributed to citizenship and economic development, shifting them from a growth-centered logic to a more integrated understanding of the planet's ecological limits. It is in this shift that education becomes decisive, as a space for critical formation in the face of the complexity of relations between society and nature.



2.3 Sustainability and Environmental Education in the Face of Socio-Environmental Complexity

The incorporation of sustainability into the educational field results from a long historical process of problematizing the relationship between development and ecological limits. In the recent Brazilian context, the National Education Plan (Law No. 13.005/2014) establishes as a guideline the promotion of respect for human rights, diversity, and socio-environmental sustainability (BRAZIL, 2014), indicating that such principles should guide contemporary educational policies.

In this scenario, the consolidation of the concept of sustainability was also marked by the attempt to systematize its constitutive dimensions. Elkington (1994), in proposing the so-called Triple Bottom Line¹, or, in another expression, three Ps (People, Planet, Profit)², emphasizes that sustainability should be understood from the articulation between economic, social, and environmental axes, indicating that development can only be considered legitimate when it simultaneously integrates economic viability, social justice, and ecological responsibility. This formulation reinforces the idea of interdependence between these dimensions, moving away from reductionist interpretations that privilege only one of the pillars to the detriment of the others.

However, the systematization proposed by Elkington does not eliminate the deeper critique directed at the prevailing civilizational model. For Boff (2012), the contemporary form of human coexistence is shamefully unsustainable, as it does not ensure dignified living conditions for a large part of the world's population and, simultaneously, compromises the natural systems that sustain collective existence. The predominance of development oriented almost exclusively by economic growth intensifies social inequalities and pressures the planet's ecological limits, configuring a crisis that transcends environmental issues, directly harming ethical and civilizational issues.

In the same vein, Rocha (2012) highlights that sustainability cannot be reduced to an institutional slogan or a technical adjustment of the prevailing economic model. By recovering the etymological and historical meaning of the term, the author demonstrates that to sustain means to maintain the bases that guarantee the continuity of life over time, which involves intergenerational responsibility and limits to the predatory use of natural resources. Thus, when development is primarily guided by indicators of economic growth, disregarding the regenerative capacities of ecosystems and the material conditions for the survival of the most vulnerable populations, the very foundation of sustainability is broken, converting it into a discourse dissociated from practice.

The United Nations' 2030 Agenda, with its seventeen Sustainable Development Goals (SDGs), reinforces these understandings by recognizing the interdependence between poverty, education, climate, health, production, and social justice. By stating that the objectives are integrated and indivisible, the UN (2015) clarifies that sustainability demands an articulated vision of contemporary challenges. In this scenario, education assumes a singular position, being simultaneously an objective in itself and a condition for the possibility of achieving other global commitments.

¹Sustainability Tripod.

² People, Planet, and Profit.



However, the centrality attributed to education cannot be interpreted simplistically. If sustainability involves paradigmatic disputes and profound reconfigurations of rationality, Environmental Education cannot be restricted to the transmission of content or the promotion of isolated behaviors. As Sauv  (1996) warns, the articulation between Environmental Education and sustainability requires critical vigilance, so that the former is not subsumed by technocratic or instrumentalized discourses of the latter. Socio-environmental complexity demands formative processes capable of dealing with uncertainties, conflicts of interest, and ethical dilemmas that permeate collective decisions.

Thus, Environmental Education, when understood in light of sustainability as a paradigm, takes on the challenge of forming individuals capable of interpreting the interdependence between natural and social systems, questioning development models, and actively participating in necessary transformations (Roos; Becker, 2012; Mendon a, Telino Junior e Neves, 2024). It is within this horizon of complexity that the need arises to conceive pedagogical strategies that transcend the transmissive logic and allow for the experience of real or simulated problematic situations, a movement that opens space for reflection on formative mechanisms capable of materializing such principles.

Therefore, overcoming the fragmentation of knowledge becomes a condition for Environmental Education to adequately respond to contemporary socio-environmental challenges. As discussed by Pereira (2021) and also seen by Domingues, Cavalcante, Appleyard and Moura (2025), transdisciplinarity and participatory methodologies constitute pedagogical pathways capable of articulating different dimensions of reality, promoting formative experiences that involve dialogue, problematization, and the collective construction of knowledge. In this context, practices that mobilize interaction, decision-making, and the experience of complex situations, such as games, prove consistent with the need to integrate multiple perspectives in the critical formation of individuals capable of understanding and making sustainability credible.

2.4 Play and Society from Huizinga's Perspective

In investigating the nature of play, Huizinga (2000) starts from a fundamental proposition that play is not merely an ornament of culture, nor a simple recreational activity subordinate to "serious" life. On the contrary, the author maintains that culture emerges and develops in the form of play. Before being an instrument, play is a condition; before being merely a resource, it is structure. This inversion profoundly shifts the traditional understanding that reduces the playful to childhood or entertainment, repositioning it at the center of human experience.

For Huizinga (2000), play exhibits formal characteristics that distinguish it from everyday life, although it is never completely separate from it. It is a voluntary activity, freely undertaken, but one that, once initiated, imposes strict adherence to rules on the player. This apparent tension between freedom and norm constitutes one of its essential features, as play is free because no one is obliged to play; however, within the playful space, its rules are absolute. The violation of these rules breaks the game itself, dissolving the temporary world it institutes.

This delimitation leads to the notion of a specific space-time of play, often described as a "magic circle." Play draws symbolic boundaries that distinguish it from common life,



establishing a temporary reality endowed with specific meaning. Within this circumscribed space, particular forms of order, tension, and expectation emerge. The uncertainty regarding the outcome, the challenge, the risk, and the possibility of victory or defeat lend play an intensity that distances it from triviality. Even when presenting itself with a light appearance, play carries an internal seriousness that cannot be ignored (Huizinga, 2000).

The dimension of order is particularly central to Huizinga's (2000) analysis. Play creates order and is order. It establishes limits, rules, and forms of organization that must be observed for its structure to be maintained. In this sense, play reveals itself to be profoundly formative of social patterns, as it introduces participants to normative experiences. It is not merely about following external rules, but about experiencing the constitution of a regulated system, in which each action produces consequences recognized by the collective.

This playful structure is not limited to activities traditionally recognized as games. Huizinga (2000) demonstrates that playful elements permeate fundamental spheres of culture, such as law, war, religion, poetry, and politics. The court, for example, carries ritualistic traits that approximate play, as it possesses defined rules, specific roles, formalized language, and a delimited space in which conflict is staged and resolved symbolically. Similarly, athletic competitions, oratorical disputes, and even military confrontations present playful components insofar as they operate under codes, rituals, and collective recognition.

In poetry and art, play manifests itself in the symbolic manipulation of language, the creation of imaginary worlds, and the experimentation with forms. Cultural production itself, in this sense, is not established merely as a utilitarian response to material needs, but as a symbolic expression structured by shared conventions. Culture, for Huizinga (2000), does not arise exclusively from work or survival, but from the playful impulse that allows for experimenting, representing, and symbolizing reality.

This concept leads to a relevant consequence: play is not an escape from social life, but one of its structuring foundations. By creating temporary worlds governed by rules, play offers models of organization, forms of interaction, and patterns of collective recognition. It teaches how to deal with norms, accept limits, confront conflicts, and understand the coexistence between freedom and responsibility. The playful experience, therefore, participates in the formation of the very cultural bases that sustain life in society (Huizinga, 2000).

However, the author also warns that modernity tends to diminish the playful spirit by subjecting play to exclusively utilitarian or economic ends. When competition becomes merely calculation or when playfulness is excessively instrumentalized, part of its formative capacity is lost. Play ceases to be an autonomous symbolic space to become a functional mechanism, dissolving its deeper cultural dimension.

In this way, understanding play as a foundational cultural phenomenon implies recognizing it as an instance of meaning creation, symbolic ordering, and social organization. If culture develops in the form of play, as Huizinga (2000) maintains, then playful practices are not external to social structures, but constitutive of them. This understanding opens space for broader questions about the ways in which contemporary societies structure their conflicts, norms, and processes of collective formation, a question that becomes particularly relevant when considering the complexity of the challenges that permeate contemporary social life, especially those that highlight the tension between civilizational models, social organization, and the limits of the planet itself.



2.5 Role-Playing Game (RPG) as a Pedagogical Resource in Environmental Education

Among the multiple modalities of play that permeate human experience, the Role-Playing Game (RPG) occupies a singular position by radicalizing the interpretive and narrative dimension of the playful phenomenon. As Fine (2002) analyzes, unlike games focused exclusively on competition or technical challenge resolution, RPG is structured around the assumption of roles in a shared fictional universe, where rules, plots, and decisions are collectively negotiated. This dynamic organizes a recreational activity and constitutes its own "social world," in which identities are continuously mobilized, framed, and redefined.

For Fine (2002), by making explicit the alternation between person, player, and character, RPG makes visible interactional mechanisms that also operate in daily life, demonstrating that the performance of roles and the symbolic construction of meanings are not restricted to the game space but integrate social organization itself.

This configuration is close to Huizinga's (2000) understanding, for whom play institutes its own order, delimited by rules that, once accepted, assume a binding character, that is, imposing itself as a condition for the maintenance of the game itself. In RPG, this order is not limited to normative obedience, but organizes a system of symbolic relations in which roles, conflicts, and alliances are enacted under shared conventions. If, as Caillois (2001) maintains, the category of mimicry³ corresponds to the dimension of play based on simulation and representation, RPG intensifies this logic by structuring itself precisely on character interpretation, further articulating elements of *agôn*⁴, insofar as it involves disputes and tensions, and *alea*⁵, when uncertainty is mediated by probabilistic systems. Thus, RPG brings together, in a single playful experience, representation, conflict, and contingency, forming a particularly complex form of social interaction.

Beyond its performative dimension, RPG also constitutes a formal system of rules. As Salen and Zimmerman (2004) argue, games can be understood as systems in which meaning emerges from the interaction between participants and previously established normative structures. In the case of RPG, although the narrative is collectively constructed, it does not develop arbitrarily; on the contrary, it is organized by regulatory mechanisms that delimit possibilities of action and establish consequences. The presence of a narrator or game master, as well as the recourse to systems for resolving conflicts and probabilities, gives RPG a structural architecture that sustains the fictional experience. In this way, the social world described by Fine (2002) goes beyond the merely performative, revealing itself also as systemically organized, articulating interpretive freedom and normative regulation.

In view of the foregoing, if RPG constitutes a structured social world, in which roles are assumed, rules are internalized, and conflicts are enacted under shared conventions, it becomes pertinent to inquire what formative implications this symbolic architecture can assume when situated in the field of Environmental Education. Can a regulated fictional space allow for the

³It corresponds to the category of games based on simulation and representation, being activities in which the participant assumes roles or enacts fictional situations, producing a temporary imaginary reality.

⁴It designates the category of games structured around competition in which participants dispute under previously established rules.

⁵It refers to games based on luck or chance, in which the outcome does not predominantly depend on the participants' skill, but on contingent elements such as dice, cards, or draws.



experimentation of roles, along with the problematization of the rules that organize concrete social life? And, if play reveals interactional mechanisms that structure society, could it also make visible the power relations, the interests in dispute, and the development projects that are linked to the socio-environmental crisis?

These questions approach the Critical Environmental Education (CEE) perspective defended by Loureiro (2004), for whom environmental education is not limited to behavioral change, but implies a historical and political understanding of society-nature relations. From this perspective, environmental education means denaturalizing structures, explicating conflicts, and recognizing that the ecological crisis is also an expression of social inequalities and societal projects.

From this perspective, RPG shifts the participant from the position of observer to that of an agent involved in a narrative that demands positioning. If, for Loureiro (2004), CEE demands a historical and political understanding of society-nature relations, the interpretive dynamics of the game (Fine, 2002) calls upon individuals to act within conflicts presented as situations requiring situated choices. By assuming roles embedded in distinct projects and interests, participants can challenge the naturalization of the current order, realizing that the socio-environmental crisis results from historically constructed disputes and decisions.

In this same direction, research that mobilizes RPG in the field of Environmental Education reinforces the relevance of this articulation. Terti *et al.* (2019) demonstrate that the simulation of socio-environmental scenarios through role-playing favors the problematization of conflicts and collective decision-making, while initiatives such as those described by Barab *et al.* (2007) demonstrate that immersive narrative environments can mobilize critical engagement in concrete socio-environmental problems. Such experiences indicate that RPG, when guided by formative intentionality, can operate as a pedagogical resource consistent with the tenets of Critical Environmental Education.

In light of these discussions, RPG proves particularly consistent with the formative requirements outlined by Sauv  (1996) and Pereira (2021). If Environmental Education requires critical vigilance against simplistic discourses and demands participatory processes capable of integrating multiple dimensions of reality, the interpretive and collective dynamics of RPG (Fine, 2002) offers a space where different perspectives can be listed under shared rules. By articulating narrative, participation, and negotiation of meanings, the role-playing game does not fragment the socio-environmental debate, but stages it in its relational complexity, approaching the transdisciplinary and problematizing proposal that supports education for sustainability.

In this context, discussing RPG in the field of Environmental Education means recognizing its potential to problematize hegemonic narratives about development and sustainability, contributing to the formation of individuals capable of critically understanding and intervening in the disputes that shape the society-nature relationship.

3 FINAL THOUGHTS

Throughout this theoretical essay, we sought to reflect on Role-Playing Game (RPG) as a pedagogical tool in the field of Environmental Education, analyzing its formative potential in the face of the complexity of contemporary socio-environmental dilemmas. It started from the



recognition that the planetary crisis is not limited to a set of isolated environmental problems, but expresses historical, political, and civilizational tensions that demand educational processes capable of problematizing the society-nature relationship.

The articulation between the conceptions of play as a cultural phenomenon, of RPG as a structured social world, and of CEE as the formation of ethical subjects allowed us to demonstrate that the role-playing game goes beyond a merely motivational or recreational function. By establishing a space regulated by rules, yet open to the negotiation of meanings, RPG creates conditions for the symbolic experience of conflicts, disputes of interest, and decision-making, approaching the formative demands outlined by sustainability as a paradigm.

In this context, RPG proves to be consistent with participatory and transdisciplinary approaches to Environmental Education, as it enables the experimentation of social roles, the explication of societal projects in dispute, and the understanding that the socio-environmental crisis is traversed by power relations, inequalities, and historically constructed choices. By shifting the individual from the position of content receiver to that of an agent involved in narratives that demand positioning, the role-playing game contributes to the formation of a critical consciousness guided by information and reflection.

As this is a theoretical essay, this study did not intend to present conclusive empirical evidence, but rather to offer an argumentative synthesis that supports the relevance of RPG as a pedagogical strategy within the scope of Environmental Education. Thus, it is pointed out as a necessary development the realization of empirical investigations that analyze the concrete application of role-playing games in different educational contexts, evaluating their formative impacts and their limits. By recognizing the game as a structuring cultural instance and RPG as a space for staging social conflicts, its potential to contribute to the formation of individuals capable of critically understanding and intervening in the challenges that mark sustainability in the 21st century is reaffirmed.

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STATEMENTS

CONTRIBUTION OF EACH AUTHOR

When describing each author's participation in the manuscript, use the following criteria:

- **Conception and Design of the Study:** Jhottan Emanuel Gregorio Almeida;
- **Data Curation:** Jhottan Emanuel Gregorio Almeida; Máriam Trierweiler Pereira.
- **Formal Analysis:** Jhottan Emanuel Gregorio Almeida;
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DECLARATION OF CONFLICTS OF INTEREST

I/We, **Jhottan Emanuel Gregorio Almeida, Maria Eduarda Cardozo and Máriam Trierweiler Pereira**, declare that the manuscript entitled "**Role-Playing Game (RPG) and Environmental Education: paths in the face of sustainability paradigms - a theoretical essay**":

1. **Financial Ties:** Has no financial ties that could influence the results or interpretation of the work. No institution or funding entity was involved in the development of this study.
2. **Professional Relationships:** Has no professional relationships that may impact the analysis, interpretation or presentation of the results. No professional relationship relevant to the content of this manuscript has been established.
3. **Personal Conflicts:** Has no personal conflicts of interest related to the content of the manuscript. No personal conflicts related to content were identified.