

**LEARNING ASSESSMENT, CURRICULUM, AND PERTINENT PLANNING:
AN ECOTRANSCOMPLEX READING**

**AVALIAÇÃO DA APRENDIZAGEM, CURRÍCULO E PLANEJAMENTO PERTINENTE:
UMA LEITURA ECOTRANSCOMPLEXA**

**EVALUACIÓN DEL APRENDIZAJE, CURRÍCULO Y PLANIFICACIÓN PERTINENTE:
UNA LECTURA ECOTRANSCOMPLEJA**

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Abstract:

This article aims to analyze, in light of ecotranscomplexity, learning assessment as a feedback movement for the curriculum and pertinent planning, highlighting its contributions to the qualification of the educational process in Basic Education. This is a theoretical-analytical study, with a qualitative approach and a propositional character, grounded in the assumptions of complexity, transdisciplinarity, and ecoformation. The discussion is based on the understanding that curriculum, planning, and assessment are not isolated stages, but interdependent dimensions of the same formative process. Initially, the relationship between the National Common Core Curriculum, subnational curricula, and the school curriculum plan is problematized, highlighting the tension between prescription and contextualization. Next, pertinent planning is analyzed as a mediation among curriculum, subjects, territory, and learning assessment. Subsequently, assessment is discussed beyond classificatory and measurement-based logic, being understood as a diagnostic, processual, interpretative, and feedback-oriented practice. As an authorial contribution, an ecotranscomplex matrix of reconnection among curriculum, planning, and assessment is proposed, organized into an internal/nuclear dimension, composed of curriculum, pertinent planning, and learning assessment, and an external/expanded dimension, constituted by replanning and the lived curriculum. It is concluded that learning assessment, when assumed from an ecotranscomplex perspective, interprets what has been lived, tensions what has been planned, and guides what is yet to come, favoring more pertinent, integrative, and transformative pedagogical practices.

Keywords: learning assessment; curriculum; pertinent planning; ecotranscomplexity; basic education.

Resumo:

Este artigo tem como objetivo analisar, à luz da ecotranscomplexidade, a avaliação da aprendizagem como movimento retroalimentador do currículo e do planejamento pertinente, destacando suas contribuições para a qualificação do processo educativo na Educação Básica. Trata-se de um estudo teórico-analítico, de abordagem qualitativa e caráter propositivo, ancorado nos pressupostos da complexidade, da transdisciplinaridade e da ecoformação. A

discussão parte da compreensão de que currículo, planejamento e avaliação não se constituem como etapas isoladas, mas como dimensões interdependentes de um mesmo processo formativo. Inicialmente, problematiza-se a relação entre a Base Nacional Comum Curricular, currículos subnacionais e plano curricular da escola, evidenciando a tensão entre prescrição e contextualização. Em seguida, analisa-se o planejamento pertinente como mediação entre currículo, sujeitos, território e avaliação da aprendizagem. Na sequência, discute-se a avaliação para além da lógica classificatória e mensuradora, compreendendo-a como prática diagnóstica, processual, interpretativa e retroalimentadora. Como contribuição autoral, propõe-se uma matriz ecotranscomplexa de religação entre currículo, planejamento e avaliação, organizada em dimensão interna/nuclear, composta por currículo, planejamento pertinente e avaliação da aprendizagem, e dimensão externa/ampliada, constituída pelo replanejamento e pelo currículo vivido. Conclui-se que a avaliação da aprendizagem, quando assumida em chave ecotranscomplexa, interpreta o vivido, tensiona o previsto e orienta o porvir, favorecendo práticas pedagógicas mais pertinentes, integradoras e transformadoras.

Palavras-chave: avaliação da aprendizagem; currículo; planejamento pertinente; ecotranscomplexidade; educação básica.

Resumen:

Este artículo tiene como objetivo analizar, a la luz de la ecotranscomplejidad, la evaluación del aprendizaje como movimiento retroalimentador del currículo y de la planificación pertinente, destacando sus contribuciones a la cualificación del proceso educativo en la Educación Básica. Se trata de un estudio teórico-analítico, de enfoque cualitativo y carácter propositivo, anclado en los presupuestos de la complejidad, la transdisciplinariedad y la ecoformación. La discusión parte de la comprensión de que currículo, planificación y evaluación no se constituyen como etapas aisladas, sino como dimensiones interdependientes de un mismo proceso formativo. Inicialmente, se problematiza la relación entre la Base Curricular Nacional Común, los currículos subnacionales y el plan curricular de la escuela, evidenciando la tensión entre prescripción y contextualización. A continuación, se analiza la planificación pertinente como mediación entre currículo, sujetos, territorio y evaluación del aprendizaje. Seguidamente, se discute la evaluación más allá de la lógica clasificatoria y mensuradora, comprendiéndola como práctica diagnóstica, procesual, interpretativa y retroalimentadora. Como contribución autoral, se propone una matriz ecotranscompleja de religación entre currículo, planificación y evaluación, organizada en una dimensión interna/nuclear, compuesta por currículo, planificación pertinente y evaluación del aprendizaje, y una dimensión externa/ampliada, constituida por la replanificación y el currículo vivido. Se concluye que la evaluación del aprendizaje, cuando es asumida en clave ecotranscompleja, interpreta lo vivido, tensiona lo previsto y orienta el porvenir, favoreciendo prácticas pedagógicas más pertinentes, integradoras y transformadoras.

Palabras clave: evaluación del aprendizaje; currículo; planificación pertinente; ecotranscomplejidad; educación básica.

Introduction

Contemporary discussions on Basic Education have highlighted the need to understand curriculum, planning, and assessment of learning as interconnected dimensions of the educational process. Although these fields often appear separate in educational policies, guiding documents, and school practices, they are intertwined in the organization of the pedagogical experience. The curriculum expresses educational intentions and conceptions of knowledge, the individual, and society; planning organizes situated pedagogical interventions; and assessment interprets evidence regarding learning trajectories, progress, difficulties, and opportunities for reorienting teaching practice.

This understanding aligns with Morin's (2013, p. 37) complex thinking, according to whom "it is necessary to reconstitute the whole," especially when seeking to overcome fragmented interpretations of knowledge and human development. From this perspective, curriculum, planning, and assessment are not isolated stages but interdependent dimensions of a dynamic whole. When dissociated, they tend to lead to oversimplifications: the curriculum may be treated as a list of content or skills; planning, as a bureaucratic record; and assessment, as a mechanism for verification, classification, or measurement.

In the Brazilian context, the implementation of the National Common Core Curriculum (BNCC) (Brasil, 2018) has intensified debates about curriculum, school autonomy, and the reorganization of curriculum plans. The transition from the BNCC to subnational curricula and to everyday school life, however, does not occur in a linear or neutral manner. Pereira Filha and Costa (2020) indicate that this relationship involves processes of curricular appropriation and reframing, while more recent studies also highlight tensions between national mandates, the contextualization of curricula, and teacher participation in their development (Olmedo; Gondin; Machado, 2024).

Gonçalves, Machado, and Correia (2020) contribute to the discussion by highlighting the distinction between planning developed "for" the school and planning developed "with" those involved in educational practice. Thus, the prescribed curriculum gains pedagogical meaning when interpreted in dialogue with the political-pedagogical project, the local context, the stakeholders, and learning needs. In this vein, Brunieri (2024) emphasizes that the curricular organization proposed by the BNCC does not, in and of itself, ensure the integration of knowledge, requiring pedagogical interventions that facilitate its articulation within the school context.

In this context, relevant planning plays a mediating role, as it transforms curricular guidelines into context-specific pedagogical decisions. Zwierewicz *et al.* (2024, p. 1), in discussing co-creation strategies for relevant planning in Basic Education, highlight “the link between planning and local and global realities,” the participation of the external community, and teacher training as a process of reflection and co-creation.

Thus, relevant planning can be understood as a practice open to the reality of the school, to the emergencies of daily life, and to the evidence generated in the educational process. Furthermore, by contextualizing pedagogical actions through the articulation of curricular content with students’ living conditions and global challenges, it takes on a transdisciplinary character, fostering reflection on situated problems as well as the development of solutions and interventions aimed at transforming reality and addressing uncertainties (Zwierewicz, 2023).

The assessment of learning, the central focus of this article, is understood as more than just a final step in verifying results. In light of complexity, assessment involves interpreting processes, recognizing unique characteristics, understanding difficulties, analyzing progress, and generating insights to reorient pedagogical practice. From this perspective, Santos and Moreira (2024) highlight formative assessment as a process that provides information about learning and supports the regulation of teaching and the reorganization of teaching practice. Vidal and Pinho (2020, p. 572) contribute to this understanding by noting that the assessment of learning, in light of complexity, takes on a “relational, dialogic, open, and integrative character.” This interpretation helps us understand that the practice of assessment is not limited to the technical verification of results but is linked to relationships, contexts, and multiple dimensions of learning.

This discussion is also shaped by large-scale external assessments, which can provide relevant indicators for educational diagnosis and the formulation of public policies. However, when their results take on excessive prominence, they can lead to a narrowing of the curriculum, a focus solely on test preparation, and a predominant emphasis on quantitative aspects, as highlighted by Almeida (2020), Alvernaz, Souza, and Henrique (2021), and Lima and Santos (2024). For this reason, external indicators take on greater pedagogical meaning when analyzed in dialogue with internal assessment, teacher planning, and the concrete conditions of the school.

In this context, ecocomplexity emerges as a fruitful perspective for considering the reconnection between curriculum, relevant planning, and the assessment of learning. This approach integrates complex thinking (Morin, 2003, 2011, 2013, 2015), transdisciplinarity (Nicolescu, 2018), and ecoformation (Pineau, 2004), fostering a situated, multidimensional, and

relational understanding of Basic Education. This perspective is relevant to the present article because it allows for shifting assessment from a terminal function to a relational one, capable of producing evidence regarding how the curriculum and planning are implemented in everyday school life. Curricular reorganization from an ecotranscomplex perspective, as proposed by Prigol, Zwierewicz, and Silva (2025, p. 1), broadens the debate toward a curricular vision guided by an “epistemological and pedagogical matrix that seeks to reconnect forms of knowledge” and integrate the “cognitive, ethical, affective, spiritual, and ecological” dimensions of human development.

Although studies exist on the BNCC, subnational curricula, relevant planning, external assessments, internal assessments, and ecotranscomplexity, it remains important to delve deeper into literature that integrates these dimensions around the assessment of learning—understood as a feedback loop for the curriculum and relevant planning. This gap justifies the present article, as it shifts assessment from a finalistic position to a strategic one within the educational process: assessing in order to understand, replan, and thereby enhance pedagogical practice.

In light of this, this article begins with the following question: How can the assessment of learning, understood in the light of ecotranscomplexity, serve as a feedback loop for the curriculum and relevant planning, thereby fostering more relevant, inclusive, and transformative pedagogical practices in Basic Education? The objective is to analyze, in light of ecotranscomplexity, the assessment of learning as a feedback mechanism for the curriculum and relevant planning, highlighting its contributions to the improvement of the educational process in Basic Education.

This is a theoretical-analytical study with a qualitative approach and a propositional nature, grounded in a line of research on ecocomplexity, curriculum, and relevant planning. To bring the debate up to date—especially in the context following the implementation of the BNCC—recent scholarly works are drawn upon to inform the reorganization of subnational curricula and the intensifying discussions on external assessment, internal assessment, and assessment of learning.

This article argues that the assessment of learning, when understood as a diagnostic, interpretive, and feedback-oriented practice, can move beyond merely occupying a finalistic role in the educational process and instead become an integral part of the dynamic construction of the lived curriculum and teacher planning. From this perspective, assessment means making sense of learning, understanding processes, recognizing individual differences, and creating conditions for the reorientation of pedagogical practices.

Methodology

This article is a theoretical-analytical study with a qualitative approach and a propositional nature. The choice of this approach stems from the objective of analyzing the assessment of learning as a feedback mechanism for the curriculum and related planning, considering its contributions to the improvement of the educational process in Basic Education.

The methodological framework draws on the work of Morin (2003, 2011, 2013, 2015), particularly in its understanding of the method as an open and nonlinear strategy capable of addressing the relationships, uncertainties, recursions, and emergent phenomena that characterize the educational phenomenon. From this perspective, curriculum, planning, and assessment are not viewed as isolated entities, but as interdependent dimensions of a dynamic school reality, situated within and interwoven by multiple relationships.

This understanding is in line with Moraes (2025), who argues that educational research guided by the epistemology of complexity requires coherence among paradigm, epistemology, and method. Thus, the methodological approach adopted in this article emphasizes an interpretive, relational, and propositional analysis, consistent with an approach that recognizes the multidimensional nature of educational phenomena and the impossibility of understanding them through linear or fragmented interpretations.

The study is grounded in a research trajectory dedicated to complex thinking, transdisciplinarity, ecoformation, the ecotranscomplex curriculum, and relevant planning. This trajectory constitutes the theoretical foundation from which the study proposes to shift the assessment of learning from a finalistic, classificatory, or predominantly measurement-based logic toward a diagnostic, interpretive, and feedback-oriented understanding of the educational process.

To bring the debate up to date, scientific works published between 2020 and 2026 are drawn upon as recent contributions to the discussion, especially in light of contemporary tensions between the prescribed curriculum, the lived curriculum, instructional planning, external assessment, internal assessment, and learning assessment. These works are not the subject of a systematic or integrative review; rather, they are used as theoretical references that help contextualize the problem under investigation and support the proposed analysis.

The analytical framework is organized into three complementary phases: i) the first examines the fragmentation between curriculum, planning, and assessment of learning, drawing on the need to reconnect the parts with the whole in the educational process; ii) the second analyzes tensions present in Basic Education, especially those related to the BNCC, subnational

curricula, the school's curriculum plan, and internal and external assessment practices; iii) and the third takes a proactive approach by discussing the assessment of learning as a feedback mechanism for the curriculum and relevant planning, highlighting the contributions of ecotranscomplexity to the enhancement of the educational process.

Thus, the methodology adopted seeks consistency with the article's central thesis; for if the assessment of learning is understood as a recursive process—capable of challenging the lived curriculum and reorienting relevant planning—the methodological approach is also organized according to a relational, interpretive, and nonlinear logic. Thus, the analysis does not artificially separate curriculum, planning, and assessment, but seeks to understand them in terms of their interdependencies, recognizing that each dimension contributes to the constitution of the others.

Finally, by linking Morin (2003, 2011, 2013, 2015) and Moraes (2025) to discussions on ecotranscomplexity, curriculum, relevant planning, and the assessment of learning, this article values theoretical production as a legitimate form of educational research, especially when guided by a current problem and an epistemological foundation committed to reconnecting knowledge, subjects, contexts, and pedagogical practices.

Discussion

The discussion of learning assessment as a process that provides feedback for the curriculum and relevant planning implies understanding the curriculum as a field of choices, disputes, interpretations, and mediations. From this perspective, the curriculum constitutes a political-pedagogical construct that involves educational choices, disputes over meaning, ways of organizing knowledge, and relationships between schools, individuals, and society. This understanding aligns with the thinking of Moraes (2008, p. 176), for whom the “curriculum is the school's identity document,” as it reveals its trajectory, theoretical choices, objectives, principles, and methodologies. Pereira Filha and Costa (2020, p. 228) also point out that the curriculum involves dimensions that “are not merely content or test scores,” as it also includes pedagogical practices, the school's social function, institutional organization, prescriptions, omissions, and modes of meaning-making.

Curriculum, BNCC, and School Curriculum Plan

In the Brazilian context, the BNCC has taken center stage in curriculum policies by identifying essential learning outcomes for Basic Education, driving the reorganization of state and municipal curricula and the revision of school curriculum plans. According to Pereira Filha and Costa (2020, p. 229), “the BNCC compels all education systems to rethink their curricula,” which highlights its power as a curriculum policy. However, the transition from the BNCC to subnational curricula and, subsequently, to everyday school life does not occur in a linear, automatic, or neutral manner. This reframing requires taking into account “the knowledge and specific characteristics of each region/locality” (Pereira Filha; Costa, 2020, p. 230), so that national guidelines are contextualized through dialogue with local communities and with schools’ educational projects.

Along the same lines, Gonçalves, Machado, and Correia (2020) analyze the BNCC based on the tension between “planning for” and “planning with.” This distinction highlights that curriculum policies can be implemented in different ways. When “planning for” prevails, the curriculum tends to adopt a top-down, prescriptive approach that is external to those engaged in pedagogical practice. “Planning with,” on the other hand, points to the possibility of a collective, dialogic, and contextualized construction, in which teachers, students, and the school community participate in the creation of meaning within the curriculum. This understanding allows us to affirm that the BNCC can guide shared learning, but its pedagogical impact depends on the mediations that take place in local communities and schools.

Silva and Paula (2021, p. 712) note that a significant portion of the curricula analyzed showed a “low degree of adherence to the Framework,” which reinforces the understanding that subnational curricula are not limited to the automatic reproduction of the BNCC. They may involve varying degrees of alignment, reproduction, adaptation, or contextualization in relation to the Framework, revealing that curriculum policies are reinterpreted within the contexts in which they are implemented. This observation is important for avoiding a simplistic interpretation of the curriculum, as if official guidelines were automatically translated into pedagogical practices.

The prescribed curriculum, as found in official documents, defines common references, expectations, and guidelines. However, the curriculum as experienced in schools is constituted by the concrete relationships between teachers, students, knowledge, time, space, cultures, institutional conditions, and assessment practices. Therefore, between the document and

practice lies a complex field of pedagogical decisions, disputes over meaning, and educational choices.

This mediation becomes even more relevant because, according to the analysis by Silva and Paula (2021, p. 714), the relationship between the BNCC and subnational curricula “has led to impasses and misunderstandings in curriculum design, particularly regarding the distinction between prescriptive requirements and guidelines.” Thus, the school’s curriculum plan takes on special significance in mediating between the broader guidelines of educational policies and the concrete needs of the school community.

From this perspective, the school’s curriculum plan is understood as more than a mere transposition of the BNCC or the state curriculum into an annual sequence of content. Its function is to interpret curricular guidelines in light of the school’s political-pedagogical project, the characteristics of the students, institutional conditions, local demands, and the educational goals adopted by the school, considering that the relationship between the BNCC and subnational curricula involves processes of reinterpretation and contextualized mediation (Pereira Filha; Costa, 2020; Silva; Paula, 2021).

In this vein, Moraes (2008, p. 176) views the curriculum as “an instrument for implementing the school’s overarching vision,” which reinforces its political-pedagogical role in organizing educational work. Thus, the curriculum plan organizes educational goals, defines priorities, integrates areas of knowledge, guides teaching practices, and establishes ways to monitor learning.

In light of Morin’s (2003, 2011, 2013, 2015) complex thinking, this curricular mediation can be understood in terms of the relationship between the part and the whole. The BNCC, subnational curricula, school plans, teacher planning, and assessments constitute parts of a broader curricular system. However, none of these elements, taken in isolation, fully captures the educational process. The BNCC influences subnational curricula; these guide school plans; school plans inform teacher planning; and pedagogical and assessment practices reveal how the curriculum is experienced, appropriated, or challenged within the school. This complexity thus helps us understand that the curriculum is not organized through a simple linear sequence, but rather through recursive, complementary, and sometimes contradictory relationships.

This interpretation is relevant because the lived curriculum not only results from curricular prescriptions but also challenges them through the realities of everyday school life. In teachers’ choices, in the actual conditions of teaching, in the ways students participate, and in the responses generated during the learning process, elements emerge that can influence planning, the school’s curriculum, and the very interpretation of official guidelines. In

discussing the networked curriculum, Moraes (2008, p. 198) states that in it “everything is processual, unfinished, and provisional,” which reinforces the understanding that the curriculum consists of processes of interpretation, reorganization, and feedback. In this regard, the assessment of learning gains relevance not by reiterating its role as a means of verification, but by producing evidence about the lived curriculum, thereby allowing us to understand what emerges from the school setting to reorient pedagogical and curricular decisions.

The ecotranscomplex perspective helps to deepen this discussion by understanding curricular contextualization as a process of reconnecting knowledge, subjects, territories, and educational goals. Prigol, Zwierewicz, and Silva (2025, p. 1) define the ecotranscomplex curriculum as an “epistemological and pedagogical matrix that seeks to reconnect forms of knowledge,” which reinforces the view of the curriculum as a living, recursive process shaped by the evidence generated through pedagogical and assessment practices.

From this perspective, the ecotranscomplex curriculum does not deny the importance of official documents but questions their absolutization. The BNCC, state curricula, and school curriculum plans serve as important references, provided they are understood as elements open to contextualization, dialogue, and reinterpretation. This understanding aligns with Moraes’s (2008, p. 198) argument regarding the need for a “curriculum open to life, to what happens in the world, in the environment, and in the surrounding community.” Thus, essential learning gains greater pedagogical meaning when it engages with real-world problems, students’ experiences, local and global realities, and the human, social, and planetary purposes of education.

Thus, discussing the BNCC, subnational curricula, and school plans—between prescriptive guidelines and contextualization—means recognizing a broad field of mediations. In other words, curricular prescriptions can provide guidance but do not replace pedagogical interpretation; contextualization can broaden meanings, especially when linked to pedagogical intent and educational commitment; and the school’s curriculum plan can organize learning pathways, provided it remains open to the evidence generated in everyday educational practice. This understanding sets the stage for a discussion of relevant planning, as it is through this process that curricular guidelines are transformed into situated pedagogical decisions that can be reoriented.

Relevant planning: mediation between curriculum and assessment

The discussion regarding the BNCC, subnational curricula, and school plans highlights that curricular guidelines only become educational practice when they undergo processes of interpretation, contextualization, and pedagogical mediation. It is in this context that instructional planning plays a central role, as it transforms curricular references into situated pedagogical pathways, shaping choices regarding knowledge, timing, strategies, participants, contexts, and methods for monitoring learning. When reduced to an administrative requirement, this planning loses its educational potential and tends to separate the curriculum, pedagogical practice, and assessment as if they were independent stages.

Based on Morin (2003, 2011, 2013, 2015), planning can be understood as an open strategy capable of articulating intentionality, context, and uncertainty, rather than a simple, linear application of curricular guidelines. Applied to planning, this perspective highlights that pedagogical decisions take on meaning when linked to the curriculum, the individuals involved, and the concrete conditions of the school. The choice of content, methodologies, assessment strategies, resources, and school schedules gains meaning when it engages with the goals of education, the curriculum, the concrete conditions of the school, the individuals involved, and the challenges of the local community. Planning, therefore, involves operating within a field marked by relationships, uncertainties, and possibilities.

This understanding aligns with the contributions of Moraes (2025), especially when the author challenges linear, closed, and fragmented educational perspectives, pointing to the need to understand educational processes as dynamic, relational, and open to emergence, since education involves movement, interaction, unpredictability, and reorganization—aspects that also permeate instructional planning. This understanding helps us to conceive of planning as a practice that is responsive to the emergent situations of everyday school life, to the concrete conditions of the school, and to the evidence generated throughout the educational journey.

Within this framework, the notion of relevant planning takes on its full significance. Zwierewicz *et al.* (2024, p. 2) advocate a shift from a prescriptive and bureaucratic logic to “collaborative and relevant planning,” capable of aligning teaching practice with local and global demands. This perspective does not reject curriculum documents but reinterprets them based on the concrete needs of the school and the educational community. Thus, relevant planning serves as a bridge between the prescribed curriculum and the lived curriculum, as it transforms general guidelines into situated pedagogical pathways.

The relevance of planning is enhanced when it fosters “local and global connections” (Zwierewicz *et al.*, 2024, p. 3), linking curricular content, the local context, and contemporary challenges. This dual requirement prevents both the mechanical reproduction of the BNCC or state curricula and improvisation that is disconnected from educational goals. Relevant planning involves asking what to teach, why to teach it, to whom, in what context, through what mediations, and with what evidence of learning. Thus, these questions shift planning from a technical logic to a pedagogical, ethical, and formative logic.

A central aspect of the contributions by Zwierewicz *et al.* (2024) is the emphasis on co-creation. Relevant planning is neither a solitary act by the teacher nor a top-down imposition of external documents. It is strengthened when developed in dialogue with teachers, students, administrators, the school community, and the local community. Co-creation broadens our understanding of reality, integrates different forms of knowledge, fosters the recognition of significant problems, and contributes to pedagogical proposals that are more closely aligned with local and global demands.

In this sense, planning with students does not imply a lack of intentionality or a loss of teacher responsibility. On the contrary, it requires pedagogical clarity to integrate active listening, mediation, curricular knowledge, and a critical analysis of reality. From this perspective, students are no longer viewed merely as recipients of the curriculum but are recognized as active participants in the educational process. This is because their experiences, questions, interests, challenges, and ways of understanding the world provide important elements for organizing more relevant pedagogical practices.

The relationship with the local context is also fundamental to this type of planning. In this context, the local context is not limited to geographical space alone, as it also encompasses the social, cultural, environmental, economic, and historical relationships that permeate the lives of students and the school. By considering the territory in this way, planning broadens and deepens the relationship between the curriculum and reality, enabling academic knowledge to engage with concrete problems, community experiences, socio-environmental challenges, and contemporary demands. This perspective brings planning closer to ecoformation by recognizing that human formation is constituted by the individual’s relationships with oneself, with others, with society, with nature, and with life, within a dynamic that articulates self-formation, heteroformation, and ecoformation (Pineau, 2004; Schaefer *et al.*, 2025).

Schaefer *et al.* (2025, p. 1) emphasize that co-creation processes help link the “curriculum to locally relevant issues,” bringing together pedagogical practices, the local context, and global challenges. This connection makes it clear that planning is not limited to

the internal organization of the classroom but can link pedagogical practices to global demands without losing sight of local realities. The relationship between the local and the global, in this sense, becomes a structuring element of planning that seeks to integrate academic knowledge, student experiences, local issues, and broader challenges facing humanity.

In this context, relevant planning is directly linked to the assessment of learning; for while planning organizes pedagogical pathways, assessment provides evidence of how students are experiencing those pathways. Therefore, assessment is not limited to a stage that follows planning but constitutes a dimension that is intrinsically linked to it. Thus, by planning and anticipating ways to monitor learning, teachers can identify difficulties, recognize progress, and generate information that, if necessary, can help them adjust their decisions.

This relationship breaks with a linear logic according to which one first plans, then teaches, and finally assesses. From an ecotranscomplex perspective, planning, pedagogical practice, and assessment constitute a recursive process: planning guides practice; practice produces learning situations; assessment interprets these situations; and the results of this interpretation feed back into planning, modifying it. Thus, the assessment of learning becomes a prerequisite for planning to remain relevant, as it allows for adjusting learning paths, diversifying teaching approaches, and responding to students' emerging needs.

Relevant planning, in this conception, serves as a bridge between the curriculum and assessment. The curriculum provides references and educational goals; assessment generates evidence to understand the process. Planning, in turn, translates curricular references into situated learning paths, while replanning reorganizes teaching practices. This dynamic confirms the recursive nature of educational practice: what is assessed feeds back into planning and challenges the lived curriculum, enabling new pedagogical decisions.

In summary, effective planning involves reconnecting the curriculum, the local context, the learners, assessment, and educational goals, recognizing that pedagogical practice is a living, dynamic field open to reorientation. From this perspective, the assessment of learning is not an appendix to planning but one of the conditions for its ongoing refinement. Thus, the local context functions not only as the setting in which the curriculum is implemented but also as a dimension that challenges, guides, and reshapes planning decisions.

Learning assessment: a feedback mechanism

The assessment of learning plays a decisive role in the organization of the educational process, although in many school practices it is still associated solely with verifying results,

assigning grades, ranking students, and monitoring performance. This understanding tends to place assessment at the end of the process, as if its primary function were to determine what was or was not learned after instruction has taken place. Under this logic, curriculum, planning, and assessment appear as successive stages: one defines what to teach, organizes instructional practices, and, finally, measures student performance.

This perspective proves limited in understanding the complexity of learning in Basic Education. Criticism of summative assessment does not imply denying the importance of monitoring results or identifying gaps; the problem lies in restricting it to measurement alone, isolating performance from the context, the mediating factors, and the conditions that produced it.

Based on Morin (2003, 2011, 2013, 2015), insufficient grades, concepts, descriptors, or results should be interpreted in relation to the conditions that produce them—namely, the curriculum, planning, teaching practices, students' trajectories, institutional conditions, and educational goals.

This understanding is supported by Moraes' (2008, p. 240) assertion that assessment “is not an activity that takes place at the end of a process,” as it is fully interwoven with the educational process, student learning, and the development of the system as a whole. From a complexity-based perspective, the author views assessment practices as procedural and dynamic, open to the unknown, the unexpected, and the unforeseen situations that arise throughout the educational process. Thus, assessment does not merely mean verifying results, but rather monitoring progress, recognizing emerging issues, interpreting learning trajectories, and creating conditions that allow the learning process to be reoriented.

From this perspective, the assessment of learning can be understood as a diagnostic, process-oriented, and interpretive practice. It is diagnostic because it allows for the identification of prior knowledge, difficulties, potential, and needs for intervention. It is process-oriented because it tracks learning throughout the process, not just at its conclusion. It is interpretive because it involves a qualitative analysis of the evidence produced by students, considering not only correctness or error but also the ways in which they think, argue, connect knowledge, tackle challenges, and construct meaning.

Vidal and Pinho (2020, p. 572) contribute to this understanding by highlighting the “relational, dialogic, open, and integrative nature” of learning assessment in light of complexity. This interpretation allows us to understand assessment as a practice linked to conceptions of teaching, learning, knowledge, and human development—one capable of fostering an understanding of students' learning trajectories and the reorientation of pedagogical practices.

Moraes (2008) expands on this interpretation by understanding assessment in its dialogic, recursive, and interactional dimensions, highlighting its role in the processes of self-assessment, self-regulation, metacognition, and self-organization of the learner. From this perspective, errors are no longer treated as mere mistakes but are interpreted as part of the learning process, offering insights into the necessary adjustments to teaching, planning, and the students' own educational journey.

When this happens, assessment functions as a feedback mechanism for relevant planning. This feedback presupposes that assessment data are converted into pedagogical meaning. In this context, an activity, a test, an observation, a portfolio, a self-assessment, or an external result does not transform practice on its own. They gain relevance when interpreted through an educational lens and when they help teachers and schools understand what students reveal about their learning styles, their difficulties, their progress, and their needs. Without this interpretation, assessment remains a fragmented record.

Internal assessment, carried out in the day-to-day life of the school and the classroom, plays a fundamental role in this process because it allows for the monitoring of dimensions that are rarely captured by standardized assessments, such as participation, autonomy, authorship, cooperation, reasoning, creativity, and individual paces and trajectories. This understanding aligns with Moraes's (2008) ternary conception of assessment—comprising self-assessment, hetero-assessment, and eco-assessment—allowing us to view it as a participatory and multidirectional process in which students, peers, teachers, and the context all contribute to the construction of meaning regarding learning.

The assessment of learning is also shaped by large-scale external assessments, which can provide relevant indicators for diagnosing inequalities, identifying gaps, and guiding public policy. Almeida (2020, p. 9) demonstrates, however, that when the focus shifts exclusively to results, “the pursuit of improved metrics has come to dominate the objectives and actions” of the school system and individual schools. In this vein, Alvernaz, Souza, and Henrique (2021) point out that such assessments can reinforce the centrality of tests, results, and quantitative dimensions of performance, leading to a narrowing of the curriculum and an excessive focus on test preparation. For this reason, external indicators gain pedagogical meaning when linked to institutional evaluation and classroom assessment, so that the data are interpreted within the context of the school (Vidal; Pinho, 2020).

This interpretation is reinforced by Moraes's (2008) critique of evaluative judgments taken out of context and by his observation that student performance can be influenced by social, emotional, and academic circumstances. Therefore, an unsatisfactory result does not

necessarily indicate a lack of learning or cognitive inability, but may reveal conditions that permeate the educational process and deserve consideration before any judgment or labeling is made.

In this vein, Queiroz (2026, p. 102) views assessment as a space for “reflection, dialogue, and the construction of meaning,” emphasizing its interpretive and pedagogical function. The central question is no longer merely “who learned?” but now includes “what do these results reveal about the teaching and learning process?” This shift moves the focus away from holding individual students accountable toward a broader understanding of the relationships between curriculum, planning, teacher mediation, and school conditions.

In this sense, assessment highlights the tension between the actual curriculum and the intended plan by revealing the similarities and differences between what was prescribed, planned, taught, and actually learned. When evidence indicates that certain objectives have not been achieved, it creates an opportunity to examine content, strategies, timing, language, resources, forms of monitoring, and curricular priorities. In this context, re-planning does not imply improvisation or weakness, but rather reflects pedagogical responsibility in the face of the complexity of learning.

The ecotranscomplex perspective broadens this debate by understanding assessment as a practice linked to life, territory, relationships, and transformation. Learning is not limited to the acquisition of academic content, although such content is fundamental. It involves the ability to connect knowledge, understand problems, participate in collective life, develop autonomy, recognize interdependencies, and make sense of oneself and the world. An assessment consistent with this perspective requires pedagogical rigor, intentionality, clear criteria, and a diversity of strategies, so that the tools used are aligned with curricular objectives, relevant planning, and students’ needs.

Understood as a feedback mechanism, assessment permeates the educational process and returns to planning and the curriculum, facilitating adjustments, reorganizations, and new learning possibilities. This feedback does not represent a simple course correction, but rather a recursive process of interpretation and transformation, in which the evidence generated during pedagogical practice allows for the revision of decisions, the expansion of teaching strategies, and the reframing of the lived curriculum.

From a complexity perspective, Moraes (2008, p. 248) understands assessment as a “living, flexible, dynamic, open process,” whose circular causality feeds back onto the individual and onto the educational process itself. This interpretation reinforces the understanding of assessment as a recursive process, in which the information generated along

the way provides the basis for the adjustments, readjustments, and reorganizations necessary for learning and instructional planning.

As a result, the assessment of learning becomes the central link between the curriculum and planning, taking on the roles of interpretation, mediation, and transformation. This perspective aligns with Queiroz (2026, p. 111), for whom assessment “ceases to be an end and becomes a means.” Thus, in light of ecotranscomplexity, the assessment of learning interprets lived experience, challenges expectations, and guides the future. It interprets lived experience by generating meaning about learning processes; it challenges expectations by confronting the curriculum and planning with evidence from the school’s reality; and it guides the future by pointing to possibilities for replanning and transforming pedagogical practice. Therefore, it is not limited to measuring performance but provides feedback for relevant planning and reconfigures the lived curriculum.

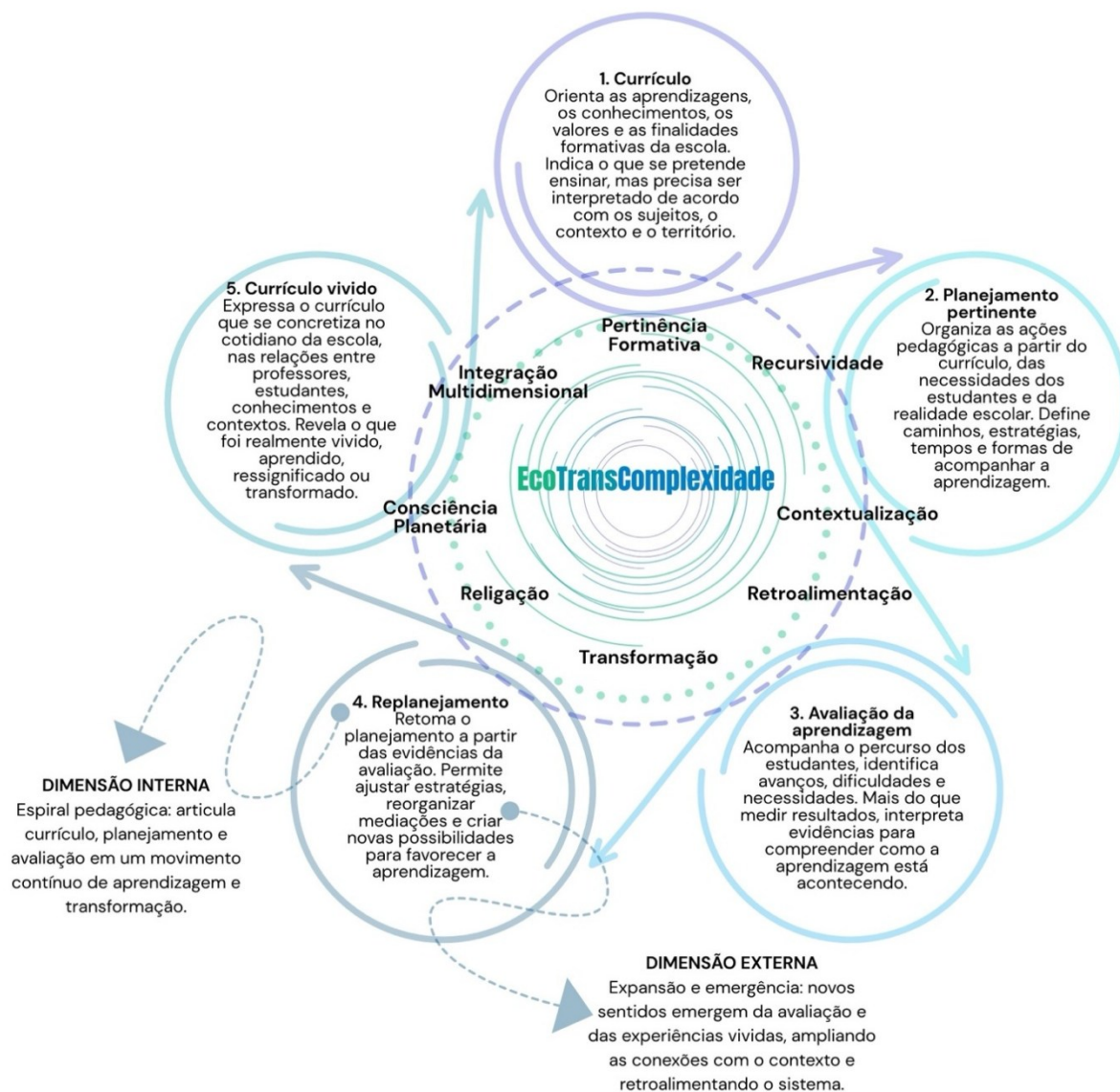
Reconnecting curriculum, planning, and assessment

The connection between the curriculum, relevant planning, and learning assessment is strengthened when supported by an epistemological foundation capable of transcending linear, fragmented, and reductionist interpretations of the educational process. Throughout this article, it has been argued that assessment is not limited to a final stage of verification, as it interprets processes, challenges the lived curriculum, and provides feedback for teacher planning. To support this understanding, ecotranscomplexity emerges as a fruitful perspective, as it articulates complexity, transdisciplinarity, and ecoformation in the understanding of Basic Education as a situated, multidimensional, and interdependent process.

The authorial contribution of this article consists of systematizing the assessment of learning as an axis of feedback between the curriculum and relevant planning. In dialogue with the notion of an ecotranscomplex curriculum discussed by Prigol, Zwierewicz, and Silva (2025), the proposed matrix highlights recursive relationships between curriculum, planning, assessment, re-planning, and the lived curriculum, emphasizing how evidence generated in everyday school life can reorient pedagogical and curricular decisions.

This understanding can be summarized in Figure 1.

Figure 1 – An ecotranscomplex matrix linking curriculum, planning, and assessment



Source: the authors.

The matrix is not intended merely to organize categories, but to clarify the recursive dynamic through which evidence generated in pedagogical practice feeds back into planning and the curriculum. In this way, assessment plays a structuring role in the transition between what is planned, what is experienced, and what is re-planned. At the core of this process are the curriculum, relevant planning, and assessment of learning—dimensions that organize immediate pedagogical action. On an external and broader level lie replanning and the lived curriculum, understood as emerging movements that result from assessment and feedback within the system.

Figure 1 also highlights an external and expanded dimension, consisting of re-planning and the lived curriculum. These dimensions do not appear as mere subsequent stages, but as emerging processes that result from the evaluation and feedback on the system. Replanning reorganizes pedagogical decisions based on the evidence produced by assessment, adjusting teaching approaches, timing, strategies, and curricular priorities. The lived curriculum, in turn, expresses the curriculum as it is actually constructed through the relationships among teachers, students, knowledge, and contexts, revealing similarities and differences between what was prescribed, planned, taught, and learned.

Thus, the matrix indicates that the educational process does not end with assessment. Assessment propels the process toward a broader dimension: by producing evidence about learning, it drives replanning; by interpreting the meanings constructed in everyday school life, it allows for the recognition of the lived curriculum; and, by returning to the curriculum and planning, it opens up new possibilities for pedagogical practice. It is, therefore, a spiral movement, in which each return does not represent repetition, but rather reorganization, deepening, and transformation.

From this perspective, the ecotranscomplex movement can be understood as follows: the curriculum, relevant planning, and assessment of learning constitute the internal and core dimension of pedagogical action; replanning and the lived curriculum constitute the external and expanded dimension, in which the evidence, experiences, and meanings produced along the way feed back into the system. This framework allows us to move beyond the image of a closed cycle and brings the educational process closer to an open, dynamic, and unfinished spiral.

The assessment of learning, in this case, fulfills a threefold function. It is diagnostic, because it identifies conditions, needs, and possibilities; it is interpretive, because it produces meanings about learning processes; and it provides feedback, because it reorients planning and shapes the lived curriculum. This threefold function allows us to move beyond the idea of assessment as the conclusion of the process and to understand it as a constitutive dimension of pedagogical practice.

The matrix also helps us understand that external indicators and internal evidence take on pedagogical meaning when interpreted in context, in dialogue with relevant planning and the lived curriculum. In this regard, ecotranscomplexity prevents both the rejection of indicators and their absolutization, favoring a more contextualized interpretation of learning and the conditions that influence its production.

By reconnecting curriculum, planning, assessment, re-planning, and the lived curriculum, ecotranscomplexity contributes to the enhancement of the educational process in Basic Education. This enhancement is not limited to improving measurable outcomes, although these may be taken into account. It involves expanding learning conditions, contextualizing pedagogical practices, recognizing students' unique characteristics, integrating knowledge with life, and building a school that is more responsive to local and global demands.

The recursive relationship between the curriculum, relevant planning, and learning assessment is encapsulated in the matrix itself, in which assessment interprets evidence, drives replanning, and contributes to the continuous reinterpretation of the lived curriculum.

Conclusion

The purpose of this article was to analyze, in light of ecocomplexity, the assessment of learning as a feedback mechanism for the curriculum and relevant planning. The discussion that ensued made it clear that curriculum, planning, and assessment are not isolated stages, but rather interdependent dimensions of a single educational process, characterized by relationships, contexts, intentions, and possibilities for transformation.

By examining the relationship between the BNCC, subnational curricula, and the school's curriculum plan, it became evident that the curriculum gains pedagogical meaning when interpreted in dialogue with the local context, with the individuals involved, and with learning needs. In this vein, relevant planning serves as a reconnecting force, transforming curricular references into situated pedagogical pathways that are open to listening, revision, and the evidence generated during the educational process.

The assessment of learning, the central focus of this article, was understood as a diagnostic, process-oriented, interpretive, and feedback-driven practice. This understanding shifts assessment from a finalistic, classificatory, or merely measuring role to a strategic function: to make sense of learning, recognize individual differences, interpret evidence, and create conditions to reorient planning and challenge the lived curriculum.

The article's main contribution lies in the proposal of an ecotranscomplex matrix that reconnects curriculum, planning, and assessment. The matrix highlights an internal, core dimension—comprising the curriculum, relevant planning, and assessment of learning—and an external, expanded dimension—comprising replanning and the lived curriculum. This framework allows us to represent the educational process as an open, dynamic, and unfinished

spiral, in which assessment means interpreting what has been experienced, challenging what was planned, and guiding what is to come.

It can be concluded that ecomplexity offers a powerful epistemological and pedagogical foundation for enhancing Basic Education, especially by fostering a reconnection between the curriculum, planning, assessment, re-planning, and the lived curriculum. From this perspective, assessment ceases to be merely a measure of performance and becomes a practice of understanding, mediation, and transformation. To assess, therefore, means to understand lived experience in order to recreate what is possible.

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