

Educational Philosophy

How Storybranch Understands Meaningful Learning

A Position Paper on Environmental Literacy, Meaningful Learning and Scientific Integrity

Version 1.0 (Draft)

Knowledge helps us understand the living world. Meaningful experiences help us feel that we belong within it. Together, they cultivate the stewardship, competence and leadership needed to create sustainable futures.

Introduction

Education shapes not only what people know, but also how they interpret evidence, relate to others, make decisions and participate in society. Environmental challenges such as climate change, biodiversity loss, soil degradation and freshwater scarcity are therefore not only scientific or technological problems; they are also educational challenges. Addressing them requires people who can understand complex living systems, think across disciplines and act responsibly under conditions of uncertainty (UNESCO, 2020; Borgonovi et al., 2022).

Storybranch's educational philosophy is grounded in one central principle: scientific knowledge is essential, but knowledge becomes more powerful when it is connected to meaningful experience. Our work therefore combines evidence, reflection, creativity, emotional engagement, social connection and opportunities for informed participation. This multidimensional view is consistent with Education for Sustainable Development, which integrates cognitive, socio-emotional and behavioral learning (UNESCO, 2020).

Storybranch was founded on the belief that sustainable futures begin early. Childhood experiences can contribute to how people later understand nature, interpret responsibility and participate in society. For this reason, our educational approach begins with children while also recognizing the educators, families, communities and institutions that shape their learning and opportunities to act. We do not assume that any single experience automatically produces lasting behavior. Rather, we seek to create sound foundations that can be strengthened throughout life (Chawla, 1998a).

Science provides the foundation. Creativity provides the bridge. Meaningful experiences provide the context in which knowledge can become relevant, memorable and applicable. This philosophy does not prescribe one fixed method; it

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establishes the principles that guide every Storybranch experience, regardless of medium, audience or setting.

1. Environmental literacy as a lifelong competence

Environmental literacy extends beyond learning isolated facts about ecosystems or environmental problems. It includes the capacity to understand relationships among ecological, social, economic and technological systems; evaluate evidence; recognize uncertainty; consider multiple perspectives; and participate thoughtfully in decisions that affect people and the living world (UNESCO, 2020; Borgonovi et al., 2022).

This means that environmental literacy is relevant not only to environmental careers. It matters wherever decisions affect materials, resources, technologies, communities and living systems. Engineers, designers, teachers, lawyers, policymakers, entrepreneurs, researchers and organizational leaders all make choices with environmental consequences. Environmental literacy is therefore a foundation for informed citizenship, professional practice and responsible decision-making.

At Storybranch, environmental literacy should help learners move from asking only “What is this?” to asking “Why does it matter?”, “How is it connected?”, “What evidence supports this explanation?” and “What role can I play?”. Our aim is not advocacy without evidence. It is to cultivate scientifically informed people who can understand the living world and participate responsibly in its future.

2. Meaningful learning: beyond knowledge alone

Environmental education research has repeatedly shown that there is no simple, linear relationship between knowing and acting. People may understand environmental problems and still find it difficult to change everyday practices. Meaningful learning therefore requires more than the transmission of information; it develops through interactions among understanding, motivation, experience, reflection, social context and opportunities for action (UNESCO, 2020).

Dewey (1938) described education as the reconstruction of experience through reflection, while Kolb (1984) later organized experiential learning as a cycle of concrete experience, reflective observation, conceptual understanding and active experimentation. These perspectives support approaches in which learners investigate, reflect, connect new knowledge with prior understanding and test ideas in practice.

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Research on significant life experiences also suggests that childhood contact with nature, opportunities for exploration, supportive adults and participation in meaningful environmental activities are frequently reported by people who later demonstrate sustained environmental concern. These findings should be interpreted cautiously: they identify recurring influences, not a deterministic pathway from outdoor experience to later behavior (Chawla, 1998a, 1998b).

Storybranch therefore treats experiences as contexts for learning rather than substitutes for knowledge. A meaningful experience can attract attention, create relevance and provide material for reflection; scientific explanation gives that experience accuracy, depth and intellectual value.

Emotional connection and stewardship

Emotion and cognition are closely connected in learning. Attention, memory and motivation are influenced by personal relevance and emotional significance. In environmental education, meaningful encounters with nature may contribute to environmental sensitivity, but emotion alone does not guarantee responsible action (Chawla, 1998a).

Storybranch understands stewardship as a competence that may develop when people understand living systems, feel that they belong within them and recognize realistic opportunities to contribute. We do not impose predetermined behaviors on learners. Our objective is to support understanding, reflection and evidence-informed choice.

Intergenerational learning

Environmental learning can move across generations. Children may introduce questions, observations and new knowledge into their families, encouraging discussion and reflection among adults. Reviews of environmental education programs indicate that intergenerational learning is more likely when activities address locally relevant issues, support communication and involve families directly (Duvall & Zint, 2007).

Evidence of child-to-adult influence is promising but context-dependent, and it should not be interpreted as automatic or permanent behavioral change (Istead & Shapiro, 2014). Storybranch therefore recognizes children as participants in shared learning while maintaining that adults, institutions and organizations retain responsibility for structural environmental action.

3. Science as the foundation

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Every Storybranch story, illustration, workshop, program or immersive experience begins with the same question: What does the scientific evidence tell us? Only then do we ask how that knowledge can become meaningful, understandable and memorable.

Scientific literacy is a core component of environmental literacy because sustainability challenges involve interacting systems, incomplete information and uncertainty. Learners need opportunities to evaluate evidence, examine explanations, recognize limitations and revise ideas when new information becomes available (National Research Council, 2012).

Science is not a collection of immutable facts. It is a self-correcting process of observation, questioning, testing, interpretation, peer review and revision. Helping learners understand how knowledge is produced is therefore as important as communicating current conclusions. This supports scientific reasoning and helps people distinguish evidence-based claims from opinion and misinformation (National Research Council, 2012).

Storybranch seeks to foster trust in science through understanding rather than authority. Scientific integrity means accuracy, transparent sourcing, honest communication of uncertainty and willingness to update materials when evidence changes.

4. Creativity as the bridge

Scientific knowledge often concerns processes that are invisible, occur over long timescales or emerge from interactions among many components. Storytelling, illustration, design, play, theatre and immersive media can provide multiple routes into such ideas without replacing scientific explanation.

Narrative can help people organize information into meaningful structures, while visual and interactive representations can reveal relationships that are difficult to communicate in text alone (Bruner, 1991). A microscopic image may make an invisible process tangible; a game may allow learners to experiment with feedback and consequences; a story may connect abstract knowledge with human experience.

For Storybranch, creativity is therefore educational rather than decorative. Every creative choice should serve understanding, curiosity or participation, and it must not distort evidence or conceal uncertainty. Science gives creative work substance; creativity gives scientific knowledge an accessible language.

5. Learning from nature

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At Storybranch, nature is both a subject of study and a source of questions. Ecosystems are dynamic networks in which organisms and physical conditions exchange energy, matter and information. Their behavior emerges through interdependence, feedback, adaptation and change (Levin, 1998).

Learning from nature does not mean romanticizing it or assuming that natural processes are inherently moral. Nor does it mean copying biological systems uncritically. It means observing carefully, identifying patterns and using those observations to deepen questions about resilience, diversity, cooperation, limits and adaptation.

A tree cannot be understood by studying its leaves alone. Its growth depends on roots, soil organisms, fungi, water, light, climate and countless interactions. In the same way, environmental challenges cannot be understood as isolated topics. Learning becomes the process of discovering relationships rather than accumulating disconnected facts.

6. Systems thinking

Systems thinking helps learners recognize components, relationships, feedback loops, delays and unintended consequences. It is particularly important in sustainability education because environmental issues arise from interactions among ecological, social, economic and technological systems (Meadows, 2008; Borgonovi et al., 2022).

At Storybranch, systems thinking is experienced through questions. A child observing a forest may ask why fungi grow beneath the soil, why insects matter, what happens when one species disappears or how people depend on the system. These questions encourage a shift from naming individual parts to understanding patterns and interdependence.

Developed early and strengthened throughout life, this capacity can support decisions in education, citizenship, professional practice and organizational leadership. The Living Architecture of Storybranch uses the tree as an organizational metaphor for the same reason: it makes visible how foundations, structures, branches and outward expressions depend on one another.

7. Our educational commitment

This philosophy is a living framework rather than a fixed methodology. Whether Storybranch creates a children's book, workshop, digital platform, immersive installation, professional program or scientific resource, every experience should:

- be grounded in verified scientific knowledge and transparent sources;
- communicate complexity clearly without compromising accuracy;

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- encourage curiosity, critical thinking and lifelong learning;
- connect knowledge with reflection, meaning and relevant experience;
- foster a sense of belonging within the living world without prescribing conclusions;
- use creativity intentionally as a bridge to understanding;
- reveal relationships and support systems thinking;
- recognize childhood as an important foundation for lifelong environmental literacy;
- support participation across generations without transferring adult responsibility to children;
- respect cultural and local perspectives while distinguishing clearly among scientific evidence, professional knowledge and lived experience;
- create realistic opportunities for dialogue, participation and informed decision-making;
- remain open to revision as scientific and educational evidence develops.

These commitments are standards for Storybranch's design process, not guaranteed outcomes for every learner. Learning is shaped by prior knowledge, culture, context, access, relationships and opportunity. Professional integrity requires us to evaluate our work, communicate its limits and improve it as evidence develops.

8. Looking forward

Education cannot solve environmental challenges on its own. Sustainable futures also require technological innovation, public policy, responsible organizations, functioning institutions and collective action. Education nevertheless shapes the knowledge, competencies and perspectives that allow people to contribute meaningfully to those efforts.

Storybranch believes environmental literacy should begin early and remain part of lifelong learning—not because every learner will enter an environmental profession, but because every person lives within and makes decisions that affect the systems that sustain life.

Our aspiration is not simply to teach about nature. It is to help people understand that they are part of it. By combining verified scientific knowledge with meaningful experiences, Storybranch seeks to cultivate curiosity, connection, competence and stewardship that continue beyond a single lesson, program or classroom.

We aim to help children develop foundations they can carry into adulthood while supporting the educators, families, professionals and organizations that shape the conditions for sustainable futures.

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