Part IV: Futures in the Making - Reimagining the Social
Chapter 17

EDUCATION BEYOND THE CLASSROOM: REFRAMING LEARNING IN UNCERTAIN TIMES

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INTRODUCTION

In recent years, education systems worldwide have faced unprecedented challenges that have disrupted conventional models of schooling and catalyzed rethinking of what it means to learn, teach, and know. The world has entered an age of uncertainty from the COVID-19 pandemic to accelerating technological change, ecological crises, political polarization, and global inequalities (Gilead & Dishon, 2021). These overlapping disruptions have exposed the limitations of standardized, classroom-centered education systems, which are often rigid, assessment-driven, and disconnected from lived realities. Simultaneously, they have amplified the importance of adaptable, lifelong, and context-sensitive learning approaches that extend beyond physical classrooms.

This has given rise to new educational imaginaries and practices that reframe learning as a distributed, relational, and transformative process. Informal and non-formal education spaces, from online communities and maker labs to indigenous knowledge systems and activist pedagogy, have gained renewed attention as vital sites for knowledge production and critical engagement (Berman, 2020). Additionally, digital technologies, although unevenly accessible, have reconfigured the modalities, rhythms, and geographies of learning. As learners and educators navigate this shifting terrain, questions emerge regarding authority, access, purpose, and inclusion in education. This chapter situates itself within this broader context to explore how education must be reconceptualized in response to uncertain futures and how practices beyond the classroom may hold the key to more just, resilient, and imaginative learning ecosystems.

The purpose of this chapter is to critically examine how the meaning, scope, and delivery of education are being redefined in response to rapidly changing global conditions, ranging from technological disruptions and climate crises to pandemics and socio-political upheavals. Traditional models of schooling, centered on standardized curricula, hierarchical knowledge transmission, and classroom-bound pedagogy, are increasingly inadequate for preparing learners to navigate uncertainty, complexity, and interdependence. This chapter seeks to interrogate these limitations and highlights alternative frameworks that position education as a lifelong, relational, and transformative process that extends well beyond institutional walls. Drawing on interdisciplinary perspectives from educational theory, learning sciences, and social innovation,

this chapter explores emergent paradigms, such as experiential learning, community-based education, digital hybridity, and decolonial pedagogies. It aims to offer not only a theoretical understanding of these shifts, but also practical insights into how educational systems, educators, and learners can adapt meaningfully. In doing so, the chapter invites readers to rethink education as a site for imagination, resilience, and social renewal, particularly in times of systemic uncertainty and transition.

CONCEPTUAL CLARIFICATION

"Education beyond the classroom" refers to learning that occurs outside the confines of formal, institutional settings such as schools, colleges, or universities. This encompasses a broad spectrum of learning modalities, including community-based education, experiential and environmental learning, peer-to-peer knowledge exchange, online and hybrid education models, and self-directed or informal learning practices (Vindigni, 2023). It challenges traditional assumptions that equate learning solely with formal instruction and standardized curricula instead of recognizing the diverse contexts, spaces, and actors that contribute to knowledge acquisition, skill development, and critical reflection. In this expanded framework, education is understood as a lifelong, situated, and often a collaborative process.

Historically, the concept has its roots in various educational traditions and movements. Thinkers such as John Dewey and Paulo Freire laid early groundwork by emphasizing the social, experiential, and emancipatory dimensions of education (Andresen et al., 2020). Dewey's pragmatism highlighted learning as an active, inquiry-based process deeply connected to lived experience, while Freire's critical pedagogy emphasized dialogue, agency, and the political nature of knowledge. Additionally, indigenous knowledge systems and oral traditions across the world have long exemplified forms of education that exist outside formal institutions, privileged contexts, relationality, and ecological embeddedness.

The rise of information technologies, coupled with global crises, such as the COVID-19 pandemic, has accelerated the rethinking of educational boundaries (Rajab et al., 2024). In these uncertain times, learning increasingly takes place in decentralized, digital, and intergenerational spaces, reshaping who teaches, what is learned, and how education is valued. Thus, the concept not only reflects a pedagogical shift but also signals a broader transformation in how societies conceptualize learning in response to precarity, inequality, and planetary change.

The idea of "education beyond the classroom" has evolved from a marginal supplement to formal schooling into a robust and necessary reimagining of where, how, and why learning takes place (Alanoglu et al., 2021). Its roots can be traced to the progressive educational philosophies of the early 20th century, notably John Dewey's advocacy for experiential learning and Maria Montessori's emphasis on self-directed, contextually grounded education. These pioneers challenged the rigid industrial-era schooling model by asserting that meaningful learning must be connected to real life, community, and individual agency.

In the latter half of the 20th century, informal and non-formal education gained prominence, especially in the context of adult literacy movements, community education, and alternative pedagogies in the Global South (Freire, 2021). Paulo Freire's *Pedagogy of the Oppressed* was foundational to linking education with empowerment and framing learning as a dialogical and

political act that transcends institutional boundaries. The concept was further enriched by lifelong learning frameworks introduced by UNESCO, which emphasized learning as a continuous, cradle-to-grave process shaped by multiple environments familial, civic, digital, and occupational.With the digital turn in the 21st century, the scope of out-of-classroom education expanded exponentially. Online platforms, open educational resources (OERs), peer-to-peer networks, and makerspaces have decentralized access to knowledge, allowing learners to craft individualized, interest-driven pathways. The rise of ed-tech, coding bootcamps, and Massive Open Online Courses (MOOCs) signaled a shift from institutional credentialing to skill-based and modular learning. However, this digital expansion has also introduced new forms of exclusion, datafication, and commercialization, raising critical questions about who controls access and pedagogical direction.

The COVID-19 pandemic has dramatically accelerated the reconfiguration of education, revealing both the potential and limitations of nontraditional learning spaces (Bress et al., 2021). As schools closed, homes, streets, screens, and community hubs became the primary sites of education. This disruption catalyzed renewed reflection on the social, emotional, and material infrastructure that underpins learning. Concepts such as "learning ecosystems," "connected learning," and "education in emergencies" have since gained traction, highlighting the need for adaptive, context-sensitive, and resilient pedagogies that go beyond institutional walls.In today’s uncertain times marked by climate crises, technological disruption, and social upheaval, "education beyond the classroom" has emerged not merely as an alternative but as a vital paradigm. It reflects a deeper recognition that learning is relational, place-based, and lifelong, shaped by everyday practices, cultural narratives, and collective aspirations. This evolution challenges us to broaden our understanding of education to include diverse epistemologies, modes of engagement, and forms of knowledge production, many of which remain invisible or under-valued in formal systems.

Reframing education beyond the classroom intersects several adjacent concepts, including lifelong learning, informal learning, informal education, and experiential learning (Shteynberg et al., 2020). While often used interchangeably, these terms have distinct connotations that shape how educational practices are understood and implemented in different contexts. Lifelong learning refers to the continuous acquisition of knowledge and skills throughout an individual's life, encompassing formal, informal, and informal settings. It emphasizes adaptability, personal development, and employability, particularly in rapidly changing socioeconomic environments. However, unlike the broader notion of education beyond the classroom, lifelong learning is often instrumentalized within neoliberal policy frameworks, focusing on workforce readiness rather than critical or emancipatory learning.

In contrast, informal learning occurs organically in everyday life through family, peer interactions, media consumption, or community engagement, without structured curricula or institutional recognition (Onopriienko et al., 2023). This mode of learning highlights the cognitive and social processes that unfold in unregulated spaces, but it may lack intentionality or assessment, which distinguishes it from consciously designed alternative pedagogies.Non-formal education occupies a middle ground: it is structured but takes place outside the conventional school system, such as adult literacy programs, skill development workshops, or NGO-led education initiatives. This category is vital for marginalized populations excluded from mainstream education, and often embodies participatory and context-sensitive pedagogical methods.

Experiential learning, popularized by theorists such as David Kolb, underscores the importance of learning through direct experience, reflection, and application (Murray, 2018). While traditionally applied within formal settings, such as internships or fieldwork, it resonates strongly with the ethos of education beyond the classroom, which values embodied, affective, and situated knowledge. Thus, the concept of education beyond the classroom synthesizes and expands upon these ideas. It insists not only on where learning occurs but also on how it is shaped by uncertainty, social transformation, and ecological crises. It urges a redefinition of educational legitimacy, moving away from credentialism toward plural, adaptive, and relational forms of knowing.

THEORETICAL FOUNDATIONS

Reframing education beyond the classroom is supported by a confluence of critical and progressive educational theories that challenge the formalism, standardization, and hierarchies embedded in conventional schooling. At the core lies constructivist learning theory, particularly the work of Jean Piaget and Lev Vygotsky, which emphasizes the active role of learners in meaning-making and the importance of social interaction, context, and culture in the learning process (Feyzi Behnagh & Yasrebi, 2020). Vygotsky's notion of the *zone of proximal development* is especially significant, as it positions learning as an inherently collaborative endeavor, often facilitated outside traditional instructional settings.

The experiential learning theory, articulated by David Kolb, further reinforces the value of learning through doing, reflection, and iteration. This framework elevates real-world experience as a crucial source of knowledge, aligning directly with a shift toward learning in community-, nature-, and work-based environments (Kolb & Kolb, 2022). Similarly, John Dewey's pragmatist pedagogy offers foundational insights by advocating for education embedded in lived experience, civic engagement, and problem-solving principles that are now central to project-based learning, service learning, and maker education.

The critical pedagogy framework, most notably developed by Paulo Freire, underpins the political dimensions of learning beyond the classroom. Freire's insistence on dialogical learning, consciousness-raising (*conscientização*), and the dismantling of oppressive educational structures challenges the banking model of education and insists on the co-creation of knowledge (Mclaren & Bosio, 2022). In uncertain times marked by inequality, crisis, and displacement, critical pedagogy provides a lens through which education becomes a practice of freedom, enabling learners to question dominant narratives and engage in transformative action.Complementing these are theories from the learning sciences, especially situated cognition and distributed cognition, which reconceptualize learning as something not confined to individual minds or physical classrooms but as emerging from interactions among people, tools, and environments. These theories support the integration of digital technologies, peer networks, and informal learning contexts as legitimate and valuable components of an extended learning ecology.

Ecopedagogy and indigenous knowledge systems also provide essential foundations for learning in uncertain times, particularly by emphasizing relationality, place-based knowledge, and interdependence between human and non-human worlds. These perspectives invite a rethinking of learning as not merely human-centered but planetary in scope, responding to the ecological and existential uncertainties of our era (Ergene & Calás, 2023).Taken together, these theories converge

on a shared critique of rigid, siloed, and hierarchical models of education and instead advocate for a distributed, participatory, and context-responsive understanding of learning. As we grapple with global disruptions, such as climate change, pandemics, and technological displacement, these theoretical foundations offer a robust basis for reimagining education as an adaptive, ethical, and socially embedded practice beyond the classroom.

Reframing education beyond the classroom is supported and challenged by a diverse array of theoretical perspectives, each offering distinct assumptions about learning, knowledge, and the purpose of education. While constructivist and sociocultural theories, such as those by Piaget and Vygotsky, have traditionally shaped non-formal and experiential education paradigms, more recent frameworks, including critical pedagogy, actor-network theory (ANT), and decolonial epistemologies, provide complementary yet sometimes competing insights into how education functions in complex, uncertain environments (Wibowo et al., 2025).

For instance, critical pedagogy, as advanced by Paulo Freire and Bell Hooks, emphasizes education as a practice of freedom and social transformation. It challenges technocratic and market-driven models of learning, focusing on dialogue, critical consciousness, and resistance to oppression. In contrast, human capital theory, which is dominant in policy and economics, views learning even outside classrooms as instrumental in increasing productivity and individual competitiveness. These diverging orientations reflect tensions between the emancipatory and instrumental visions of education in the neoliberal age.

Simultaneously, approaches such as ecological learning and indigenous knowledge systems complicate Western binaries by offering holistic views of education as relational, embodied, and deeply embedded in place and community. These perspectives challenge the universality of formal curricula, emphasizing local knowledge, intergenerational transmission, and learning as lived experiences (Sidiropoulos, 2022). ANT, on the other hand, contributes a post-humanist lens by de-centering the human subject and viewing learning as a networked process involving technologies, environments, and material artifacts. Rather than seeing these perspectives as mutually exclusive, there is increasing recognition of their potential complementarity. For example, integrating critical pedagogy with ecological learning can foreground both social justice and sustainability, while blending sociocultural theory with ANT can illuminate how learners navigate digitally mediated hybrid environments. Understanding these tensions and synergies is essential for designing educational responses that are flexible, inclusive, and responsive to current uncertainties.

To critically engage with education beyond conventional institutions, this chapter employs a hybrid theoretical lens that combines critical pedagogy, experiential learning theory, and sociocultural learning frameworks (Ferreira, 2020). This composite lens is justified by the complex, dynamic nature of learning in times of uncertainty, marked by global disruptions, such as pandemics, climate change, technological upheavals, and sociopolitical fragmentation. Traditional schooling models grounded in standardized curricula and hierarchical knowledge transmission are becoming increasingly inadequate for preparing learners to navigate such volatility. Critical pedagogy, rooted in Paulo Freire's work, offers a foundation for understanding learning as a dialogical, transformative process oriented toward social justice and empowerment. It challenges the "banking model" of education and insists on learners as active co-creators of knowledge, especially crucial in times of systemic flux.

Meanwhile, experiential learning theory, particularly as developed by David Kolb, foregrounds the importance of direct engagement, reflection, and contextual problem-solving. This theory legitimizes diverse sites of learning homes, communities, digital platforms, and workplaces that lie outside the formal classroom, but are rich in pedagogical potential (Rowland, 2023). Finally, sociocultural theories, influenced by Vygotsky and more contemporary scholars, emphasize the embeddedness of learning in social practices, cultural tools, and collaborative relationships. In uncertain times, where institutions are unstable and knowledge evolves rapidly, these lenses collectively enable a richer understanding of how, where, and why learning occurs. They also provide a conceptual foundation for rethinking educational policy, design, and purpose beyond institutional constraints.

DEBATES, GAPS, AND THEORETICAL CHALLENGES

The shift toward reimagining education beyond traditional classrooms has surfaced multiple tensions that challenge the conventional paradigms of learning, authority, and access. One of the most prominent controversies is the role of digital technology in education (Eden et al., 2024). While digital platforms have enabled unprecedented access to learning resources and flexibility, especially during the COVID-19 pandemic, they have also exacerbated inequalities. The digital divide, marked by disparities in Internet access, device ownership, and digital literacy, has reinforced socioeconomic and geographic exclusion, particularly in the Global South and rural or marginalized communities. This raises questions regarding the equity and inclusivity of non-classroom-based education models.

Another key tension lies in the contest between standardized curricula and personalized learner-driven approaches (Ludwig et al., 2024). While formal education systems often prioritize measurable outcomes through examinations and state-mandated curricula, alternative and informal learning spaces emphasize experiential, holistic, and context-sensitive pedagogies. This divergence creates friction between institutional accountability frameworks and the growing recognition of multiple intelligences, emotional learning, and place-based knowledge. Additionally, debates persist around the legitimacy of non-institutional learning credentials and how they are recognized by employers and higher education institutions.

There is also an ideological contest around the purpose of education itself: should it primarily serve economic productivity and labor market needs or foster critical consciousness, creativity, and civic responsibility? (Keoy et al., 2023).The tension between education as human capital development and education as a public good has intensified, especially in neoliberal policy environments, where privatization and performance metrics dominate. Meanwhile, alternative learning movements such as unschooling, democratic schools, and indigenous knowledge systems challenge dominant epistemologies and call for the decolonization of learning.

Finally, the role of educators is undergoing transformation. In many non-classroom contexts, educators act less as authoritative knowledge holders and more as facilitators, mentors, and colearners (Tariq, 2024). This shift unsettles traditional pedagogical hierarchies and raises practical questions regarding training, compensation, and professional identity. As education increasingly moves beyond the classroom, these tensions compel a re-evaluation of foundational

assumptions about what counts as learning, who defines it, and how it can be made equitable, meaningful, and adaptive in uncertain times.

Critical perspectives on education beyond the classroom interrogate the assumptions, power dynamics, and exclusions embedded in emerging models of nonformal, digital, and community-based learning. While proponents often celebrate flexibility, access, and innovation, critical theorists caution that these transformations can reproduce or even deepen educational inequalities if not carefully contextualized (Hueske et al., 2021). For instance, the rapid shift to online and hybrid modalities, amplified by the COVID-19 pandemic, has been criticized for assuming digital literacy and infrastructure that are unequally distributed across socio-economic, geographic, and gender lines, particularly in the Global South.

Feminist and postcolonial scholars raise concerns about how dominant narratives of "21st-century skills" and "self-directed learning" may valorize individualism, entrepreneurialism, and technocratic values over collective inquiry, situated knowledge, and care-based pedagogies (Meston, 2023). These critiques also expose how global education reform discourses driven by international organizations and edtech corporations can homogenize learning by privileging Anglo-Western frameworks while marginalizing indigenous and local epistemologies. Moreover, the rhetoric of "lifelong learning" is often co-opted to shift responsibility for learning to individuals in precarious labor markets, masking systemic failures in public education and social safety nets.

Marxist and critical pedagogy traditions, following Paulo Freire and later thinkers, emphasize that education beyond the classroom must go beyond skill acquisition or resilience-building to actively foster critical consciousness, political engagement, and structural transformation (Bone, 2020). They argue that learning in uncertain times should not only respond to crises but also question the conditions that produce a crisis, from economic inequality to ecological collapse. Similarly, disability justice frameworks urge us to rethink accessibility not as an afterthought, but as a generative principle for inclusive learning design.

In sum, critical perspectives serve as a vital counterbalance between technocratic and market-driven visions of educational reform (Baxter & León Cadavid, 2021). They demand that we center on questions of justice, voice, and plurality in redefining where, how, and for whom learning happens. Without such critical vigilance, education beyond classroom risks becomes a new terrain for exclusion, rather than emancipation.

Despite the growing interest in alternative and non-formal modes of education, significant gaps remain in the literature regarding the systemic integration of "education beyond the classroom" into mainstream learning ecosystems (Hajdukiewicz & Pera, 2020). Much of the existing scholarship focuses on case-specific innovations, such as MOOCs, community-based learning, and experiential education, without offering a comprehensive theoretical framework that binds these disparate practices into a coherent paradigm. Additionally, there is limited research on how informal learning spaces interact with or challenge traditional institutions, in terms of pedagogical authority, curriculum legitimacy, and social recognition. This lack of integration obscures both the political economy of educational change and infrastructural conditions required for scale and sustainability.

Another critical gap lies in the underrepresentation of voices and experiences from the Global South, indigenous communities, and marginalized populations (Baumann et al., 2023). While these groups often engage in rich, contextualized learning practices outside formal systems, their epistemologies are rarely acknowledged as educationally valid. This epistemic marginalization reinforces dominant models of learning that prioritize cognitive outcomes over the relational, affective, and ecological dimensions. Moreover, the literature has yet to adequately address the role of intergenerational knowledge, digital inequalities, and the psychological impacts of learning under prolonged crises such as pandemics, climate disruption, or conflictwithin non-classroom contexts.

Finally, the question of the assessment and credibility of alternative learning remains underexplored (Jia et al., 2021). How can the skills and knowledge gained outside formal settings be evaluated, accredited, or translated into social mobility and opportunities? As new modalities of education proliferate, this remains a key area of empirical and theoretical development. Closing these gaps is essential for building a future-ready educational paradigm that is inclusive, pluralistic, and adaptable to an increasingly uncertain world.

APPLICATION OR ILLUSTRATION

One compelling example of education beyond the classroom is the NalandaWay Foundation's Art-Based Learning Programs in Chennai, India. This initiative, designed primarily for children from marginalized backgrounds, exemplifies how creative, community-driven, and non-formal learning environments can foster emotional resilience, critical thinking, and holistic development, especially in uncertain times marked by socioeconomic volatility and systemic inequality (Gruijters et al., 2023).Amid the COVID-19 pandemic, formal education in India has experienced massive disruptions, disproportionately affecting low-income students. Schools were closed for extended periods of time, digital access was limited, and learning losses were compounded by social isolation and economic stress. NalandaWay responded by pivoting to community-based learning hubs that integrated art, storytelling, theatre, and music into daily learning routines. Facilitators often local youth trained by the foundation delivered sessions in small, safe groups in local community centers or open spaces. These sessions were not mere substitutes for formal schooling, but redefined education as a dialogic, emotionally supportive, and culturally embedded process.

The program's emphasis on social-emotional learning (SEL), empathy, and self-expression is particularly crucial in the pandemic context, where students deal with grief, anxiety, and loss of routine (Zieher et al., 2021). Through participatory activities, the children explored themes such as identity, relationships, and aspirations. Art has become a medium for voice and agency, allowing learners to express fears, dreams, and lived experiences that traditional classrooms often marginalize or ignore. In addition to emotional support, foundational skills in language and numeracy were embedded into these informal, play-based modules bridging gaps left by the digital divide and disengagement from formal curricula.This case illustrates the importance of flexibility, relevance, and relationality in educational design. Instead of enforcing a rigid curriculum or top-down pedagogy, learning hubs embraced co-creation, encouraging learners to shape the content and pace of their learning. The role of community members as facilitators also blurred the boundaries between teachers and learners, schools, and society, thus operationalizing Paulo Freire's vision of education as a practice of freedom.

Furthermore, the NalandaWay experience reveals how non-institutional education can be transformative not only for individual students but also for entire communities (Bali & Caines, 2018). Parents, who initially saw education as the domain of schools alone, began to participate more actively in their children's learning journeys. The initiative also catalyzed networks of care, mentorship, and shared responsibility key ingredients for resilient learning ecosystems.In sum, the NalandaWay Foundation's art-based community education model provides a powerful case of how learning can be reframed beyond the classroom particularly during periods of disruption. This demonstrates the value of alternative pedagogies rooted in creativity, emotional well-being, and local knowledge. As global uncertainties continue to challenge conventional education systems, such grassroots, adaptive approaches offer valuable insights into how we might democratize learning and make it more human-centered and future-relevant.

The shift toward learning beyond the classroom invites a re-evaluation of foundational theories in education, particularly those that emphasize situated, experiential, and transformative learning (Vashishth et al., 2024). Theoretical perspectives such as Paulo Freire's critical pedagogy, Jean Lave and Etienne Wenger's situated learning, and Jack Mezirow's transformative learning theory offer valuable lenses for understanding how education can be reshaped in response to uncertainty. Freire's emphasis on dialogic engagement and the co-construction of knowledge aligns closely with informal community-based learning practices that challenge the teacher-student dichotomy. In times of crisis whether pandemics, climate disruptions, or technological dislocation education becomes a space not only for knowledge transmission, but also for collective meaning-making and empowerment.

Situated learning underscores the importance of context and participation in authentic social practice (Mansourihanis et al., 2025). Learning outside traditional classrooms through activism, peer-to-peer networks, or digital collaborations can be seen as communities of practice where knowledge emerges from doing rather than from abstract instruction. This becomes particularly relevant when conventional institutions are unable to respond to the rapid shifts in an uncertain world. Similarly, transformative learning theory emphasizes the potential of disorienting dilemmas to catalyze deep reflection and paradigm shifts. Crises, such as COVID-19 or ecological collapse, act as dilemmas, disrupting prior assumptions and prompting learners to critically reassess their worldviews.

Together, these theories highlight that learning in uncertain times is less about adapting pre-existing curricula and more about reimagining the nature, space, and purpose of education (Schwartzman, 2020). They suggest a move from education as schooling toward education as an ongoing, socially embedded, and reflexive practice anchored not in stability but in resilience, relevance, and relationality.

CONTRIBUTION AND INNOVATION

This chapter advances the critical reframing of education by proposing a paradigm shift from classroom-centered, curriculum-bound instruction to an ecosystem model of learning that is distributed, adaptive, and deeply contextual (Fastenrath et al., 2019). In an era marked by rapid technological change, ecological uncertainty, and socio-political volatility, conventional schooling systems are increasingly misaligned with learners' lived realities and future needs. The new

perspective offered here repositions education not as a linear progression through standardized benchmarks but as an emergent, lifelong, and situated process shaped by the interplay of digital technologies, community knowledge, and affective experience.

This reimagining foregrounds the importance of informal learning environments, such as peer networks, digital platforms, community hubs, and maker spaces, as legitimate and powerful sites of knowledge production (Karhapää et al., 2023). It also calls for the recognition of multiple literacies including ecological, emotional, and media literacy, which are critical for navigating complexity and fostering resilience. Importantly, the chapter emphasizes the role of learners as co-creators rather than passive recipients, advocating participatory pedagogies that honor curiosity, criticality, and collaboration.

By integrating insights from educational theory, learning sciences, and social innovation, this perspective challenges the dichotomy between formal and informal learning (Tariq, 2024a). It argues for a transdisciplinary, justice-oriented approach that values the wisdom of marginalized communities and indigenous epistemologies and actively resists the neoliberal instrumentalization of education. In doing so, it contributes to a growing body of thought that envisions education not merely as preparation for uncertain futures, but as a means of actively shaping them.

In light of the disruptions posed by global crises, from pandemics and climate change to socio-political instability, this chapter proposes reframing education as an adaptive, distributed, and relational process that transcends institutional boundaries (Lomis et al., 2021). At its core, this reframing calls for the synthesis of three interdependent dimensions: (1) context-responsive pedagogies that adapt to local realities and uncertain futures; (2) interdisciplinary and transdisciplinary frameworks that dissolve rigid disciplinary silos to better address complex, real-world problems; and (3) affective and ethical learning, which values empathy, care, and civic responsibility alongside cognitive outcomes.

We propose a "learning ecosystems" model in which formal, non-formal, and informal learning spaces are recognized as mutually reinforcing. This ecosystem is characterized by porous boundaries between schools, communities, digital networks, and the natural environment, enabling learners to construct knowledge through active participation, co-creation, and situated experiences (Wang et al., 2022). This synthesis moves beyond the binary of online versus offline or classroom versus field and instead embraces hybrid, learner-centered designs that are deeply embedded in local contexts while globally connected.

By recognizing uncertainty not as a barrier but as a condition for innovation and reflexivity, this proposition shifts the purpose of education toward cultivating adaptive capacities, collective agency, and epistemic humility (Raes, 2021). It urges educators, policymakers, and institutions to co-create flexible structures that prioritize learning "with" rather than teaching "to," making education more responsive, resilient, and just in a rapidly changing world.

IMPLICATIONS AND FUTURE DIRECTIONS

Reframing education beyond the classroom in uncertain times compels significant rethinking of traditional learning theories and pedagogical assumptions. The shift from formal, institution-bound education to more fluid, experiential, and hybrid modes of learning disrupts long-standing binariessuch as formal/informal, teacher/learner, and curriculum/environment, which have shaped modern educational theories (Grubaugh et al., 2023). Constructivist and experiential learning frameworks gain renewed relevance but must now be reinterpreted through the lens of digital ecologies, socio-emotional resilience, and planetary consciousness. Learning is increasingly understood as a networked, lifelong, and situated process that unfolds across digital platforms, community spaces, and life experiences.

Critical pedagogy also finds a new urgency in this context, as learners navigate not only content but also structural inequalities, misinformation, and crises of meaning. Uncertain times, marked by pandemics, ecological breakdown, and technological disruption, require educational theory to engage more explicitly with affect, trauma, care, and ethics. This broadens the scope of pedagogy to include relational and affective dimensions, emphasizing solidarity, empathy, and adaptability (Canagarajah, 2023).Furthermore, the theories of knowledge production and validation are being reconfigured. The dominance of credentialed expert-driven epistemologies is challenged by the growing legitimacy of vernacular knowledge, peer learning, and open educational resources. This calls for a pluralistic re-theorization of epistemic authority and educational legitimacy. In sum, the theoretical implications of this shift are profound: they not only alter how we conceptualize learning, but also redefine the purposes, sites, and politics of education in the 21st century.

As learning increasingly transcends traditional classroom settings, there are several promising research opportunities. One critical area is the longitudinal study of informal, hybrid, and community-based learning models, such as makerspaces, digital learning platforms, and peer-to-peer networks, to assess their long-term cognitive, emotional, and social impacts (Migliore et al., 2024). There is also a pressing need to examine how different learners, particularly those from marginalized or under-resourced communities, engage with and benefit from these non-traditional modalities. Another fruitful avenue is the exploration of ecological and place-based pedagogies to foster resilience and systems thinking, especially in the face of climate change and socio-political instability. Furthermore, interdisciplinary inquiry that bridges neuroscience, education technology, and cultural theory can provide deeper insights into how uncertainty and crises influence attention, motivation, and learning strategies. Finally, participatory action research involving students, educators, and communities can help co-create locally relevant and culturally sensitive alternatives to standardized curricula. These lines of inquiry are essential for developing equitable, adaptive, future-oriented educational practices.

Reframing education beyond the classroom has profound implications for educators, policymakers, and learners in navigating uncertain times. Educators emphasize the need to design learning experiences that extend into communities, workplaces, and digital spaces, fostering critical thinking, adaptability, and civic engagement, rather than rote memorization (Hutson & Ceballos, 2023). Policymakers call for more flexible, inclusive, and equitable education systems that recognize informal and experiential learning, especially in marginalized contexts. Technologists and curriculum developers must integrate tools that support autonomy, collaboration, and reflection rather than simply digitizing traditional instruction. Civil society organizations and parents also play crucial roles in shaping learning environments that are

empathetic, resilient, and socially responsive. This expanded view of education acknowledges that, in times of crisis whether ecological, political, or technological learning must be lifelong, situated, and ethically grounded.

CONCLUSION

This chapter has explored how traditional models of education are fundamentally rethought in response to a confluence of global uncertainties, from pandemics and climate crises to rapid technological disruptions and sociopolitical transformations. By situating learning beyond the confines of formal institutions, we examined how education must evolve into a more adaptive, relational, and lifelong process that engages learners as active participants in shaping a complex future (Matsumoto-Royo et al., 2021). Drawing on diverse theoretical perspectives from critical pedagogy, learning sciences, and decolonial education, we argue that learning is deeply contextual, affective, and embedded in everyday life and must reflect the plural realities of learners across cultures and geographies.

We also highlight key challenges and opportunities in expanding the scope of learning, including digital inequalities, epistemic justice, and the importance of reimagining pedagogical authority and assessment. Practical innovations such as community-based learning, peer-to-peer models, and hybrid platforms have emerged as responses to the need for more inclusive, resilient, and democratic education systems (Eden, Chisom, et al., 2024). Ultimately, this chapter contributes to a growing body of thought that sees education not merely as preparation for the future but as a generative act of co-creating it. In doing so, it reframes education as a collective, situated, and transformative practice that fits uncertain times.

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