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Scouting as an Experiential Learning Ecosystem:
Reconfiguring Youth Development Mechanisms in Nonformal Education

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Abstrak

The contemporary landscape of youth development is increasingly characterized by disengagement, declining civic participation, and a growing mismatch between formal education systems and the competencies required in complex, real-world contexts. While experiential learning, positive youth development, and learning ecosystem perspectives offer valuable insights, these theoretical streams remain fragmented, limiting their ability to explain how structured youth programs generate developmental outcomes. This article aims to address this gap by proposing a unified conceptual framework that positions scouting as an experiential learning ecosystem. Using a theory synthesis approach, the study integrates experiential learning processes, developmental outcomes, and multi-level contextual dynamics into a mechanism-based model. The framework explicates how key mechanisms such as reflective internalization, identity formation, social interaction, and institutional scaffolding interact across individual, group, and organizational levels to produce sustained youth development. Theoretically, the model advances a multi-level and process-oriented understanding of learning in nonformal education contexts. It also provides a foundation for empirical testing and offers implications for designing more effective youth development programs in increasingly complex and hybrid learning environments.

Keywords

experiential learning ecosystem; positive youth development; nonformal education; learning ecosystems; youth development mechanisms; scouting education

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1. Introduction

The contemporary landscape of youth development is undergoing a profound transformation, marked by increasing concerns over youth disengagement, declining civic participation, and the growing mismatch between formal education systems and the evolving competencies required in the 21st century. Traditional schooling models, while effective in delivering standardized knowledge, are often limited in fostering non-cognitive capabilities such as resilience, adaptability, leadership, and social responsibility (Pellegrino & Hilton, 2012; OECD, 2020; Darling-Hammond *et al.*, 2020). These limitations have intensified scholarly and policy interest in alternative learning environments that can support holistic youth development through more dynamic, context-rich, and experience-based approaches (Cantor *et al.*, 2021; National Academies of Sciences, 2018).

Nonformal education systems have emerged as critical complements to formal schooling in addressing these developmental gaps. Unlike formal education, which is typically structured around standardized curricula and institutional constraints, nonformal learning environments emphasize flexibility, participation, and experiential engagement (Coombs & Ahmed, 1974; Rogers, 2004; Marsick & Watkins, 2015). Within this domain, scouting represents one of the most enduring and globally recognized youth development movements, characterized by its integration of outdoor activities, community engagement, and value-based education. Scouting offers a distinctive pedagogical model in which learning is embedded within real-life contexts, enabling young people to develop practical competencies alongside character and identity formation.

Central to the educational philosophy of scouting is experiential learning, a theoretical tradition that conceptualizes learning as a process whereby knowledge is created through the transformation of experience (Kolb, 1984; Kolb & Kolb, 2005). Experiential learning theory (ELT) posits that learning occurs through a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb & Kolb, 2009). This process highlights the importance of reflection as a mechanism for meaning-making and internalization, enabling learners to connect experiences with prior knowledge and future action (Boud *et al.*, 1993; Passarelli & Kolb, 2012). Contemporary research further reinforces the effectiveness of experiential learning in promoting higher-order thinking, behavioral change, and long-term retention across educational contexts (Morris, 2020; Chan *et al.*, 2021; Hahn *et al.*, 2022).

Despite its strengths, experiential learning theory has been criticized for its predominantly individualistic orientation and limited attention to social and contextual dynamics (Fenwick, 2001; Illeris, 2007). More recent developments have sought to address these limitations by incorporating social interaction, emotional engagement, and environmental context into the learning process, thereby aligning ELT with more holistic and situated perspectives of learning (Kolb & Kolb, 2017; Beard & Wilson, 2013; Roberts, 2012). These developments are particularly relevant in scouting contexts, where learning is inherently social, collaborative, and embedded within dynamic environments.

Parallel to the development of experiential learning theory, the field of positive youth development (PYD) has advanced understanding of how structured programs contribute to desirable developmental outcomes. PYD shifts the focus from deficit-based models toward strength-based approaches that emphasize the cultivation of competence, confidence, connection, character, and caring (Lerner *et al.*, 2005; Benson *et al.*, 2006; Geldhof *et al.*, 2014). Empirical research demonstrates that participation in well-designed youth programs is associated with improved psychosocial outcomes, including identity formation, leadership development, and civic engagement (Catalano *et al.*, 2004; Taylor *et al.*, 2017; Bowers *et al.*, 2021). However, while PYD effectively identifies desired outcomes, it often provides

limited insight into the underlying mechanisms that connect participation in programs such as scouting to these outcomes (Ciocanel *et al.*, 2017; Lerner & Callina, 2014).

In response to these limitations, scholars have increasingly turned to ecological and systems perspectives to better understand the complexity of learning and development. Bronfenbrenner's ecological systems theory conceptualizes development as the result of interactions across multiple levels of influence, including individual, relational, and institutional contexts (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). Building on this foundation, the concept of learning ecosystems has emerged to describe how learning occurs across interconnected environments, spanning formal, nonformal, and informal settings (Barron, 2006; Jackson, 2013; Siemens, 2005). Recent work further emphasizes that learning is shaped by dynamic interactions among relationships, contexts, and experiences, rather than occurring within isolated domains (Osher *et al.*, 2020; Cantor *et al.*, 2021).

However, despite the richness of these theoretical traditions, a significant gap remains. Experiential learning theory provides a robust account of micro-level learning processes, positive youth development frameworks focus on macro-level outcomes, and ecosystem perspectives emphasize contextual complexity. Yet, these perspectives remain largely fragmented, with limited integration into a coherent framework that explains how experiential processes, embedded within social and organizational contexts, generate developmental outcomes in structured youth programs such as scouting (Morris, 2020; Bowers *et al.*, 2021). This fragmentation constrains both theoretical advancement and practical application, as it limits the ability to design, evaluate, and scale effective nonformal education programs.

The absence of a mechanism-based, multi-level framework is particularly problematic in the context of scouting, where learning emerges through the interaction of experiences, social relationships, and institutional structures. Without such a framework, scouting risks being interpreted primarily as a set of activities rather than as a structured system of developmental processes. Addressing this gap requires an integrative approach that bridges experiential learning, youth development, and ecosystem perspectives to provide a more comprehensive explanation of how development occurs.

This article responds to this need by proposing a conceptual framework that positions scouting as an experiential learning ecosystem. By integrating experiential learning theory, positive youth development, and ecological systems perspectives, the study develops a mechanism-based model that explains how learning processes, social interactions, and organizational structures interact to produce developmental outcomes. The framework highlights key mechanisms such as reflective internalization, identity formation, social engagement, and contextual alignment, while also incorporating insights from motivation theory, particularly self-determination theory, to explain how these processes sustain engagement and development (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020).

The contributions of this study are both theoretical and practical. Theoretically, it advances a multi-level, mechanism-based understanding of experiential learning in nonformal education, addressing longstanding fragmentation in the literature. Practically, it offers actionable insights for designing more effective scouting programs, enhancing leadership training, and informing youth development policies. Furthermore, the framework aligns with broader global priorities, particularly those articulated in the OECD Learning Compass 2030 and the Sustainable Development Goals, by emphasizing the role of nonformal education in fostering holistic, resilient, and socially responsible individuals (OECD, 2020; National Academies of Sciences, 2018).

The remainder of the article is structured as follows. The next section reviews the theoretical foundations of experiential learning, positive youth development, and learning ecosystems. This is followed by the identification of the theoretical gap and the development of the conceptual approach. The article then presents the proposed framework and formal

propositions, before concluding with a discussion of theoretical contributions, practical implications, and directions for future research.

2. Theoretical Background

This section synthesizes three major theoretical streams that underpin the present study: experiential learning theory, positive youth development, and learning ecosystem perspectives. Rather than treating these bodies of literature as independent domains, the review adopts an integrative approach that highlights their complementarities while identifying critical gaps in their intersection. This synthesis forms the theoretical foundation for conceptualizing scouting as a multi-level experiential learning ecosystem.

2.1 Experiential Learning Theory and Its Evolution

Experiential learning theory (ELT) provides a foundational framework for understanding how individuals construct knowledge through direct engagement with experience. Rooted in the seminal work of David A. Kolb, ELT conceptualizes learning as a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984; Kolb & Kolb, 2005, 2009). This cyclical model emphasizes that learning is not a linear accumulation of information but a recursive transformation of experience into knowledge through reflection and application.

A central mechanism within ELT is reflection, which enables learners to reinterpret experiences, integrate prior knowledge, and generate new insights. Reflection functions as a bridge between experience and conceptual understanding, facilitating deeper cognitive and behavioral transformation (Boud *et al.*, 1993; Passarelli & Kolb, 2012). Empirical studies consistently demonstrate that structured reflection significantly enhances learning outcomes, including critical thinking, problem-solving, and behavioral change (Yardley *et al.*, 2012; Chan *et al.*, 2021; Hahn *et al.*, 2022).

Despite its widespread adoption, ELT has been subject to theoretical critique. Early critiques highlight its predominantly individualistic orientation and limited consideration of social, emotional, and contextual dimensions of learning (Fenwick, 2001; Illeris, 2007). These limitations have prompted subsequent theoretical developments that extend ELT into more holistic and situated frameworks. Contemporary perspectives emphasize that learning is socially constructed, embodied, and context-dependent, emerging through interactions with both people and environments (Kolb & Kolb, 2017; Beard & Wilson, 2013; Roberts, 2012).

Recent systematic reviews further refine ELT by emphasizing its dynamic and adaptive nature. For instance, Morris (2020) argues that experiential learning should be understood as a non-linear process influenced by contextual factors and learner agency. Similarly, Manolis *et al.* (2013) highlight the variability in learning styles and the importance of aligning experiential activities with individual and situational characteristics. These developments suggest a shift from a static model toward a more complex and integrative understanding of experiential learning, making it particularly relevant for nonformal and outdoor learning environments.

2.2 Positive Youth Development (PYD) and Developmental Outcomes

Positive youth development (PYD) represents a major paradigm shift in the study of youth development, moving away from deficit-based models toward strength-based approaches that emphasize potential, resilience, and thriving. PYD frameworks conceptualize development as the alignment between individual strengths and supportive environmental resources (Lerner *et al.*, 2005; Benson *et al.*, 2006). Central to this perspective is the widely recognized 5Cs model; competence, confidence, connection, character, and caring, which

captures key developmental outcomes associated with successful youth trajectories (Geldhof *et al*., 2014; Lerner, 2017).

Empirical research provides robust evidence for the effectiveness of PYD-oriented programs. Large-scale evaluations and meta-analyses indicate that participation in structured youth programs is associated with improvements in psychosocial well-being, academic engagement, and civic participation (Catalano *et al*., 2004; Taylor *et al*., 2017; Ciocanel *et al*., 2017). These outcomes are particularly pronounced in programs that offer opportunities for meaningful participation, leadership development, and sustained engagement (Eccles & Gootman, 2002; Roth & Brooks-Gunn, 2003).

However, despite its strengths, PYD literature has been critiqued for its limited focus on underlying mechanisms. While the framework effectively identifies desired outcomes, it often treats the relationship between program participation and developmental results as relatively direct, without fully specifying the processes that mediate this relationship (Lerner & Callina, 2014; Bowers *et al*., 2021). This limitation is reflected in variability across program effectiveness, suggesting that contextual and process-related factors play a critical role in shaping outcomes (Ciocanel *et al*., 2017).

Recent advancements attempt to address this gap by emphasizing process-oriented perspectives. For example, studies highlight the importance of identity formation, social bonding, and experiential engagement as mediating mechanisms that translate program participation into developmental outcomes (Catalano *et al*., 2019; Arnold & Gagnon, 2020). Additionally, emerging research underscores the role of motivation and psychological needs: particularly autonomy, competence, and relatedness, in sustaining youth engagement and development (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020). These developments point to the need for integrating PYD with experiential and contextual theories to achieve a more comprehensive understanding of youth development processes.

2.3 Nonformal and Experiential Education Systems

Nonformal education systems provide flexible and context-responsive learning environments that complement formal schooling. Unlike formal education, which is structured around standardized curricula and institutional constraints, nonformal education emphasizes adaptability, participation, and experiential engagement (Coombs & Ahmed, 1974; Rogers, 2004; Marsick & Watkins, 2015). These characteristics make nonformal settings particularly suitable for youth development initiatives that require holistic and context-sensitive approaches.

Within nonformal education, experiential and outdoor learning play a central role. Outdoor education, in particular, offers immersive experiences that engage learners cognitively, physically, and emotionally. Empirical evidence suggests that exposure to natural environments enhances attention, well-being, and social development (Kuo *et al*., 2019; Mygind *et al*., 2019; Tillmann *et al*., 2018). Furthermore, challenging outdoor experiences promote resilience, problem-solving skills, and leadership development by placing individuals in unfamiliar and demanding contexts (Hattie *et al*., 1997; Duerden *et al*., 2012; Thurber *et al*., 2007).

Systematic reviews further support the effectiveness of outdoor and experiential education. For example, Becker *et al*. (2017) demonstrate that regular outdoor learning experiences positively influence academic, social, and health outcomes. Similarly, Chan *et al*. (2021) show that experiential learning programs significantly enhance prosocial behavior, empathy, and subjective well-being among adolescents. These findings reinforce the argument that experiential and nonformal education environments provide unique opportunities for holistic development that are difficult to replicate in formal settings.

However, the effectiveness of nonformal education is not uniform. Research indicates that program quality, facilitation, and structure significantly influence outcomes (Stern *et al*., 2014; Paisley *et al*., 2008). The interplay between structured guidance and experiential freedom is particularly critical, as it determines the extent to which learners can meaningfully engage with experiences while benefiting from reflection and support (Goldenberg *et al*., 2005; Garst *et al*., 2011). This highlights the importance of examining nonformal education not merely as a setting but as a structured system of learning processes.

2.4 Learning Ecosystem and Systems Perspective

The learning ecosystem perspective offers a comprehensive framework for understanding how learning occurs across interconnected contexts. Rooted in the ecological systems theory of Urie Bronfenbrenner, this perspective conceptualizes development as the result of interactions across multiple layers, including individual, relational, and institutional environments (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). This multi-level approach emphasizes that development cannot be fully understood in isolation from its broader context.

Building on this foundation, the concept of learning ecosystems has emerged to describe how learning is distributed across formal, nonformal, and informal environments (Barron, 2006; Jackson, 2013). Learning ecosystems are characterized by interconnected experiences, relationships, and resources that collectively shape developmental outcomes. Contemporary perspectives further extend this view by emphasizing networked learning environments, where digital, social, and institutional elements interact dynamically (Siemens, 2005; National Academies of Sciences, 2018).

Recent research highlights the importance of alignment across contexts within learning ecosystems. Studies show that coherence between individual motivation, social relationships, and institutional structures enhances learning and development, while fragmentation can hinder outcomes (Osher *et al*., 2020; Cantor *et al*., 2021; Darling-Hammond *et al*., 2020). This insight underscores the need to examine learning as a system of interdependent components rather than isolated processes.

Additionally, emerging work conceptualizes learning ecosystems as complex adaptive systems, characterized by feedback loops, non-linearity, and dynamic interactions (Immordino-Yang *et al*., 2019; Sawyer, 2014). This perspective shifts the focus from static models to dynamic processes, emphasizing how interactions across levels generate emergent developmental outcomes. Such an approach is particularly relevant for understanding environments like scouting, where learning is distributed across activities, relationships, and organizational structures.

2.5 Toward Integration: Experiential Learning Ecosystems

Despite the richness of these theoretical traditions, the literature remains fragmented. Experiential learning theory provides detailed explanations of individual learning processes, positive youth development focuses on developmental outcomes, and ecosystem perspectives emphasize contextual complexity. However, these approaches are rarely integrated into a coherent framework that explains how learning processes operate within complex systems to produce developmental outcomes (Morris, 2020; Bowers *et al*., 2021).

This fragmentation reflects a broader limitation in educational research, where emphasis on either micro-level cognition or macro-level outcomes often overlooks the meso-level mechanisms that connect them (Billett, 2016; Sawyer, 2014). As a result, key processes such as reflection, social interaction, identity formation, and contextual alignment are often treated in isolation rather than as interconnected components of a unified system.

The limitations of siloed approaches are particularly evident in the context of scouting. Existing studies often examine specific elements such as outdoor experiences, group dynamics, or program outcomes separately, leading to incomplete explanations of how scouting functions as a developmental system (Garst *et al.*, 2011; Sibthorp *et al.*, 2007). This lack of integration constrains both theoretical advancement and practical application.

Emerging efforts to conceptualize learning as an ecosystem provide a promising direction but remain underdeveloped. While these approaches emphasize interconnectedness and context, they often lack a clear articulation of mechanisms that link processes, contexts, and outcomes (Barron, 2006; Kuo *et al.*, 2019). Addressing this gap requires a system-level framework that integrates experiential learning processes, youth development mechanisms, and ecosystem dynamics.

Therefore, this study proposes the concept of an experiential learning ecosystem as a unifying framework. By integrating experiential learning theory, positive youth development, and ecological systems perspectives, this approach aims to provide a comprehensive, mechanism-based understanding of how scouting operates as a developmental system. This integration not only advances theoretical understanding but also offers practical insights for designing more effective youth development programs in nonformal education contexts.

3. Identifying the Theoretical Gap

Building on the preceding synthesis, a critical theoretical gap emerges in the literature on experiential learning, youth development, and learning ecosystems. While each of these domains has developed substantial explanatory power, their integration into a coherent, mechanism-based framework remains limited. This fragmentation is particularly evident in complex developmental environments such as scouting, where learning processes, social interactions, and organizational structures operate simultaneously but are rarely theorized as an interconnected system (Morris, 2020; Bowers *et al.*, 2021).

At the micro level, experiential learning theory provides a well-established account of how individuals learn through cycles of experience, reflection, conceptualization, and experimentation (Kolb, 1984; Kolb & Kolb, 2009). These models offer strong explanatory power regarding cognitive and reflective processes that drive learning transformation (Boud *et al.*, 1993; Yardley *et al.*, 2012). Empirical research further confirms that experiential learning enhances engagement, skill acquisition, and behavioral change across diverse educational contexts (Chan *et al.*, 2021; Hahn *et al.*, 2022). However, these contributions remain largely focused on individual-level mechanisms, with limited attention to how such processes are shaped by social interaction and institutional context.

At the macro level, positive youth development frameworks provide comprehensive accounts of desired developmental outcomes, including competence, confidence, connection, character, and caring (Lerner *et al.*, 2005; Geldhof *et al.*, 2014; Lerner, 2017). These frameworks highlight the importance of supportive environments and structured participation in fostering positive developmental trajectories (Eccles & Gootman, 2002; Catalano *et al.*, 2019). Nevertheless, PYD literature often treats the relationship between program participation and developmental outcomes as relatively direct, offering limited specification of the mechanisms that translate experiential engagement into sustained developmental change (Lerner & Callina, 2014; Ciocanel *et al.*, 2017).

Between these two levels lies a critical gap at the meso level. Existing literature lacks a clear articulation of the mechanisms that connect experiential learning processes with youth development outcomes within structured program contexts. While constructs such as reflection, social interaction, and engagement are frequently acknowledged, their interrelationships and dynamic functioning remain underexplored (Passarelli & Kolb, 2012; Roth & Brooks-Gunn, 2003). This absence of meso-level theorization significantly limits the

explanatory depth of current frameworks and constrains their applicability in real-world program design.

This limitation reflects a broader issue in contemporary educational research, where the focus tends to oscillate between individual cognition and aggregate outcomes, often neglecting the interactional processes that mediate between them (Billett, 2016; Sawyer, 2014). As a result, theoretical models frequently fail to capture how learning processes are embedded within social relationships and organizational structures, particularly in nonformal education environments.

A related gap concerns the insufficient system-based conceptualization of scouting as a developmental environment. Existing research on outdoor education and youth programs provides valuable insights into specific components such as nature-based experiences, group dynamics, and skill development (Garst *et al*., 2011; Sibthorp *et al*., 2007; Duerden *et al*., 2012). However, these studies rarely conceptualize scouting as an integrated system in which experiences, relationships, and institutional structures interact dynamically to produce developmental outcomes. This limitation reduces the ability to generalize findings and to develop scalable models of youth development.

Furthermore, current literature tends to underemphasize the dynamic interactions between actors and contexts. Learning ecosystem perspectives acknowledge that development occurs across multiple environments, yet empirical and conceptual work often treats these environments as loosely connected rather than dynamically integrated (Barron, 2006; Osher *et al*., 2020). In practice, especially in settings such as scouting, learning emerges from continuous interactions between individuals, peer groups, leaders, and organizational structures. Ignoring these interactions limits the ability to explain how developmental outcomes are generated and sustained.

Another important limitation is the continued reliance on descriptive and practice-based approaches in the study of nonformal education programs. Many studies focus on documenting program characteristics or evaluating outcomes without developing robust theoretical explanations of the underlying mechanisms (Goldenberg *et al*., 2005; Paisley *et al*., 2008; Stern *et al*., 2014). While such approaches provide valuable empirical insights, they contribute less to theory building and offer limited guidance for designing more effective programs.

In addition, the growing complexity of learning environments introduces new challenges that are not fully addressed by existing frameworks. The integration of digital technologies, the diversification of learning contexts, and the increasing emphasis on lifelong learning require models that can capture dynamic, multi-level, and adaptive processes (Siemens, 2005; National Academies of Sciences, 2018; Cantor *et al*., 2021). Traditional models that focus on single-level or linear processes are insufficient to explain these complexities.

Taken together, these limitations point to the absence of an integrated, mechanism-based, and multi-level framework that explains how experiential learning processes, embedded within social interactions and institutional contexts, generate youth development outcomes. Addressing this gap requires a shift from fragmented theoretical approaches toward a system-oriented perspective that captures the interplay between processes, contexts, and outcomes.

This study responds to this need by proposing an experiential learning ecosystem framework that integrates experiential learning theory, positive youth development, and ecological systems perspectives. By explicitly articulating mechanisms such as reflective internalization, identity formation, social interaction, and contextual alignment, the framework seeks to bridge the gap between micro-level learning processes and macro-level developmental outcomes. In doing so, it advances a more comprehensive and explanatory

understanding of youth development in nonformal education contexts, particularly within scouting.

4. Conceptual Approach and Analytical Strategy

This section outlines the conceptual and analytical foundations used to address the identified theoretical gap. The study adopts a theory-building approach that integrates experiential learning theory, positive youth development, and ecological systems perspectives into a unified conceptual framework. The objective is to develop a mechanism-based explanation of how scouting functions as an experiential learning ecosystem, capturing the dynamic interactions between learning processes, social relationships, and institutional structures.

4.1 Conceptual Development Approach

This study employs a theory synthesis approach to integrate multiple theoretical traditions into a coherent framework. Theory synthesis is particularly appropriate for complex phenomena that involve multiple interacting mechanisms across different levels of analysis (Noe *et al.*, 2014; Morris, 2020). Rather than generating new empirical data, this approach systematically combines existing theories to produce novel conceptual insights and advance theoretical understanding.

The integration is guided by three complementary theoretical streams. First, experiential learning theory contributes a process-oriented perspective, emphasizing how individuals construct knowledge through cycles of experience and reflection (Kolb, 1984; Kolb & Kolb, 2005). Second, positive youth development provides an outcome-oriented framework that identifies key developmental dimensions such as competence, character, and connection (Lerner *et al.*, 2005; Geldhof *et al.*, 2014). Third, ecological systems theory introduces a contextual perspective, situating learning and development within interconnected social and institutional environments (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006).

A central component of this approach is cross-theoretical alignment. Instead of treating each theory as an independent lens, the study identifies conceptual overlaps and complementarities among them. For example, the reflective processes emphasized in experiential learning theory align with identity formation processes in youth development literature, while ecological systems theory situates these processes within broader relational and institutional contexts (Passarelli & Kolb, 2012; Lerner & Callina, 2014). This alignment enables the construction of a unified framework that bridges micro-level processes and macro-level outcomes.

In addition, the conceptual development is informed by advances in learning sciences that emphasize the integration of cognitive, social, and emotional processes. Contemporary research suggests that learning is inherently relational and context-dependent, shaped by interactions between individuals and their environments (Immordino-Yang *et al.*, 2019; Darling-Hammond *et al.*, 2020). Incorporating these perspectives strengthens the theoretical robustness of the framework and ensures its relevance to contemporary educational contexts.

4.2 Analytical Strategy

The analytical strategy is based on thematic synthesis of the literature, focusing on identifying recurring constructs, mechanisms, and relationships across studies. This process involves systematically reviewing the literature to extract key themes such as reflection, experiential engagement, social interaction, identity formation, and contextual influence (Chan *et al.*, 2021; Kuo *et al.*, 2019; Morris, 2020). These themes serve as the building blocks for constructing the conceptual framework.

A core element of the analysis is mechanism identification. Rather than focusing solely on variables or outcomes, the study emphasizes underlying processes that explain how and why developmental change occurs. Mechanisms such as reflective internalization, social bonding, identity construction, and experiential repetition are identified as key drivers linking learning experiences to developmental outcomes (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020). This mechanism-based approach enhances explanatory depth and aligns with recent calls for process-oriented theorization in education research.

The analysis also adopts a multi-level perspective, recognizing that youth development occurs across interconnected levels. At the individual level, the focus is on cognitive and affective processes such as reflection, motivation, and meaning-making (Kolb & Kolb, 2009; Boud *et al.*, 1993). At the group level, social interactions, peer relationships, and collaborative activities are examined as key contexts for identity formation and skill development (Sibthorp *et al.*, 2007; Garst *et al.*, 2011). At the organizational level, program structures, leadership practices, and institutional norms are analyzed as factors that shape and enable learning processes (Eccles & Gootman, 2002; Catalano *et al.*, 2019).

This multi-level analytical strategy allows for a more comprehensive understanding of how processes and contexts interact. It moves beyond single-level explanations and captures the complexity of real-world learning environments, where individual experiences are embedded within social and institutional systems (Bronfenbrenner & Morris, 2006; National Academies of Sciences, 2018).

4.3 Framework Construction Logic

The construction of the conceptual framework follows a process-based logic that links experiential learning mechanisms to developmental outcomes through intermediate stages. At the core of this logic is the sequence of experience, reflection, internalization, identity formation, and outcome realization.

Experiential learning provides the initial input through direct engagement in activities. These experiences are then processed through reflection, enabling individuals to interpret events, extract meaning, and integrate new knowledge with existing cognitive structures (Kolb & Kolb, 2005; Passarelli & Kolb, 2012). Reflection leads to internalization, where insights become embedded in cognitive and behavioral patterns, influencing future actions and decisions.

This process extends to identity formation, where repeated experiences and social interactions contribute to the development of self-concept, values, and behavioral orientations (Lerner & Callina, 2014; Geldhof *et al.*, 2014). Identity functions as a mediating mechanism that connects learning processes with broader developmental outcomes such as leadership, character, and civic engagement (Damon, 2004; Catalano *et al.*, 2004).

Importantly, these processes are embedded within social and institutional contexts. Social interaction structures, including peer relationships and mentorship, shape how experiences are interpreted and internalized (Roth & Brooks-Gunn, 2003; Osher *et al.*, 2020). Institutional scaffolding, including program design, leadership practices, and organizational culture, provides the conditions that enable or constrain learning processes (Eccles & Gootman, 2002; Garst *et al.*, 2011).

The framework also incorporates feedback loops, reflecting the recursive nature of learning and development. Developmental outcomes influence future motivation, engagement, and participation, thereby sustaining the experiential learning ecosystem over time (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020). This dynamic perspective aligns with contemporary views of learning as a continuous and adaptive process rather than a linear progression.

5. Results: Conceptual Development

This section presents the core theoretical contribution of the study by developing a conceptual framework that positions scouting as an experiential learning ecosystem. The framework integrates experiential learning processes, youth development outcomes, and ecosystem dynamics into a unified, multi-level model. It explicates how learning processes are embedded within social interactions and institutional structures, thereby generating sustained developmental outcomes across individual, relational, and organizational levels.

The figure organizes the experiential learning ecosystem as a multi-level system in which processes, social structures, and institutional conditions interact to produce developmental outcomes. It clarifies how mechanisms operate across levels rather than within isolated domains. The structure emphasizes hierarchy, interaction, and feedback as core analytical features.

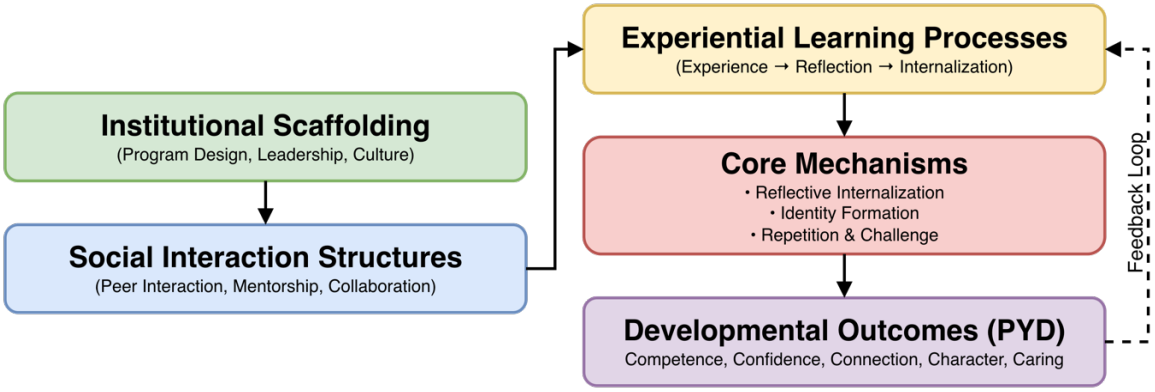

Figure 1. Experiential Learning Ecosystem Model of Scouting
Source: Author's conceptualization

As illustrated in Figure 1, the framework conceptualizes scouting as a multi-level system in which institutional scaffolding, social interaction structures, and experiential learning processes are hierarchically organized yet dynamically interconnected. The model emphasizes that developmental outcomes emerge through core mechanisms such as reflective internalization and identity formation, rather than from participation alone. By incorporating feedback loops, Figure 1 clarifies how outcomes recursively shape future engagement, reinforcing the system's adaptive and sustained developmental capacity.

5.1 Core Constructs

The proposed framework is built upon four interrelated core constructs that collectively define scouting as an experiential learning ecosystem.

First, experiential learning processes constitute the foundational mechanism through which individuals engage in activities, reflect on experiences, and construct meaning. These processes are iterative and recursive, emphasizing the transformation of experience into knowledge through reflection, conceptualization, and application (Kolb, 1984; Kolb & Kolb, 2009; Morris, 2020). Experiential engagement is not limited to participation but involves active cognitive and emotional processing that shapes learning outcomes.

Second, developmental outcomes represent the intended and emergent results of participation in scouting. Drawing from positive youth development literature, these outcomes include competence, confidence, character, connection, and caring, as well as extended dimensions such as leadership capacity and identity formation (Lerner *et al.*, 2005; Geldhof *et al.*, 2014; Lerner, 2017). These outcomes are not immediate outputs but develop progressively through sustained engagement and repeated experiential cycles (Catalano *et al.*, 2019; Taylor *et al.*, 2017).

Third, social interaction structures refer to the relational environments in which learning occurs. Peer interaction, teamwork, mentorship, and group dynamics create opportunities for collaboration, feedback, and shared meaning-making (Sibthorp *et al.*, 2007; Garst *et al.*, 2011). These relational processes are critical for reinforcing learning, facilitating identity formation, and sustaining engagement over time (Roth & Brooks-Gunn, 2003; Osher *et al.*, 2020).

Fourth, institutional scaffolding encompasses the organizational conditions that enable and shape learning processes. Program design, leadership practices, facilitation quality, and organizational culture provide the structure within which experiential learning unfolds (Eccles & Gootman, 2002; Priest & Gass, 2017). Effective scaffolding ensures that experiences are purposeful, reflective, and aligned with developmental objectives, thereby enhancing program impact (Noe *et al.*, 2014; Stern *et al.*, 2014).

A concise table is necessary here to stabilize the conceptual vocabulary and prevent ambiguity across constructs that are repeatedly used throughout the framework. By compressing definitions into analytically precise elements, the table strengthens terminological consistency and supports theoretical clarity.

Table 1. Core Constructs of the Experiential Learning Ecosystem

Construct	Core Definition	Key Mechanism	Level of Analysis
Experiential Learning Processes	Cyclical transformation of experience into knowledge through reflection and action	Reflective internalization	Individual
Developmental Outcomes	Progressive formation of psychosocial capacities (e.g., competence, character, connection)	Identity formation and capability development	Individual (emergent)
Social Interaction Structures	Relational contexts enabling collaboration, feedback, and shared meaning-making	Social mediation and identity negotiation	Group
Institutional Scaffolding	Organizational conditions shaping and supporting learning processes	Structured facilitation and contextual alignment	Organizational

Source: Developed by the author

The analytical contribution of Table 1 lies in its role as a conceptual anchor for the framework. By explicitly aligning constructs with their underlying mechanisms and levels of analysis, Table 1 reduces definitional ambiguity and ensures that subsequent arguments—particularly those involving multi-level interactions and mechanisms—are interpreted consistently within a unified theoretical structure.

Together, these constructs form an interconnected system in which processes, relationships, and structures interact dynamically to produce developmental outcomes.

5.2 Mechanisms of Development

The framework identifies several core mechanisms that explain how experiential learning processes translate into youth development outcomes. These mechanisms represent the central theoretical advancement of the study, moving beyond descriptive models toward a process-based explanation of development.

The first mechanism is experience leading to reflection and internalization. Direct engagement in activities provides the raw material for learning, which is then processed through reflection to generate meaning and understanding (Boud *et al.*, 1993; Passarelli & Kolb, 2012). Internalization occurs when these insights become integrated into cognitive and behavioral patterns, influencing future actions and decisions (Kolb & Kolb, 2005; Yardley *et*

al., 2012). This mechanism aligns with contemporary perspectives that view learning as a process of meaning-making rather than information acquisition.

The second mechanism is social interaction leading to identity formation. Interaction with peers and mentors enables individuals to negotiate roles, receive feedback, and develop a sense of belonging (Roth & Brooks-Gunn, 2003; Sibthorp *et al*., 2007). Through repeated social engagement, individuals construct and refine their identities, aligning personal values with group norms and expectations (Geldhof *et al*., 2014; Lerner & Callina, 2014). Identity formation serves as a key mediating process that connects experiential learning with long-term developmental outcomes.

The third mechanism is repetition leading to competency development. Repeated participation in structured activities allows individuals to practice skills, receive feedback, and improve performance over time. Sustained engagement strengthens both competence and confidence, reinforcing learning and enabling skill mastery (Catalano *et al*., 2019; Chan *et al*., 2021). This iterative process highlights the importance of continuity and program duration in achieving meaningful developmental outcomes.

The fourth mechanism is challenge leading to resilience building. Exposure to challenging and unfamiliar situations, particularly in outdoor environments, promotes adaptability, problem-solving, and emotional regulation (Hattie *et al*., 1997; Duerden *et al*., 2012). These experiences push individuals beyond their comfort zones, enabling the development of resilience and coping strategies (Mygind *et al*., 2019; Kuo *et al*., 2019). Challenge functions as a catalytic mechanism that accelerates development through constructive stress and adaptive response.

This figure clarifies the mechanism-based logic through which scouting experiences are transformed into developmental outcomes. It shifts the argument from activity participation to process explanation by showing how reflection, social interaction, repetition, and challenge operate as developmental mechanisms.

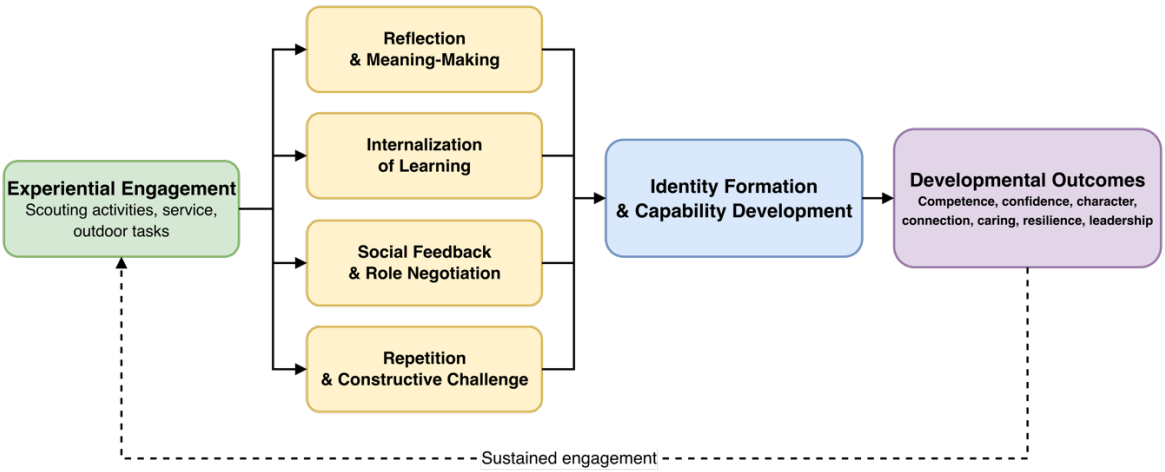

Figure 2. Mechanism-Based Development Process in Scouting
Source: Author's conceptualization

The framework articulated in Figure 2 clarifies how scouting experiences become developmentally consequential through identifiable mechanisms rather than through participation alone. Reflection and internalization translate experience into meaning, while social feedback, repetition, and challenge support identity formation, competence, resilience, and leadership. Figure 2 therefore strengthens the article's mechanism-based argument by making the causal logic between experiential engagement and youth development more explicit.

Collectively, these mechanisms illustrate how experiential learning operates as a dynamic system of interacting processes that produce developmental change.

5.3 Multi-Level Dynamics

The conceptual framework operates across three interconnected levels, reflecting the multi-level nature of learning ecosystems.

This figure clarifies the cross-level architecture of the experiential learning ecosystem. It separates individual, group, and organizational levels while showing that youth development emerges from their interaction rather than from any single level alone.

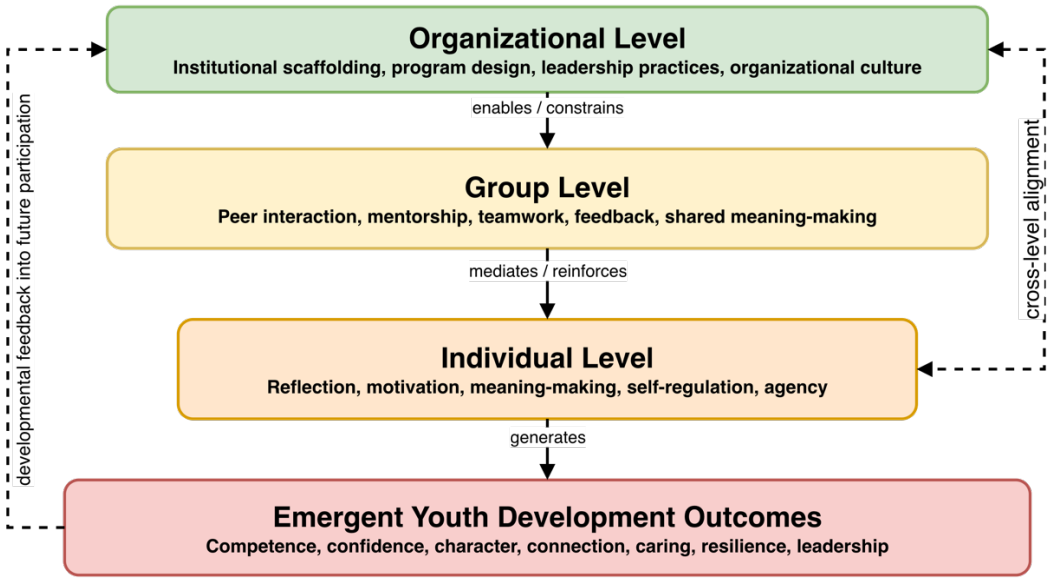

Figure 3. Multi-Level Interaction Model of the Experiential Learning Ecosystem
Source: Author's conceptualization

Figure 3 reorients the analysis toward the interaction between levels of the scouting ecosystem. Organizational structures shape group processes, group processes mediate individual learning, and individual learning generates developmental outcomes that feed back into future participation. By clarifying these cross-level dynamics, Figure 3 supports the article's claim that youth development in scouting is systemic, relational, and mechanism-driven rather than reducible to isolated activities.

At the individual level, learning is driven by cognitive, emotional, and motivational processes such as reflection, meaning-making, and self-regulation (Kolb & Kolb, 2009; Ryan & Deci, 2020). These processes determine how individuals interpret experiences and translate them into knowledge, skills, and behavioral change (Schunk & DiBenedetto, 2020). Individual agency plays a critical role in shaping learning outcomes, as learners actively construct meaning from experiences.

At the group level, social interactions play a central role in shaping development. Peer relationships, teamwork, and collaborative activities provide opportunities for feedback, role negotiation, and shared learning (Sibthorp *et al.*, 2007; Garst *et al.*, 2011). Group dynamics influence both the quality of experiences and the extent to which individuals internalize learning outcomes (Barron, 2006; Cantor *et al.*, 2021). Social context acts as a mediating layer that amplifies or constrains individual learning processes.

At the organizational level, institutional structures define the conditions under which learning occurs. Program design, leadership competence, and organizational culture determine the availability, quality, and consistency of experiential learning opportunities (Eccles & Gootman, 2002; Catalano *et al.*, 2004). Alignment across these levels enhances developmental outcomes, while misalignment can limit program effectiveness (Bronfenbrenner & Morris, 2006; National Academies of Sciences, 2018).

This multi-level perspective highlights that youth development is not the result of isolated processes but emerges from the interaction of mechanisms operating across levels.

5.4 Boundary Conditions

The effectiveness of the experiential learning ecosystem is contingent upon several boundary conditions that influence the functioning of the framework.

Cultural context shapes values, norms, and expectations, influencing how experiences are interpreted and internalized (Rogers, 2004; Cantor *et al.*, 2021). Differences in cultural settings may lead to variations in program implementation and developmental outcomes.

Program quality is a critical determinant of effectiveness. High-quality programs provide structured experiences, skilled facilitation, and opportunities for reflection, all of which enhance learning outcomes (Stern *et al.*, 2014; Ciocanel *et al.*, 2017). Variability in program quality contributes to differences in developmental impact.

Leadership competence plays a central role in mediating learning processes. Effective leaders facilitate reflection, manage group dynamics, and create supportive environments that enable learning and development (Priest & Gass, 2017; Garst *et al.*, 2011). Leadership quality directly influences the functioning of the ecosystem.

Digital integration represents an emerging factor that reshapes experiential learning processes. The incorporation of digital tools expands learning opportunities but also introduces new challenges related to engagement, authenticity, and depth of experience (Siemens, 2005; Hirsh-Pasek *et al.*, 2015). Hybrid learning environments require careful design to maintain experiential integrity.

5.5 Societal Relevance

The proposed framework has significant implications for addressing contemporary societal challenges. One of the most pressing issues is youth disengagement, characterized by declining participation in civic and community activities (Cantor *et al.*, 2021; Osher *et al.*, 2020). By providing meaningful and engaging learning experiences, scouting can play a critical role in re-engaging youth and fostering active citizenship.

Another challenge is the growing demand for leadership capacity in increasingly complex and uncertain environments. Experiential learning ecosystems provide opportunities for developing leadership through practice, reflection, and social interaction, thereby contributing to sustainable human development (Lerner *et al.*, 2005; Catalano *et al.*, 2019).

The framework also aligns with global development priorities, particularly those related to quality education, well-being, and strong institutions. By integrating experiential learning with youth development and ecosystem perspectives, scouting contributes to the formation of capable, resilient, and socially responsible individuals (OECD, 2020; National Academies of Sciences, 2018).

6. Conceptual Model and Propositions

This section formalizes the proposed experiential learning ecosystem framework into a structured conceptual model and develops a set of theoretically grounded propositions. The model integrates experiential learning processes, social interaction structures, and institutional conditions within a multi-level system. It specifies how underlying mechanisms such as reflection, identity formation, and contextual alignment jointly generate youth developmental outcomes. By articulating these relationships, the model provides a foundation for empirical testing and further theoretical refinement.

A structured table is required at this stage to organize the propositions into a clear analytical schema, making explicit the linkage between theoretical statements, underlying mechanisms, and expected outcomes. This enhances both interpretability and empirical testability.

Table 2. Propositions and Underlying Mechanisms in the Experiential Learning Ecosystem

	Proposition	Underlying Mechanism	Expected Outcome	Level of Analysis
P1	Experiential learning influences development	Reflective internalization	Skill and behavioral transformation	Individual
P2	Social interaction mediates identity formation	Social feedback and role negotiation	Identity development and belonging	Group
P3	Institutional scaffolding moderates learning	Structured facilitation	Consistent and effective learning outcomes	Organizational
P4	Cross-level alignment strengthens outcomes	Contextual coherence	Reinforced and sustained development	Multi-level
P5	Challenging experiences enhance resilience	Adaptive response to challenge	Resilience and leadership capacity	Individual
P6	Digital integration reshapes learning mechanisms	Hybrid interaction dynamics	Expanded but altered learning engagement	Multi-level

Source: Developed by the author

The analytical value of Table 2 lies in its ability to translate abstract propositions into a structured mechanism-outcome logic. By explicitly mapping each proposition to its operative mechanism and level of analysis, Table 2 clarifies how the conceptual model can be empirically examined and theoretically extended.

6.1 Conceptual Model Overview

The Experiential Learning Ecosystem Model conceptualizes scouting as a dynamic system composed of three interdependent layers: experiential processes at the individual level, social interaction structures at the group level, and institutional scaffolding at the organizational level.

At the core of the model lies the experiential learning cycle, in which individuals engage in concrete experiences, reflect on those experiences, and internalize insights that shape knowledge, skills, and behavior (Kolb, 1984; Kolb & Kolb, 2009). This process is not isolated but embedded within social contexts, where interaction with peers and mentors facilitates meaning-making and reinforces learning (Sibthorp *et al*., 2007; Roth & Brooks-Gunn, 2003).

Social interaction structures function as a mediating layer that transforms individual experiences into shared understanding and identity development. Through collaboration, feedback, and role negotiation, participants construct and refine their identities, aligning personal values with group norms (Geldhof *et al*., 2014; Lerner & Callina, 2014). These relational processes are essential for translating experiential engagement into sustained developmental outcomes.

Institutional scaffolding provides the structural conditions that enable or constrain these processes. Program design, leadership practices, and organizational culture determine the quality, consistency, and intentionality of experiential learning (Eccles & Gootman, 2002; Catalano *et al*., 2019). Effective scaffolding ensures that experiences are not random but structured in ways that promote reflection, engagement, and development.

The model also incorporates feedback loops that reflect the recursive nature of learning and development. Developmental outcomes influence future motivation, engagement, and

participation, thereby sustaining the learning ecosystem over time (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020). This dynamic structure positions scouting as an adaptive system rather than a linear intervention.

6.2 Propositions

Proposition 1
Experiential learning processes positively influence youth developmental outcomes through reflective internalization mechanisms.

Experiential learning theory posits that knowledge emerges through the transformation of experience via reflection and conceptualization (Kolb, 1984; Kolb & Kolb, 2005). Reflection enables individuals to interpret experiences, integrate them with prior knowledge, and internalize new understandings (Boud *et al.*, 1993; Yardley *et al.*, 2012). Empirical evidence demonstrates that structured experiential learning programs enhance prosocial behavior, well-being, and skill development when reflective processes are effectively facilitated (Chan *et al.*, 2021; Hahn *et al.*, 2022). Reflective internalization therefore functions as a primary mechanism linking experiential engagement to developmental outcomes (Morris, 2020).

Proposition 2
Social interaction structures mediate the relationship between experiential engagement and identity formation.

Social interaction is a central component of learning in group-based environments such as scouting. Peer engagement, collaboration, and mentorship provide opportunities for feedback, role negotiation, and meaning-making (Sibthorp *et al.*, 2007; Roth & Brooks-Gunn, 2003). Through repeated interaction, individuals construct and refine their identities, aligning personal beliefs with collective norms and expectations (Geldhof *et al.*, 2014; Lerner & Callina, 2014). This mediating role of social interaction highlights the importance of relational contexts in transforming experience into identity development (Osher *et al.*, 2020).

Proposition 3
Institutional scaffolding moderates the effectiveness of experiential learning processes in producing developmental outcomes.

The impact of experiential learning is contingent upon the quality of organizational conditions in which it occurs. Program design, leadership competence, and organizational culture shape the extent to which experiences are meaningful and developmentally effective (Eccles & Gootman, 2002; Catalano *et al.*, 2004). High-quality programs provide structured opportunities for engagement, reflection, and feedback, thereby enhancing learning outcomes (Ciocanel *et al.*, 2017; Stern *et al.*, 2014). Conversely, weak or inconsistent scaffolding may limit the effectiveness of experiential processes. This moderating role underscores the importance of institutional context in shaping developmental trajectories (Noe *et al.*, 2014).

Proposition 4
Alignment across individual, group, and organizational levels strengthens developmental outcomes.

The learning ecosystem perspective emphasizes the importance of coherence across multiple levels of influence. When individual motivation, group dynamics, and organizational structures are aligned, learning processes are reinforced and outcomes are enhanced (Bronfenbrenner & Morris, 2006; Barron, 2006). Empirical research shows that alignment across contexts supports engagement, learning, and development, while misalignment can hinder these processes (Cantor *et al.*, 2021; Darling-Hammond *et al.*, 2020). This proposition highlights the integrative nature of the experiential learning ecosystem.

Proposition 5
Exposure to challenging experiential conditions enhances resilience and leadership development.

Experiential and outdoor education literature consistently demonstrates that challenging environments play a critical role in youth development. Activities involving uncertainty, risk, and problem-solving promote adaptability, emotional regulation, and leadership skills (Hattie *et al.*, 1997; Duerden *et al.*, 2012). Immersive nature-based experiences further contribute to mental, social, and emotional well-being (Kuo *et al.*, 2019; Mygind *et al.*, 2019). Challenge therefore acts as a catalytic mechanism that accelerates developmental growth within experiential learning ecosystems.

Proposition 6
Integration of digital elements reshapes experiential learning mechanisms within the ecosystem.

The increasing integration of digital technologies introduces new dynamics into experiential learning environments. Digital tools can enhance access, communication, and engagement, but may also alter the nature of experience and interaction (Siemens, 2005; Hirsh-Pasek *et al.*, 2015). Hybrid learning environments require adaptation of traditional experiential models to maintain authenticity and depth of learning (National Academies of Sciences, 2018; OECD, 2020). This proposition reflects the evolving nature of experiential learning ecosystems in the digital era.

7. Discussion

This section interprets the proposed experiential learning ecosystem framework by situating it within broader theoretical debates and recent empirical findings. It demonstrates how the model advances understanding of youth development and experiential learning while offering implications for practice and policy. By integrating multiple theoretical perspectives into a coherent, mechanism-based framework, the study responds to longstanding fragmentation in the literature and provides a more comprehensive explanation of how scouting generates developmental outcomes.

7.1 Theoretical Contributions

The primary theoretical contribution of this study lies in the integration of three major bodies of literature: experiential learning theory, positive youth development, and ecological systems theory. While each of these traditions has developed independently, their combination enables a more comprehensive understanding of youth development as a dynamic and multi-level process (Kolb, 1984; Lerner *et al.*, 2005; Bronfenbrenner & Morris, 2006). This integration bridges the gap between process-oriented and outcome-oriented perspectives by linking how learning occurs with what outcomes are produced.

A second contribution is the shift from descriptive to mechanism-based theorization. Existing research on scouting and nonformal education has largely focused on program characteristics or outcome evaluation, often without explicitly identifying the processes that drive developmental change (Garst *et al.*, 2011; Paisley *et al.*, 2008). By articulating mechanisms such as reflective internalization, identity formation, and social interaction, the proposed framework enhances explanatory depth and aligns with recent calls for process-oriented theory development in education research (Ryan & Deci, 2020; Schunk & DiBenedetto, 2020). This approach enables a more precise understanding of how experiential learning translates into developmental outcomes.

Third, the study advances a multi-level theoretical perspective that captures the interaction between individual, group, and organizational factors. This perspective reflects

contemporary developments in learning sciences that emphasize the role of relationships, context, and systems in shaping development (Cantor *et al.*, 2021; Osher *et al.*, 2020). By incorporating these levels into a unified framework, the model moves beyond reductionist explanations and offers a more holistic understanding of learning in real-world settings.

Finally, the framework contributes to the conceptualization of learning ecosystems by explicitly incorporating mechanisms into system-level analysis. While prior research has emphasized interconnected contexts and distributed learning, it has often lacked detailed explanations of how these elements interact to produce outcomes (Barron, 2006; National Academies of Sciences, 2018). The present study addresses this limitation by linking processes, contexts, and outcomes within a single explanatory structure, thereby advancing ecosystem theory toward a more mechanism-based orientation.

7.2 Comparison with Existing Literature

The proposed framework extends experiential learning theory by situating it within a broader social and organizational context. Traditional ELT models focus on individual learning cycles, emphasizing cognitive and reflective processes (Kolb & Kolb, 2009). While these models provide valuable insights, they have been criticized for insufficient attention to contextual and relational dynamics (Illeris, 2007). The present framework addresses this limitation by embedding experiential processes within social interaction structures and institutional scaffolding, thereby expanding the scope of ELT to more complex learning environments.

In relation to positive youth development, the framework complements existing models by providing a process-based explanation of how developmental outcomes are generated. PYD literature has been effective in identifying key outcomes such as competence and character but has offered less clarity regarding the pathways through which these outcomes emerge (Catalano *et al.*, 2019; Geldhof *et al.*, 2014). By integrating experiential learning mechanisms, the present study provides a more detailed account of how participation in structured programs leads to identity formation and long-term development (Lerner & Callina, 2014).

The study also contributes to the learning ecosystem literature by advancing a more explicit articulation of mechanisms within system dynamics. Existing ecosystem frameworks emphasize interconnectedness and context but often lack specificity in explaining how learning processes unfold within these systems (Jackson, 2013; Siemens, 2005). By identifying key mechanisms such as reflection, social interaction, and contextual alignment, the proposed model enriches the conceptualization of learning ecosystems and enhances their explanatory power.

Furthermore, the framework aligns with emerging perspectives that conceptualize learning as a complex adaptive system. In such systems, outcomes are not the result of linear cause-and-effect relationships but emerge from interactions across multiple levels and contexts (Immordino-Yang *et al.*, 2019; Sawyer, 2014). This perspective reinforces the dynamic and recursive nature of the experiential learning ecosystem proposed in this study.

7.3 Practical Implications

The framework has important implications for the design and implementation of scouting programs and other nonformal education initiatives. One key implication is the need to prioritize experiential learning processes that include structured reflection. Program designers should ensure that activities are not only engaging but also accompanied by opportunities for reflection, feedback, and application, as these elements are critical for internalizing learning (Boud *et al.*, 1993; Chan *et al.*, 2021).

Leadership development emerges as another critical area. Leaders play a central role in facilitating experiential learning, managing group dynamics, and creating supportive environments. Enhancing leadership competence through targeted training can significantly

improve program effectiveness and participant outcomes (Priest & Gass, 2017; Garst *et al.*, 2011).

The framework also informs curriculum development in nonformal education. By aligning experiential activities with developmental objectives, programs can systematically cultivate competencies such as leadership, resilience, and social responsibility. This alignment ensures that learning experiences are both meaningful and developmentally effective (Eccles & Gootman, 2002; Darling-Hammond *et al.*, 2020).

Additionally, the identification of multi-level dynamics suggests that program effectiveness depends on coherence across individual, group, and organizational levels. Practitioners should therefore focus on creating alignment between participant motivation, group processes, and institutional design to maximize developmental impact.

7.4 Policy Implications

At the policy level, the study underscores the importance of recognizing nonformal education as a critical component of national education systems. Programs such as scouting provide complementary learning opportunities that address gaps in formal education, particularly in areas related to character development, leadership, and civic engagement (OECD, 2020; National Academies of Sciences, 2018).

The framework also supports the development of more effective youth development strategies. By identifying key mechanisms and boundary conditions, policymakers can design interventions that are evidence-based and context-sensitive, improving both scalability and sustainability (Catalano *et al.*, 2004; Ciocanel *et al.*, 2017).

Furthermore, integrating nonformal education into broader policy frameworks can enhance institutional capacity and social cohesion. Recognizing the role of experiential learning ecosystems in national development may lead to more coordinated and impactful policy initiatives that support youth engagement and development (Cantor *et al.*, 2021; Osher *et al.*, 2020).

7.5 Future Research Directions

The conceptual nature of this study opens several avenues for future research. First, empirical validation of the proposed framework is necessary to test the relationships between experiential processes, ecosystem structures, and developmental outcomes. Both quantitative and qualitative approaches can be employed to examine these relationships across different contexts (Morris, 2020; Chan *et al.*, 2021).

Second, cross-cultural research is needed to explore how the framework operates in diverse cultural settings. Cultural differences may influence program design, participant experiences, and developmental outcomes, highlighting the need for context-sensitive adaptations (Rogers, 2004; Cantor *et al.*, 2021).

Third, future studies should examine the role of digital technologies in shaping experiential learning ecosystems. As learning environments become increasingly hybrid, understanding how digital integration affects engagement, reflection, and development becomes critical (Siemens, 2005; Hirsh-Pasek *et al.*, 2015).

Finally, advanced analytical approaches such as multilevel modeling and system dynamics may be employed to capture the complexity and recursive nature of experiential learning ecosystems. These approaches can provide deeper insights into how interactions across levels generate emergent outcomes over time.

7.6 Societal and SDG Implications

The proposed framework has significant implications for addressing broader societal challenges. One of the most pressing issues is youth disengagement, which has been linked to declining civic participation and social cohesion (Cantor *et al*., 2021; Osher *et al*., 2020). By providing meaningful and engaging learning experiences, experiential learning ecosystems can help re-engage youth and foster active citizenship.

The framework also contributes to addressing leadership gaps in contemporary society. By emphasizing experiential learning and identity formation, scouting and similar programs can develop leadership capacities that are essential for navigating complex social and organizational environments (Lerner *et al*., 2005; Catalano *et al*., 2019).

In addition, the framework aligns with global development priorities, particularly those related to quality education, well-being, and strong institutions. Experiential learning ecosystems support holistic development that extends beyond academic achievement, contributing to the realization of Sustainable Development Goals related to education, health, and governance (OECD, 2020; National Academies of Sciences, 2018).

8. Conclusion

This study set out to develop a theory-driven conceptual framework that explains how scouting operates as an experiential learning ecosystem. By integrating experiential learning theory, positive youth development, and ecological systems perspectives, the study advances a mechanism-based understanding of youth development in nonformal education contexts. The proposed framework demonstrates that developmental outcomes are not merely the result of program participation, but emerge from the interaction of experiential processes, social relationships, and institutional structures operating across multiple levels.

The primary theoretical contribution lies in bridging fragmented literatures and introducing a multi-level, process-oriented framework that explicitly articulates key developmental mechanisms. By identifying processes such as reflective internalization, identity formation, social interaction, and contextual alignment, the study moves beyond descriptive and outcome-based approaches toward a more explanatory model of how youth development occurs. This contributes to the advancement of experiential learning theory by extending it into social and organizational domains, enriches positive youth development frameworks by clarifying underlying mechanisms, and strengthens the conceptualization of learning ecosystems through a mechanism-based perspective.

In addition to its theoretical contributions, the framework offers practical insights for the design and implementation of youth development programs. It highlights the importance of structured experiential activities, facilitated reflection, supportive social environments, and effective organizational scaffolding in producing meaningful developmental outcomes. These insights are particularly relevant for practitioners and educators seeking to enhance the effectiveness of nonformal education initiatives.

The study also underscores the relevance of experiential learning ecosystems in addressing broader societal challenges. By fostering resilience, leadership, and social responsibility, scouting and similar programs can contribute to the development of capable and engaged citizens. This aligns with global priorities related to quality education, well-being, and institutional development, reinforcing the role of nonformal education in supporting sustainable development.

Future research should focus on empirically testing the proposed framework across different contexts and populations. Longitudinal studies are particularly important to capture the dynamic and recursive nature of experiential learning processes. Additionally, further

investigation is needed to understand how digital integration and cultural variation influence the functioning of experiential learning ecosystems.

In conclusion, this study provides a comprehensive and integrative framework that repositions scouting as a structured system of learning and development rather than a collection of activities. By advancing a mechanism-based and multi-level perspective, the study contributes to a deeper understanding of youth development and offers a foundation for both theoretical advancement and practical innovation in nonformal education.

References

Barron, B. (2006). Interest and self-sustained learning as catalysts of development: A learning ecology perspective. *Human Development, 49*(4), 193–224. https://doi.org/10.1159/000094368

Beard, C., & Wilson, J. P. (2013). *Experiential learning: A handbook for education, training and coaching* (2nd ed.). Kogan Page.

Becker, C., Lauterbach, G., Spengler, S., Dettweiler, U., & Mess, F. (2017). Effects of regular classes in outdoor education settings: A systematic review on students' learning, social and health dimensions. *International Journal of Environmental Research and Public Health, 14*(5), 485. https://doi.org/10.3390/ijerph14050485

Benson, P. L., Scales, P. C., Hamilton, S. F., & Sesma, A. (2006). Positive youth development: Theory, research, and applications. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology* (6th ed., pp. 894–941). Wiley.

Billett, S. (2016). *Apprenticeship and applied learning*. Springer.

Boud, D., Keogh, R., & Walker, D. (1993). *Reflection: Turning experience into learning*. Routledge.

Bowers, E. P., Geldhof, G. J., Johnson, S. K., Hilliard, L. J., Hershberg, R. M., Lerner, J. V., & Lerner, R. M. (2021). Promoting positive youth development: Lessons from the 4-H study. *Journal of Youth Development, 16*(3), 1–20. https://doi.org/10.5195/jyd.2021.1033

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology* (pp. 793–828). Wiley.

Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2021). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science, 25*(1), 1–15. https://doi.org/10.1080/10888691.2020.1787163

Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings. *Annals of the American Academy of Political and Social Science, 591*(1), 98–124. https://doi.org/10.1177/0002716203260102

Catalano, R. F., Skinner, M. L., Alvarado, G., Kapungu, C., Reavley, N., Patton, G. C., … Petroni, S. (2019). Positive youth development programs in low- and middle-income countries. *Journal of Adolescent Health, 65*(1), S15–S31. https://doi.org/10.1016/j.jadohealth.2019.03.024

Chan, C. K. Y., Fong, E. T. Y., Luk, L. Y. Y., & Ho, R. (2021). A review of experiential learning in higher education. *Journal of Applied Research in Higher Education, 13*(4), 1012–1027. https://doi.org/10.1108/JARHE-03-2020-0073

Ciocanel, O., Power, K., Eriksen, A., & Gillings, K. (2017). Effectiveness of positive youth development interventions. *Journal of Youth and Adolescence, 46*(3), 483–504. https://doi.org/10.1007/s10964-016-0555-6

Coombs, P. H., & Ahmed, M. (1974). *Attacking rural poverty: How nonformal education can help*. Johns Hopkins University Press.

Damon, W. (2004). What is positive youth development? *Annals of the American Academy of Political and Social Science, 591*(1), 13–24. https://doi.org/10.1177/0002716203260092

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Duerden, M. D., Widmer, M. A., Taniguchi, S. T., & McCoy, J. K. (2012). The impact of outdoor adventure education. *Journal of Outdoor Recreation, Education, and Leadership, 4*(4), 231–245.

Eccles, J., & Gootman, J. A. (2002). *Community programs to promote youth development*. National Academies Press.

Fenwick, T. (2001). *Experiential learning: A theoretical critique*. Routledge.

Garst, B. A., Browne, L. P., & Bialeschki, M. D. (2011). Youth development and the camp experience. *New Directions for Youth Development, 2011*(130), 73–87. https://doi.org/10.1002/yd.398

Geldhof, G. J., Bowers, E. P., Boyd, M. J., Mueller, M. K., Napolitano, C. M., Schmid, K. L., & Lerner, R. M. (2014). Creation of short and very short measures of the Five Cs of positive youth development. *Journal of Research on Adolescence, 24*(1), 163–176. https://doi.org/10.1111/jora.12039

Goldenberg, M., McAvoy, L., & Klenosky, D. B. (2005). Outcomes from the components of an outdoor education program. *Journal of Experiential Education, 28*(2), 123–146.

Hahn, T., Minola, T., & Eddleston, K. (2022). Experiential learning in entrepreneurship education. *Academy of Management Learning & Education, 21*(1), 1–20. https://doi.org/10.5465/amle.2020.0024

Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and outward bound. *Review of Educational Research, 67*(1), 43–87. https://doi.org/10.3102/00346543067001043

Hirsh-Pasek, K., Zosh, J. M., Golinkoff, R. M., Gray, J. H., Robb, M. B., & Kaufman, J. (2015). Putting education in educational apps. *Psychological Science in the Public Interest, 16*(1), 3–34. https://doi.org/10.1177/1529100615569721

Illeris, K. (2007). *How we learn: Learning and non-learning in school and beyond*. Routledge.

Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. (2019). The brain basis for integrated social, emotional, and academic development. *Educational Researcher, 48*(3), 127–142. https://doi.org/10.3102/0013189X19842679

Jackson, N. (2013). *Lifewide learning, education and personal development*. CreateSpace.

Kolb, D. A. (1984). *Experiential learning*. Prentice Hall.

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces. *Academy of Management Learning & Education, 4*(2), 193–212. https://doi.org/10.5465/amle.2005.17268566

Kolb, A. Y., & Kolb, D. A. (2009). Experiential learning theory. *Academy of Management Learning & Education, 8*(2), 297–306. https://doi.org/10.5465/amle.2009.41788836

Kolb, A. Y., & Kolb, D. A. (2017). The experiential educator. *Experience Based Learning Systems*.

Kuo, M., Barnes, M., & Jordan, C. (2019). Do experiences with nature promote learning? *Frontiers in Psychology, 10*, 305. https://doi.org/10.3389/fpsyg.2019.00305

Lerner, R. M. (2017). Positive youth development. *Journal of Youth Development, 12*(2), 1–8.

Lerner, R. M., Almerigi, J. B., Theokas, C., & Lerner, J. V. (2005). Positive youth development. *Journal of Early Adolescence, 25*(1), 10–16. https://doi.org/10.1177/0272431604273211

Lerner, R. M., & Callina, K. S. (2014). The study of character development. *Journal of Youth Development, 9*(2), 5–21.

Manolis, C., Burns, D. J., Assudani, R., & Chinta, R. (2013). Assessing experiential learning styles. *Journal of Marketing Education, 35*(1), 44–55. https://doi.org/10.1177/0273475312465092

Marsick, V. J., & Watkins, K. E. (2015). Informal and incidental learning. *New Directions for Adult and Continuing Education, 2015*(89), 25–34.

Morris, T. H. (2020). Experiential learning: A systematic review. *Educational Research Review, 30*, 100325. https://doi.org/10.1016/j.edurev.2020.100325

Mygind, E., Stevenson, M. P., Liebst, L. S., Konvalinka, I., Bentsen, P., & Hjortso, C. N. (2019). Stress response to nature-based education. *Health & Place, 58*, 102136. https://doi.org/10.1016/j.healthplace.2019.102136

National Academies of Sciences, Engineering, and Medicine. (2018). *How people learn II*. National Academies Press. https://doi.org/10.17226/24783

Noe, R. A., Clarke, A. D. M., & Klein, H. J. (2014). Learning in the twenty-first-century workplace. *Annual Review of Organizational Psychology, 1*, 245–275. https://doi.org/10.1146/annurev-orgpsych-031413-091321

OECD. (2020). *OECD learning compass 2030*. OECD Publishing.

Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2020). Drivers of human development. *Applied Developmental Science, 24*(1), 6–36. https://doi.org/10.1080/10888691.2017.1398650

Paisley, K., Furman, N., Sibthorp, J., & Gookin, J. (2008). Student learning in outdoor education. *Journal of Experiential Education, 30*(3), 201–213.

Passarelli, A. M., & Kolb, D. A. (2012). Using experiential learning theory. *Simulation & Gaming, 43*(1), 69–79. https://doi.org/10.1177/1046878111420357

Pellegrino, J. W., & Hilton, M. L. (2012). *Education for life and work*. National Academies Press.

Priest, S., & Gass, M. A. (2017). *Effective leadership in adventure programming* (3rd ed.). Human Kinetics.

Roberts, J. W. (2012). *Beyond learning by doing*. Routledge.

Rogers, A. (2004). *Non-formal education*. Springer.

Roth, J. L., & Brooks-Gunn, J. (2003). What exactly is a youth development program? *Applied Developmental Science, 7*(2), 94–111. https://doi.org/10.1207/S1532480XADS0702_6

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation. *Contemporary Educational Psychology, 61*, 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Sawyer, R. K. (2014). *The Cambridge handbook of the learning sciences* (2nd ed.). Cambridge University Press.

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology, 60*, 101832. https://doi.org/10.1016/j.cedpsych.2019.101832

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Sibthorp, J., Paisley, K., & Gookin, J. (2007). Exploring participant development through adventure-based programming. *Journal of Experiential Education, 30*(2), 111–126.

Stern, M. J., Powell, R. B., & Ardoin, N. M. (2014). What difference does it make? *Journal of Environmental Education, 45*(3), 183–198. https://doi.org/10.1080/00958964.2014.901251

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development. *Child Development, 88*(4), 1156–1171. https://doi.org/10.1111/cdev.12864

Thurber, C. A., Scanlin, M. M., Scheuler, L., & Henderson, K. A. (2007). Youth development outcomes of the camp experience. *Journal of Experiential Education, 30*(3), 252–275.

Tillmann, S., Tobin, D., Avison, W., & Gilliland, J. (2018). Mental health benefits of interactions with nature. *Journal of Environmental Psychology, 58*, 1–8. https://doi.org/10.1016/j.jenvp.2018.07.004

Yardley, S., Teunissen, P. W., & Dornan, T. (2012). Experiential learning. *Medical Teacher, 34*(2), e102–e115. https://doi.org/10.3109/0142159X.2012.643264