How Might Technology Be Leveraged to Empower Indigenous Youth in Sports?

The Study, the Story, and the Solutions.

David Sinclair, Catamount Fellow, Mount Royal University

with Marty Clark, PHD, Mount Royal University;
and Shannon Lanigan, All In For Sport

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Introduction

This paper explores integrating modern technologies with Western and Indigenous perspectives to empower Indigenous youth through sports. Equipping Web3 technologies, systems thinking, and a Two-Eyed-Seeing approach to this topic effectively blends and contrasts Indigenous wisdom with technology and academic knowledge.

This paper recognizes the excitement of new technologies and opportunities that have emerged with Blockchain and Web3 which will be introduced in more detail. Organizations like All In For Sport demonstrate how these technologies can enhance access to sports through improved governance models, funding structures, and direct and uninterrupted communications and interactions. This paper explores ways innovative technology like blockchain might provide solutions to create more inclusive and equitable sports programs for Indigenous communities. It highlights the need for collaboration between technology and community, advocating for environments where Indigenous youth can thrive in sports.

Background

Sport in Indigenous Communities

Participation in sports offers Indigenous youth a pathway to holistic development, impacting physical, emotional, social, and cultural well-being. Various studies and initiatives support this multi-faceted approach to development, highlighting the importance of physical activity and sports in fostering a strong sense of identity, community engagement, and well-being among Indigenous young people (Aboriginal Sport Circle, Sport For Life, 2019). These aspects are summarized as:

1. **Physical Well-being:** Sports participation is directly linked to improved physical health among Indigenous youth. It promotes fitness and encourages healthy lifestyles, potentially reducing chronic disease risk (Aboriginal Sport Circle, Sport For Life, 2019).

2. **Emotional and Mental Well-being:** Engaging in sports offers emotional support to Indigenous youth by providing a sense of accomplishment, stress relief, and the intrinsic joy of play. This, in turn, contributes to better mental health outcomes by fostering resilience, self-esteem, and confidence, which are crucial elements for emotional stability and psychological health (Aboriginal Sport Circle, Sport For Life, 2019).

3. **Social Well-being:** Sports serve as a social catalyst, offering Indigenous youth opportunities for social interaction, teamwork, and community engagement. Through sports, they can build strong social networks, enhance communication skills, and foster a sense of belonging and inclusion within their communities (Aboriginal Sport Circle, Sport For Life, 2019).

4. **Spiritual and Cultural Well-being:** Sports and physical activities are potent platforms for artistic and creative expression. They provide Indigenous youth with opportunities to connect with their heritage and participate in culturally significant practices, supporting their journey toward self-determination and resilience (Sport for Life, 2023).

The Aboriginal Sport Circle and the Sport for Life Society recommend an Indigenous Long-Term Participant Development Pathway outlining a framework that integrates the above-mentioned dimensions into sports development for Indigenous peoples (Aboriginal Sport Circle, Sport For Life, 2019). It emphasizes the need for culturally relevant sports programming that aligns with an Indigenous community's needs and strengths. This framework highlights the critical role of sports in supporting not only the physical but also the emotional, social, and cultural well-being of Indigenous youth, contributing to the development of healthier communities and fostering generations that are active, culturally connected, and socially engaged (Aboriginal Sport Circle, Sport For Life, 2019).

Despite these benefits, both old and new barriers—from financial constraints and inadequate infrastructure to cultural mismatches and logistical challenges—significantly impact Indigenous community engagement (Hilton, 2021).

Methodology

This paper explores the complex barriers facing Indigenous youth through the lenses of both Western and Indigenous approaches, exploring the Two-Eyed Seeing methodology alongside a systems thinking approach. Systems thinking explores the interactions and patterns within complex systems to identify potential levers of change. The two-eyed seeing approach provides a means to illustrate findings unique to the Indigenous worldview and incorporates some of the author's lived experience relative to their research (Bartlett et al., 2012). This second perspective will be displayed parallel to the Western methodological approach taken thus far in this paper. This dual perspective helps to recognize the interconnected social, economic, and cultural factors, advocating for root-cause interventions (Meadows, 2008; Bartlett et al., 2012). By blending the holistic analysis of systems thinking with the cultural sensitivity of Two-Eyed Seeing, this approach aims to foster sustainable and impactful perspectives on complex social issues, marking a step forward in addressing the multifaceted challenges Indigenous youth face.

The Two-Eyed Seeing

The Two-Eyed Seeing, Also known as "Etuaptmumk" in Mi'kmaq, is a guiding principle that Mi'kmaq Elder Dr. Albert Marshall introduced. It advocates for integrating Indigenous and Western knowledge systems to address complex challenges holistically and innovatively (Bartlett et al., 2012). The concept encourages viewing the world through Indigenous and Western lenses, respecting and utilizing the strengths and insights of each to achieve a more comprehensive understanding and practical solutions.

Two-Eyed Seeing recognizes that Indigenous knowledge systems encompass millennia of observations, experiences, and wisdom related to the natural world, which can complement and enrich Western scientific approaches (Bartlett et al., 2012).

Reid, A. J. et al. (2021) discuss the Two-Eyed Seeing approach, emphasizing integrating Indigenous and Western knowledge to improve health outcomes. This framework could enhance grassroots sports programs by incorporating culturally relevant practices and perspectives, potentially addressing social prosperity issues within Indigenous communities.

This synergy of knowledge systems encourages more inclusive, community-driven solutions that respect and incorporate Indigenous perspectives and needs, ultimately contributing to the health and well-being of Indigenous youth in urban and rural communities.

Furthermore, in the article "Indigenous Knowledge as Vital Contributions to Sustainability," the authors emphasize the significance of Indigenous knowledge systems in education for a sustainable future (Tom, Huaman & McCarty, 2019). They focus on local Indigenous ideas, practices, and visions of education that directly benefit Indigenous Peoples and have broader impacts on all communities. This approach aligns with the concept of synergy between knowledge systems, fostering inclusive and community-driven solutions. By respecting and incorporating Indigenous perspectives and needs, the knowledge systems contribute to the health and well-being of Indigenous youth (Tom, Huaman & McCarty, 2019).

Systems Thinking

Systems Thinking offers a comprehensive framework for understanding the complexities of social issues by examining the relationships and interactions within an entire system. According to Donella H. Meadows, a renowned proponent of systems thinking, a system is defined as 'an interconnected set of elements that is coherently organized in a way that achieves something.' (Meadows, 2015). In the context of systems thinking, this perspective provides a comprehensive framework for understanding the complexities of social issues. Rather than treating social problems in isolation, Systems thinking emphasizes the interconnectedness of various system elements and factors. By viewing problems as integral parts of an overall system, the focus shifts to analyzing interactions and relationships between these system components, ultimately leading to practical solutions (Meadows, 2015). This approach recognizes that social problems are not isolated and are innately complex.
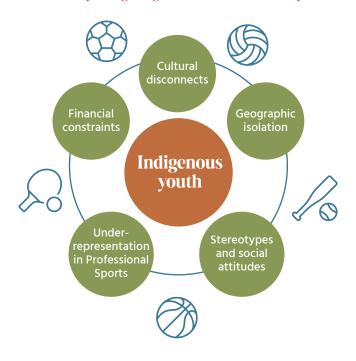
Using systems thinking, one can identify underlying patterns and leverage points in a system. This holistic perspective is crucial for addressing social issues effectively, as it considers the broader context and the dynamic interactions at play.

Combining Two-Eyed Seeing's respect for diverse knowledge systems with systems thinking's holistic analysis, one can develop culturally sensitive and systemically effective solutions, addressing problems comprehensively.

Barriers and Deterrents Within the System

Indigenous youth face significant obstacles rooted in socioeconomic, geographic, and cultural factors, including:

- **Financial constraints** limit access to necessary equipment, infrastructure, and transportation,

- **Geographic isolation** affects those in remote communities, restricting their participation in organized sports (Jones et al., 2017).

- **Cultural disconnects** arise when sports programs do not align with Indigenous values or fail to recognize the importance of cultural practices in physical activities (Dyck and Dumas, 2015).

- **Stereotypes and social attitudes** can discourage participation, creating an unwelcoming environment for Indigenous youth.

- **Underrepresentation in Professional Sports** Although the Indigenous and Aboriginal Peoples make up almost 7% of the global population, among professional athletes, less than 1% come from these groups (NAIG, 2014).

Barriers Impacting Indigenous Youth's Access to Sports

Addressing these barriers requires more than piecemeal solutions; it demands a systemic approach that understands the interconnectivity of these challenges. Systems thinking encourages looking beyond individual barriers to see the broader context influencing sports participation. It fosters holistic strategies that are sensitive to the unique needs of Indigenous communities, ensuring solutions are not only practical but sustainable.

By doing so, solutions that are not only technologically advanced but also culturally sensitive and community-driven can be developed, paving the way for a future where Indigenous youth can fully embrace the benefits of sports participation.

Moreover, community members' engagement in designing and implementing these solutions ensures that programs are culturally relevant and aligned with Indigenous values. This collaborative approach, grounded in systems thinking, promises to create more inclusive, accessible, and culturally resonant sports opportunities for Indigenous youth.

Web3 for Systems Change

Web3 represents the next evolutionary phase of the internet, introducing a decentralized network that leverages blockchain technology to empower users with more control and ownership over their data (Marr, 2022). This innovative approach to Internet services and applications promises to enhance security and privacy and foster a more equitable digital ecosystem free from central authorities such as governments and corporations (Marr, 2022).

Web3, blockchain, and cryptocurrency potentially transform funding and governance models by enabling direct, transparent financial transactions and interactions throughout an organization (Marr, 2022). Blockchain's ledger system ensures secure, traceable donations without traditional intermediaries, allowing more funds to support sports programs directly. Cryptocurrencies facilitate global contributions, broadening potential donor bases. Web3 technologies empower communities through decentralized decision-making, offering greater control over funding allocation and program direction (Marr, 2022). However, potential users should approach cautiously due to the volatility of cryptocurrencies, regulatory uncertainties, and the technical complexities involved in managing blockchain-based systems.

Benefits of Web3

1. **Decentralization:** Web3 is envisioned as a decentralized internet, utilizing blockchain technology for security and distributed computing. This structure is inherently resistant to control by any single entity, promoting a more democratic and equitable online space (Marr, 2022).

2. **Data Ownership and Privacy:** Web3 enables direct peer-to-peer communication and exchanges by allowing trustless transactions without a third party and permissionless interactions. This architecture supports enhanced user privacy and data ownership, empowering individuals to control their digital identities (Marr, 2022).

3. **Enhanced Security:** The application of Decentralized Autonomous Organizations (DAOs) in Web3, where rules and operations are encoded into the blockchain, significantly reduces the need for intermediaries. This setup streamlines operations and fortifies security by minimizing human error and fraud (Marr, 2022).

4. **Financial Inclusivity and Innovation:** The integration of Artificial Intelligence (AI) and the development of the metaverse in Web3 are set to revolutionize user interfaces and machine-to-machine communication, paving the way for innovative applications in various sectors (Marr, 2022).

How DAOs Work

Decentralized Autonomous Organizations or DAOs, are the most direct example of decentralized decision-making in the Web3 space. Operating on blockchain technology, DAOs allow a community of stakeholders to vote on critical decisions, including funding allocations, based on a consensus mechanism. Each member's voting power is often proportional to their stake or contribution to the DAO, ensuring that decisions reflect the community's collective will.

> **Example:** A notable example of DAO-driven funding is the ConstitutionDAO, where 17,000 individuals reportedly pooled together 45 million dollars US over several days, intending to purchase a rare copy of the U.S. Constitution (Roose, 2021). Although the bid was unsuccessful, the process demonstrated how DAOs could mobilize collective funding efforts democratically and transparently.

Web3 technology is a promising tool for fostering inclusivity and accessibility in sports programs. Allowing community members to decide on funding allocation and redesign governance structures, contrasting significantly with traditional funding models. Traditional funding models often challenge grassroots sports programs, especially in Indigenous and remote communities. These challenges include complex application processes, misalignment with community needs, and the reliance on centralized funding sources that may not fully understand or support the unique cultural and logistical aspects of sports programs in these areas. The bureaucratic and paternalistic nature of traditional funding can also slow down the distribution of resources, making it difficult for grassroots initiatives to respond swiftly to community needs.

The DAO approach promotes inclusivity, equity, and sustainability, ensuring the most impacted have a say (The community of the DAO, 2023). This aligns with principles of systems thinking and Indigenous decision-making principles, aiming for more holistic and community-centric solutions. However, while promising, it requires careful implementation to navigate challenges like ensuring broad community engagement and managing consensus-building processes. By leveraging decentralized platforms on Web3, initiatives can bypass traditional funding hurdles and directly support community-based sports programs. This tackles financial and logistical barriers and empowers communities to maintain the cultural integrity of their sports initiatives (Qi, Y. et al, 2024).

Criticisms of Web3

Web3 promises a more secure, private, and user-centric internet but faces significant challenges and criticisms that must be addressed.

1. **Complexity and useability:** Despite its potential, Web3's complexity poses significant usability challenges. The steep learning curve of blockchain and cryptocurrency technologies may hinder widespread adoption (Marr, 2022)

2. **Regulatory and Ethical Challenges:** Web3's decentralized and autonomous nature presents regulatory challenges, especially concerning anonymity and the potential for illegal activities. Additionally, the rapid proliferation of Non-Fungible Tokens (NFTs) and cryptocurrencies has sparked ethical debates regarding speculation and market manipulation (Marr, 2022).

As this technology evolves, finding solutions to these issues will be crucial to fully realizing its potential.

Governance

The approach of community-driven decision-making in sports funding compliments Indigenous ways of knowing, which often emphasize relational understanding, interconnectedness, and holistic perspectives. While the community-driven model focuses on inclusivity and collective decision-making, Indigenous ways of knowing inherently incorporate these principles through deep cultural and spiritual connections to community and environment. Both models seek to empower and benefit the community. Indigenous ways of knowing extend the decision-making process into a broader understanding of well-being, including cultural preservation, environmental stewardship, and intergenerational knowledge transfer (Crowshoe & Manneschmidt, 2002).

The challenges of adopting Web3 technologies include the need for digital literacy and infrastructure and overcoming skepticism around new financial models. However, the potential benefits—increased access to resources, enhanced autonomy for Indigenous communities, and promotion of cultural and social values in sports—argue strongly for its exploration and adoption.

Case Study: All in For Sport

The "All In For Sport" organization aligns with the Truth and Reconciliation Commission's Calls to Action by promoting equitable access to sports and recreation for Indigenous youth, addressing calls around health, youth, and sports. Calls to Action numbers 18 to 24 address health, and numbers 37 to 40 focus on education, including physical education and activities that can encompass sports (Truth and Reconciliation Commission of Canada, 2015).

"All In For Sport" represents a significant innovation in how sports programs are funded by harnessing the power of Web3 technologies. This initiative offers a decentralized platform that directly connects donors with community organizations. All In For Sport leverages the transparency and efficiency of blockchain technology, which underpins Web3, to ensure that funds are allocated in transparent, traceable, and equitable ways. This streamlines the funding process and instills greater community trust (Terrapass, 2021).

The funding mechanism offered through All In For Sport has the potential to catalyze the development of new programs and bolster support for existing initiatives. By effectively lowering the financial and administrative barriers to funding, the initiative can increase sports participation among youth, thereby contributing to their physical, emotional, and social well-being. The emphasis on community-driven goals ensures that programs are culturally relevant and meet the specific needs of communities (Tjønndal, 2016).

Through the lens of systems thinking, "All In For Sport" exemplifies how addressing complex social challenges requires innovative, holistic solutions that consider the entire ecosystem. The initiative's success demonstrates the potential of leveraging technology for social innovation, pointing toward more equitable access to sports and recreation for equity-deserving communities. By promoting equitable access to sports for Indigenous youth, "All In For Sport" responds to these calls by leveraging technology for more inclusive sports programming. It exemplifies a systems thinking approach, providing a holistic solution that acknowledges and aims to rectify a gap in traditional funding models for grassroots sports programs. Individuals can support these efforts by contributing to or advocating for policies that align with the Calls to Action and promoting community-driven, inclusive sports programs.

Conclusion

Integrating systems thinking with Two-Eyed Seeing, supported by the transformative potential of Web3 technologies, offers one approach to reducing barriers for Indigenous youth in sports. Addressing other systemic challenges through innovative, community-driven solutions will illuminate pathways toward creating more inclusive, equitable, and culturally relevant sports programs. The case of All In For Sport exemplifies the practical application of these concepts, demonstrating the impact that can be achieved through collaborative efforts.

Exploring "All In For Sport" within the Truth and Reconciliation Commission's Calls to Action highlights the potential for technology-driven initiatives to address disparities in sports access for Indigenous youth. This approach, rooted in systems thinking, presents a promising avenue for change-making. However, questions about such initiatives' scalability and long-term impact on community health and youth engagement still need to be answered. Recommendations for future efforts include enhancing community involvement in program design, ensuring sustainable funding models, and continuously evaluating the impact of these initiatives to refine and adapt strategies for broader implementation.

The journey towards leveraging Web3 for systemic change in Indigenous youth sports participation is just beginning. A more inclusive and equitable sports landscape is on the horizon as we journey forward with continued exploration, experimentation, and community engagement.

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