Learning Ecosystems

Improving K-12 Education Through Learner-Centered Pedagogy

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Introduction

As technology and society continue to evolve and the learning landscape changes, educational stakeholders have recognized the need for a new form of learning. In this report, learning will refer to the educational processes experienced by students, specifically in K-12 schools, through both formal and informal styles of teaching. As explained in Gütl and Chang (2008), modern instructional design and learning processes must support the development of current society and all of its components. Educational approaches must shift from formal schooling to allowing learners to become more independent in the learning process (Gütl & Chang, 2008).

The change that is required to transform current ways of learning is multi-layered and includes the learner as well as key players in the education system (local organizations, businesses, schools, etc.) while also balancing other aspects of change such as formal and informal education, student interest, and community involvement. It requires a new learning system with new forms of assessments, increased funding, and a fit-for-purpose design (Cisco Systems, 2010). Experts believe that learning in today's context is largely monopolized by institutions that placed formal education at the forefront of learning, but the change needed has begun by the distribution of learning goals to a range of "public, private, and nonprofit providers" (Cisco Systems, 2010, p. 16).

Project Background

The rural community of Crowsnest Pass hidden in the mountains of Southern Alberta has launched an initiative known as "The School as Basecamp – Community as Classroom". This initiative has the potential to become a robust learning ecosystem that would allow for students to feel a sense of belonging and value to their communities. One of the biggest goals that this initiative aims to achieve is to create a sustainable and self-renewable community.

Currently, the Crowsnest Pass is seeing a large number of young individuals leaving the community in order to pursue other endeavours that can be found in bigger cities in Alberta.

The problem comes in when these young individuals do not return to the Crowsnest Pass. By implementing the learning ecosystem, the hope of the Livingstone Range School Division is to create a community that people would return to in order to continue to build the future of the Crowsnest Pass.

Methodology

In partnership with the Livingstone Range School Division and the Institute for Community Prosperity at Mount Royal University, this project was carried out by a fourth-year undergraduate student with the intention of exploring the idea of learning ecosystems and looking into how the K-12 education system can be improved through learning ecosystems and student input. Sources written by educators and educational stakeholders which discuss the importance of education reform in the form of learning ecosystems as well as relevant case studies were used in the formation of this report. Additionally, a community engagement piece conducted with students from the Isabelle Sellon School and the Crowsnest Consolidated High School in the Livingstone Range School Division was integral to the formation of this report. However, none of the data collected from that engagement piece is used and anything written that pertains to that engagement piece is purely a reflection from the author.

Reflections

At the beginning of this project, I found myself reflecting on my experiences in K-12 classrooms. Every student who has been through the system has their own experiences, but a large chunk of these experiences do not reflect what students would describe as the ideal learning experience. The current landscape that students face in formal education often feels like a bubble and in rural communities that do not have easy access to many resources, the exploration of a student's own interests are often unattainable. Researching learning ecosystems and engaging with learners who are currently in the K-12 system has allowed me to see the possible shift in education through learner-centered pedagogy.

Learning Ecosystems

What are learning ecosystems?

A learning ecosystem is a community-driven format of learning that places the learner at the center of attention. Redmond and Mcfayden (2020) make the comparison between a learning ecosystem and a biological ecosystem. In their paper, they describe a biological ecosystem as "a complex of living organisms, their physical environment and all their interrelationships in a particular unit of space" (Redmond & Mcfayden, 2020, p. 77). Learning stakeholders such as educators, students, and curriculum developers, and the learning environment make up the two distinct parts of the ecosystem. Key aspects of learning ecosystems are the ideas that individual learners take charge of their own futures in conjunction with their environments (Laszlo, 2001, as cited in Smitsman et al., 2020), and creating a system that is self-renewable and organized both individual and collective learning for the betterment of the whole community (Spencer-Keyse et al., 2019, as cited in Smitsman et al., 2020).

Another key aspect of learning ecosystems is the involvement of the wider community in the educational journey of the learners. Mobilizing the resources available in the community brings in aspects of a learner's life — family, workplace, and community — and creates a learning environment that puts value in both formal and informal education (Faris, 2010). Learning ecosystems allow for success to be reached in different ways through combinations of educational providers embedded in the community (Savva et al., 2020).
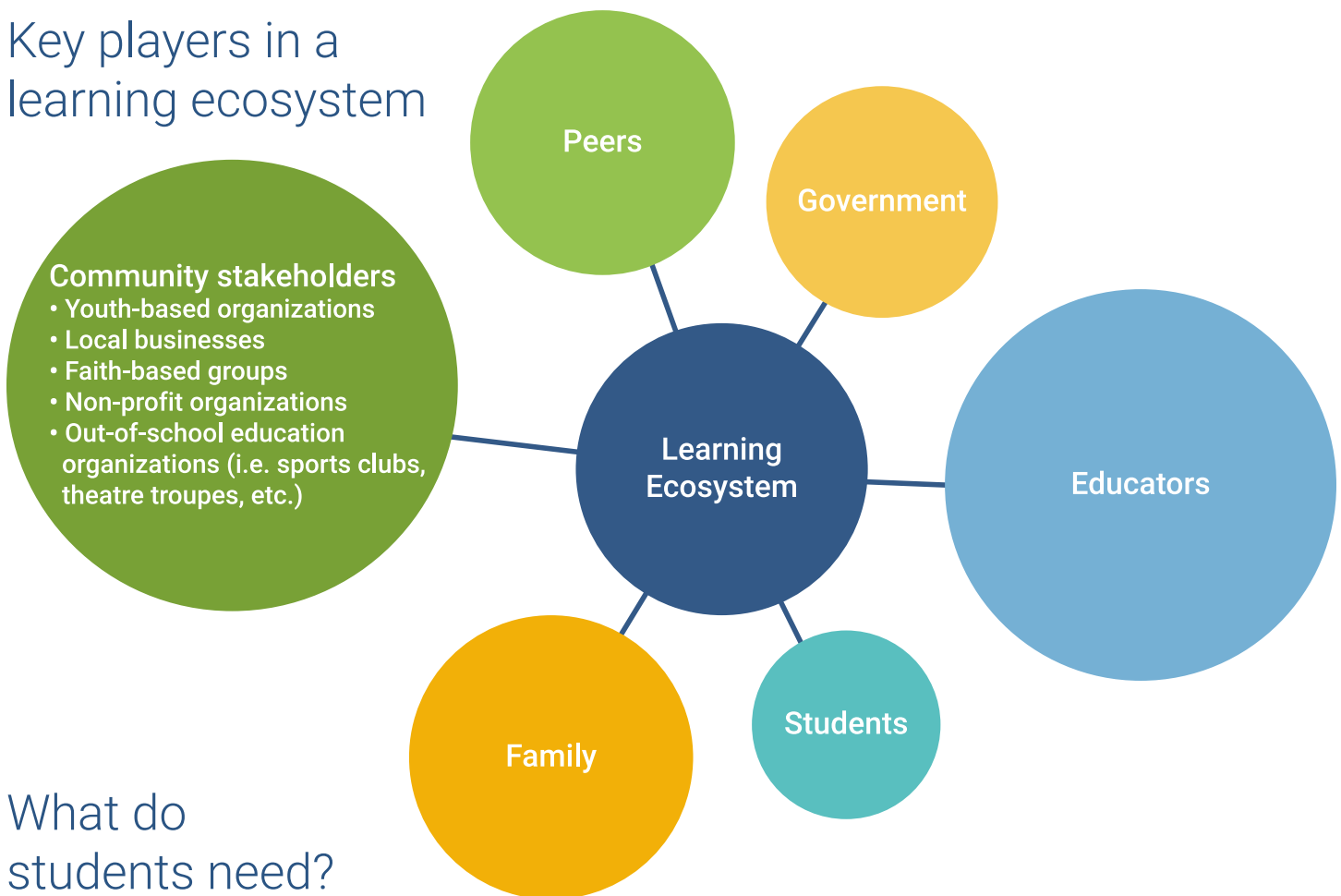
Learner-centered Education

Formal education does not place the learner at the center of the system, and current learning systems are instructor- and course-centric (Redmond & Mcfayden, 2020).

However, learning experts such as Smitsman et al. have held the opinion that the needs and aspirations of this new generation of learners is evidently not satisfied by current, mainstream education systems and they want to be in control of their own learning (2020). Patel-Junankar (2017) describes learner-centered pedagogy as a style of learning that encourages learners to engage with material on a deeper level while also "providing tools and environments for helping learners interpret the multiple perspectives of the world in creating their own world" (Karagiorgi & Symeou, 2005, as cited in Patel-Junankar, 2017).

Learner-centric education shifts the primary focus from the instructor to the learner, while also continuing to provide the instructor to the student as a resource and for feedback (Patel-Junankar, 2017). This approach also encourages students to facilitate their own progress and learning to determine their level of learning and understanding (Patel-Junankar, 2017).

Key players in a learning ecosystem

Peers

Government

Community stakeholders
- Youth-based organizations
- Local businesses
- Faith-based groups
- Non-profit organizations
- Out-of-school education organizations (i.e. sports clubs, theatre troupes, etc.)

Learning Ecosystem

Educators

Family

Students

What do students need?

Each individual student has their own individual needs. After engaging with students from various grades, I have identified key areas that can be addressed through learning ecosystems: experiential learning opportunities, recognizing and identifying key learning coaches, and emphasizing community.

1. Experiential Learning Opportunities

In the traditional K-12 education system, learning is often confined to the four walls of a classroom. Students are able to recognize that learning is something that is continuous – it does not stop once you leave the classroom. Experiential learning opportunities allow students to tap into the "real world" and discover their own passions while still being in a low-stakes, learning environment. Some experiential learning opportunities can include things such as interactions with and exposure to industry professionals, local business owners, park rangers and other community members.

2. Recognizing and Identifying Key Learning Coaches

Students are able to recognize and identify the people in their lives who impact their learning the most. Whether they realize it or not, individuals such as parents, guardians, grandparents, peers, and community members contribute to the learning process of each student they interact with. Learning ecosystems can integrate out-of-school learning with the basic curriculum to produce a more well-rounded student body that has the proper support from the people they interact with outside of the classroom.

3. Emphasizing Community

There is a need that is present in grade school-aged individuals to feel like they belong in their community. There is also a want in these individuals to become more involved in the everyday workings of the community that they live in. Integrating experiential learning and key educators into the regular curriculum can lead to an improvement in the feeling of belonging that students feel.

How learning ecosystems can increase student engagement and community involvement

The time spent outside of the classroom is extremely valuable to the balance of the learning ecosystem. Erete et al. states that out-of-school time (OST) and the quality of it has a direct impact on a learner's participation and learning (2020). Stakeholders in a learning ecosystem should have a holistic understanding of the local learning opportunities that are available in their community, such as after school programming, summer camps, and other learning opportunities of that nature (Erete et al., 2020).

A case study of a learning ecosystem dedicated to science, technology, math, and engineering (STEM) learning by Allen et al. guides communities to understand what a community-driven learning ecosystem can do for both the learners and other stakeholders (2020). Community partnerships are used to spark the engagement of young people and develop their skills and knowledge while also building their sense of identity and belonging (STEM Ecosystems, 2019, as cited in Allen et al., 2020).

Lawson and Masyn bring up the topic of student engagement in their 2015 paper. They note that student engagement has long been determined solely by the students' academic learning and success in formal education settings (Lawson & Masyn, 2015). It is important to take a look at the decline of student engagement from elementary to high school (Lawson & Masyn, 2015). This tells educators that there has to be more opportunities for engagement. Lawson and Masyn suggest that outside of school hours, engagement needs to be encouraged through extra-curricular activities (ECAs), both in-school and within the community (2015). ECAs provide opportunities for students to hone skills and participate in activities that they are interested in outside of formal education, leading to the development of "new skills and competencies" and "important social ties" (Lawson & Masyn, 2015, p. 1-2). Researchers have also come up with a broader definition of the term "student engagement", which now covers activities that take place within the OST and does not gauge how involved a student is purely based on how well they perform in the classroom (Lawson & Masyn, 2015).

Exploration of the Current System of Learning for K-12 Schools

The "one-size-fits-all" model

Drawing from personal experience in the K-12 education system, educators in traditional classrooms struggle to find ways to cater to the wide diversity of students who are present. In a standard classroom of a public school, **the number of students averages at about 27 with around 5 grade-levels of understanding between them** (Hertberg-Davis & Brighton, 2006; Tieso, 2004 as cited in Latz et al., 2009). Because of the variation amongst the students in a single classroom, **employing a one-size-fits-all model of education and learning is only catering to a specific subset of students.** Latz et al. (2009) also highlight the need for classroom differentiation in general education, particularly in the formative stages of a student's education.

Criticisms of the current model of learning
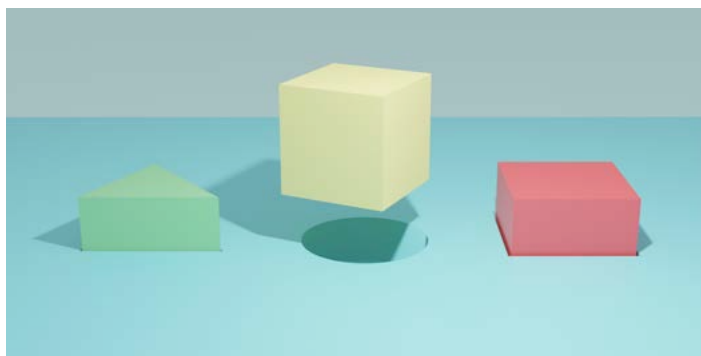
More often than not, minority students are left out of the equation and are not given the resources they require to become successful learners in their own communities. Current educational approaches employ a more equality-based system of learning where resources in a given school or school system are equally distributed between students.

However, the style of formal education and exclusively in-class learning caters to a subset of students who are inherently privileged and creates an inequitable environment in which other students struggle to learn.

The National Equity Project defines educational equity as a situation in which "each child receives what they need to develop to their full academic and social potential" (National Equity Project, n.d., as cited in Almazan & Carter, 2020, p. 1). In a 2020 paper, Savva et al. notes that Katherine Pierce from KnowledgeWorks, an educational non-profit organization, emphasized the importance of having a learning environment with an intentional design that allows for all learners to have access to the kind of learning that meets their individual needs.

Engaging Learners in the Livingstone Range School Division

The best way to learn about a system is to speak to individuals who are interacting within the system. The students at the Livingstone Range School Division were extremely eager to share their experiences in formal education.
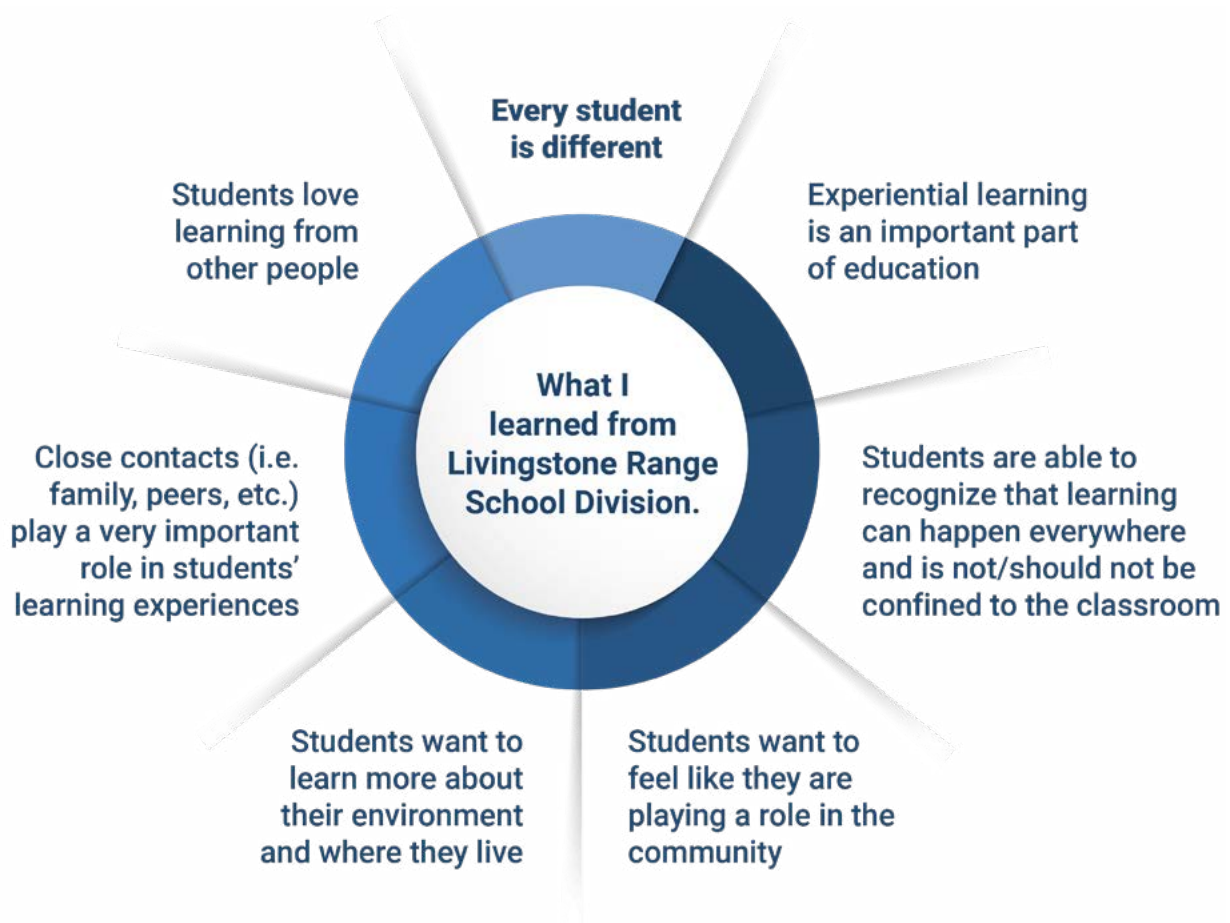
To engage directly with learners who are currently in the system, I posed three questions to elementary/middle school students and three questions to high school students in the Livingstone Range School Division. I received almost 200 responses in total.

Elementary/Middle School

- If school didn't exist, how would you learn? What would you learn about?
- Outside of school, where do you learn the most?
- Other than your teacher, who teaches you?

High School

- If school didn't exist, how would you learn? What would you learn about?
- What learning experiences could you have in the community to give you a greater sense of connection and belonging to the Crowsnest Pass?
- Who do you wish you could learn from in your community and what would they teach you?

What I learned from Livingstone Range School Division.

- Every student is different
- Students love learning from other people
- Experiential learning is an important part of education
- Close contacts (i.e. family, peers, etc.) play a very important role in students' learning experiences
- Students are able to recognize that learning can happen everywhere and is not/should not be confined to the classroom
- Students want to learn more about their environment and where they live
- Students want to feel like they are playing a role in the community

Local Perspectives On Learning Ecosystems

A city's proximity to natural resources is no longer the driver of its competitive advantage. Instead, a city's ability to attract, develop and retain talent (the people who will live and work there) is the greatest predictor of social, and economic prosperity.

(Finch et al., 2020, p. 3).

Southern Alberta

Through this partnership with the Livingstone Range School Division, one thing has become exceedingly clear: the goal of implementing a functioning and successful learning ecosystem is to create a sustainable community to which residents continue to return after gaining experience elsewhere. A 2020 report by Finch et al. touches on ideas that coincide with the goals and rationale set by the Livingstone Range School Division.

The report by Finch et al. (2020) focuses on transforming the City of Calgary into a "LearningCITY", a version of a learning ecosystem that is designed to "drive social and economic prosperity" (p. 3). The guiding principles of the LearningCITY aim to make the systemic shift from the traditional and formal learning systems to a more open learning ecosystem that allows for learner autonomy, experiential learning, and investments in structural capital on the city-level (Finch et al., 2020). LearningCITY is a classic example of a learning ecosystem in which learners are placed at the forefront while community stakeholders are encouraged to invest in the new system for a renewable society.

How Community Leaders Can Implement Learning Ecosystems in Rural Communities

Case Studies

Eduació360 – Catalonia

Eduació360 is a network of learning ecosystems in Catalonia that incorporates around 40-50 local authorities and has begun pilot programs in 11 of these localities (Hannon et al., 2019). This network is based on the belief that all students have the right to access high quality, out-of-school education regardless of their families' socioeconomic status (Hannon et al., 2019). Eduació360 is backed by state-wide policies and are carried out by individual municipalities (Hannon et al., 2019).

Highlights:

- Small towns (pop. < 5000) have made used of spare buildings in order to hold out-of-school experiences such as sports, music, and robotics (Hannon et al., 2009)
- Alternative learning spaces have been created in partnership with cultural and local facilities in the area with aims to strengthen the bonds within the local population (Hannon et al., 2009)

Kuopio Cultural Pathways – Finland

The Kuopio Cultural Pathways program was designed to encourage students to become more in tune with the culture of their city (Hannon et al., 2019). This version of a learning ecosystem introduces students to a different cultural aspect of the community each year until they are equipped with the tools to be able to access and use the resources in the community independently (Hannon et al., 2019).

Highlights:

- In 2019, the Cultural Pathways program in Kuopio is said to be serving 10,000 students between grades 1 through 9 (Hannon et al., 2009)
- Over 35,000 locals visited the Kuopio Museum in 2017, with most of them being school children (Hannon et al., 2019), showing the program has rejuvenated the community's interest in their collective culture and sense of belonging

The Metropolitan Regional Career and Technical Center – Rhode Island, USA

The Metropolitan Regional Career and Technical Center (Met) used personalized learning plans for its participants in order to cater to students' interests while also encouraging them academically (Hannon et al., 2019). The Met has built a network of local organizations and have banded community members together in order to provide experiential learning opportunities for students in the program (Hannon et al., 2019).

Highlights:

- Ranked at number one for high school engagement by the Rhode Island Department of Education in 2017 (Hannon et al., 2019)
- Since 2000, 98% of students that have graduated from the Met have been accepted into post-secondary institutions (Hannon et al., 2019)

Implementation

The case studies outlined above can provide a framework for rural communities that are looking to establish learning ecosystems of their own. The core foundation of a learning ecosystem relies heavily on the concepts that are highlighted by previously established ecosystems:

- **Support by policy-makers and leaders in education**
- **Making deliberate connections between students and their communities**
- **Inviting community stakeholders to play a role in building the future of the community**

Each of the case studies offer unique perspectives and insights on the formation and implementation of learning ecosystems in their communities.

Eduació360 champions the idea that equitable access to experiential learning outside of the classroom is the responsibility of community leaders such as local governments, municipal authorities, and other individuals who have the power to promote and successfully implement a learning ecosystem (Hannon et al., 2019). Community leaders must understand the importance of their commitment to learning ecosystems in order for them to thrive.

The importance of public policy is also highlighted in the Kuopio Cultural Pathways program. The Cultural Education Plan is a staple of the Kuopio school curriculum, and clearly outlines the policies affecting formal and informal educators, as well as the programs and locations at which learning happens in the community (Hannon et al., 2019). The governance and funding given by the individuals with the power to do so have made the Cultural Pathways program become the new normal in Kuopio (Hannon et al., 2019), resulting in the success of this particular learning ecosystem.

The Met emphasizes the importance of community in the implementation of their learning ecosystem. Local business, civic organizations, charities, and other institutions that offer experiential learning experiences have all played a key role in the establishment of success of the Met (Hannon et al., 2019).

One of the ways that the Met has managed to strengthen community ties is by creating internships for and providing interns to their community partners (Hannon et al., 2019), which fosters an environment in which every individual involved benefits. Internship Coordinators and Advisors are also key to the Met, and is something that other learning ecosystems lack (Hannon et al., 2019).

Conclusion

Learning ecosystems are a novel approach to education which centers the learners and provides equitable learning opportunities in partnership with the local community. Learners have long recognized that the traditional learning systems currently implemented in formal education have put them at a disadvantage, are inequitable, and do not push every student towards success. As I have learned through community conversations with students from the Livingstone Range School Division, students who undergo traditional schooling have a lot to say about the circumstances that they are in. Listening to the individuals who are directly affected by the system is the first step to improving that system. Additionally, the importance of recognizing the key players in the implementation of a learning ecosystem should not be overlooked. In the case studies presented in this report, the success of the established learning ecosystems relied heavily on the commitment and dedication of community leaders (i.e. government, policy makers, school division leaders, etc.).

The Livingstone Range School Division's goal of creating a sustainable community in which learners have the opportunity to have experiential learning opportunities from other people who are from their own community is something that can be attained. Through reworking the system and re-evaluating the current pedagogical approaches that are currently employed by formal schooling, the development and eventual implementation and success of learning ecosystems will be within reach.

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