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School is Such a Chore!

Agriculture as a Lens for Enhancing Learning and Life Skills

Dr. Bonnie Stelmach

University of Alberta

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Abstract

This qualitative intrinsic case study was conducted at New Humble Community School (NHCS), the only school where Alberta curriculum is facilitated through a working farm. NHCS provided a distinct context to explore: (1) how experiential learning through agriculture fosters curricular connections and life skills in K-6 students, and (2) how learning in a school with a working farm shapes students' relationship with school. Semi-structured interviews were conducted with 52 K-6 students and two Grade 7 alumni, five teachers, three staff, twelve parents, and five community members. Following principles of community-based research to align with rural community values; Grade 5 and 6 students were mentored as co-researchers to assist with interviewing the K-6 students. Interviews were complemented by classroom, nature- and farm-based observations of learning, a web-based parent survey (n=29), and two teacher focus groups. Data were analyzed and interpreted through Sort and Sift, Think and Shift, a narrative-oriented approach. Interpretations were guided by a four-part place-based conceptual framework: learning *in, of, from, and for the sake of* place. Four claims support learning through agriculture: it anchors learning in a concrete vision that makes learning purposeful; fosters mature skill development by involving students in high-stakes, adult-like responsibilities; brings sustained joy to learning; and, it cultivates stewardship and citizenship. An additional place-based dimension, learning that *validates* place, extended the framework, based on the insight that learning through agriculture legitimizes rural people and places as sites of meaningful knowledge and lifestyle validation. These findings endorse place-based innovation that aligns with the learning context.

Keywords: rural education, agriculture-based schooling, place-based education

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Section 1: Introduction

This section includes the rationale for the study, description of the school authority context, literature review and research questions.

Rationale for the Research

Teaching through agriculture is increasingly viewed as a way to enhance curriculum in K-12 Alberta schools in both rural and urban contexts. It is an approach that has received widespread support from non-educational organizations. Not only do Alberta's agricultural product boards and organizations such as Ag for Life support teachers by providing complimentary lessons and activities for teachers to implement in their classrooms, but postsecondary institutions and less obvious entities from the corporate world are also championing agriculture in schools as a way to cultivate students' curiosity while developing their food literacy. Named in honor of Professor Emeritus Frank Robinson from the Faculty of Agriculture, Life & Environmental Sciences at the University of Alberta, the Frank Robinson Youth Academy for Nature, the Environment and Feeding the World (FRYA) aims to support K-12 teachers in building student connections with food production and the natural world. Further, the Alberta Motor Association (AMA) launched its School Garden Studio in 2024 providing teachers with curriculum-based activities, community connections, and access to gardening supplies and bursaries. In their recent publication of *AMA Insider* (Archer, 2025) a teacher from Pembina North Community School in Dapp, Alberta reported that since introducing gardening, students "enjoy coming to school...grades are up, attitudes are up [and] are super invested" (p. 39). Such anecdotes are promising, and the increasing interest in incorporating agriculture into curriculum suggest agriculture as a pedagogical innovation demands academic study.

While the scope of implementation ranges from classroom chick hatching to school-wide enterprising such as the award-winning *EcoVision* at École Secondaire Lacombe Composite High School (LCHS EcoVision, n.d.), agriculture is gaining particular attention in rural contexts where it is culturally and economically relevant. In 2024, the CBC reported that agriculture academics are "popping up" in rural Alberta (Pedersen). Several years ago, Principal Van Lagen of Altario School introduced an

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agriculture program which turned his school from the brink of closure to a school of excellence that captured attention across the country (Galloway, 2022). Other rural schools who could not maintain viability have successfully integrated agriculture into public charters to offer place-based (Gruenewald, year) educational programming. In fact, in Fall 2025, two rural public charter schools opened—Rural Route Agriculture Academy in Strathmore, Alberta and Andrew Rural Academy—with full or partial foci in agriculture and partnerships with Alberta 4-H and Lakeland College, respectively. Given these developments, a research base that can inform and theorize how agriculture as a place-based educational approach impacts students' learning and development is needed.

New Humble Community School (NHCS) a rural public charter school that was the focus of this study, has been a leader in agriculture-based programming. For NHCS agriculture is not simply a one-time project or extracurricular opportunity. Agriculture is the school's *raison d'être*. When families send their children to NHCS, they know that all students will learn “through innovative agricultural and experiential land management education” (NHCS, n.d., p. 1). NHCS families can also expect the values, attitudes, and knowledge that constitute agriculture as their community's way of life will be modelled, and that the role of agriculture in their rural community's history will help students understand their place in the provincial and global agri-sector. NHCS was ideally positioned to provide insight into how an innovative agriculture-based learning environment impacts upon elementary students' learning and development.

Underpinning this study was an interest in disrupting the deficit logic that has persisted in narratives that characterize rural schools as inferior to their urban counterparts. Lack of resources and programming, staffing shortages and poor teacher retention (Rhinesmith et al., 2023), declining enrollment, and underperformance on large scale assessments such as PISA and TALIS (Echazarra & Radinger, 2019) are customarily linked to rural conditions. Rural inferiority is more than material, however. Fulkerson and Thomas' (2019) concept, urbanormativity, defined as “a set of beliefs, values and practices that place the worth of urban life above rural” (p. 163), theoretically explains how the undesirability of rural life is culturally, politically, and socially entrenched. Reporting on his study of rural

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Nova Scotia youth, Corbett (2007, 2020) argued that rural schools convey to students a “mobile discourse” that suggests “successful people are mobile and leave, while unsuccessful people are ‘stuck’” (p. 238) in their rural communities. Metrocentricity, the “orientation towards a city-based existence” (Campbell & Yates, 2011), ties rural negativity to self-image that privileges “city person” over the “country at heart” (p. 3). Against this conceptual trifecta of rural devaluation, NHCS is a hopeful counterpoint. As such, this research joins conversation with Canadian rural education scholars such as Corbett and Gereluk (2020) who argued for more “nuanced and entangled stories...of lived rural experiences” (p. 7). NHCS’ innovation can be instrumental in changing people’s assumptions about rural schools and cultivating what Corbett and Gereluk called “a more hopeful discourse” (p. 7).

Project Background

NHCS was approved by Alberta Education to begin operation in the 2021 – 2022 school year. Because it is a charter school, it is technically New Humble Community School Association (NHCSA), but everyone knows it as “NHCS” or simply, “New Humble”. The school’s historical roots extend back to 1900 when Thomas Humble donated land on which Humble School was eventually built. The current building is the fifth bearing the name of Humble (NHCS Charter, n.d.), but if you walked into the school’s gymnasium today, your eyes would be pulled toward a large mural of Mr. Humble and the first school building. History has a presence here.

NHCS was a member of the Black Gold School Division until the Board of Trustees voted in favour of permanently closing it on June 30, 2020. The current Board of NHCSA chose to retain the name of the school instead of severing those deep roots to Mr. Humble. NHCS is as rural as rural schools can be as it is situated along Secondary Highway 795 about 10 kilometres south of the Town of Calmar. NHCS has modest acreage for its barns, pens, garden, playground, and ice rink, but the development over the five years of its existence (now in its 6th year) has been impressive. When I first came to the school, there were a couple of small barns for chickens, two goats and a pig, and an outdoor classroom with a whiteboard and a seating area. Thanks to community and corporate donations (e.g., Cargill), there is now a large heated barn that includes classroom learning space with tables and benches, a large greenhouse,

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feeding systems, more animals, barns and bigger pens, a garden and composting station, outdoor washroom facilities, and secure fencing. The students participate in raising livestock and vegetables which are sold or auctioned in the local community.

In its first year of operation the student population was 80, and except for Kindergarten, classrooms were combined grades. There were four teachers, two education assistants, two support staff, and a custodian. In 2024, the school was approved to extend its programming to Grade 9, so portable classrooms have been added to the school property. Though the study maintained its focus on Grades K-6, it warrants highlighting that the school has gone from closure to a state of demand. Today, 203 students attend NHCS, and there is a waiting list. While most students hail from the surrounding area and towns, there are families who drive over thirty minutes from nearby towns and cities so that their children can attend NHCS. NHCS recently received approval to extend to Grade 12 on a future site.

Charter schools are overseen by a part-time superintendent. Doug Nicholls, the current superintendent, has held the position since 2023. The principal at NHCS, Halea Kohel, is a teaching principal who has the support of a secretary-treasurer, front office staff person, and custodian. Today the school is staffed by 11 teachers, seven educational assistants, two support staff, and a custodian. There has been position diversification which includes a teacher who also serves as a Curriculum Coordinator, another who provides technology support, and a full-time Environment and Agriculture Manager who also supports teachers with agriculture integration and oversees the chores crews. The students have primary responsibility for the working farm. Education assistants participate in professional development days with the teachers. Non-teaching staff members and parents take on informal leadership. For example, parents were instrumental in initiating an afterschool archery program who recently sent a student to an international competition in South Africa. Parents work with students on maintenance tasks such as laundry, egg and vegetable sales, and breakfast and lunch programs. Regardless of designation, all staff and many parents at NHCS interact with students and can be said to contribute to students' development.

Most of the teachers, staff, and board members are from the Calmar area or other rural contexts, have a passion for agriculture, and/or a philosophy that supports experiential learning and engagement

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with nature. Some have family who once attended the school, and there is overwhelming parent and community support for the school judging from the financial donations and volunteer hours they have contributed. One teacher told me that on a daily basis there are parents in the school helping out, and that aligns with my observations when I have visited the school. A strong sense of ownership characterizes the NHCS community, and I have observed many activities that have been led by community experts and volunteers (e.g. veterinarians, conservation groups, poets, artists, tradespeople).

Any chance I got throughout the study, I have asked visitors to the school their thoughts on the agriculture program and have consistently heard comments like, “I love it...I wish my kids could go to a school like this.” It was common for me to hear community members express confidence in NHCS’ program in terms of how it would prepare students for life. In addition to local support, NHCS has grabbed the attention of others outside of Alberta. A couple of years ago NHCS was entered in the BASF Canada Agricultural Solutions Growing Home competition. In the race for \$25,000, NHCS was in the top three in Alberta, Saskatchewan and Manitoba, and was neck-in-neck with the eventual winner in the Alberta category. NHCS has made its mark in phoenix-like fashion; therefore, it was particularly suitable for exploring its program impacts.

Research confirms that because of its hands-on nature, agriculture has a positive impact on academic outcomes and school experiences (Knobloch et al., 2007), but most of the literature is based on episodic experiences, and primarily in the upper grades. Our study was an opportunity to extend our understanding of how agriculture as a central focus in a school can shape a positive learning environment for Kindergarten to Grade 6 (K-6) students, and to appreciate how younger children learn and develop through agricultural literacy. Our study assumed that agriculture allows learning to have multiple dimensions, including a connection between home, community, and “classroom”, which more fully considers how children learn across various environments. Agriculture contexts integrate disciplinary knowledge with social relationships and children’s interactions with places like home and school. Agriculture practice engages many disciplines and contexts at once; therefore, it is relatable to children in a way that compartmentalized subjects may not be. Given how NHCS has become viable through its

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unique programming, we were interested in how an agriculture-focused environment itself shapes students' relationship with school.

Intervention

Interventions are not relevant to qualitative research; therefore, there are no interventions to report.

Literature Review

“What is fascinating about *learning* is that it cannot occur without *experience*.” (Morris, 2020, p. 1064, emphasis in original)

“Agriculture is, by nature, a hands-on discipline.” (Mabie & Baker, 1996, p. 2)

In the above quotations, Dewey's (1938) philosophy endures. Dewey believed students cannot develop intimate knowledge of any subject matter without having direct and meaningful experiences. The NHCS (NHCS) charter embraces a Deweyan philosophy by envisioning learning through agricultural literacy, experiential learning, and land stewardship. Pairing agricultural literacy with experiential learning makes sense because, as Zilbert and Leske (1989) argued, “agricultural education has always had a strong orientation toward learning by doing, or experiential learning” (p. 1).

Experiential learning and agricultural literacy have long histories; their scholarly importance is signalled by two prominent peer-reviewed journals. The *Journal of Experiential Education* and the *Journal of Agricultural Education* were established in 1978 and 1983, respectively. Experiential learning philosophy has global reach because of organizations such as the American-based Association for Experiential Education, which has been in operation for over 50 years. On local soil, the Classroom Agriculture Program (2022), an initiative of an Alberta-based charitable organization called Agriculture for Life (2022) established in 2011, have been stable complements to national initiatives such as Canada's Youth in Agriculture program (Government of Canada, 2022) and Canadian Agricultural Literacy Month (Government of Canada, 2021). While agriculture and learning through real-life situations is celebrated in Canada, most research has been conducted in American schools (Cosby et al.,

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2022). Our project contributes new empirical data to inform local educators about the potential benefits of integrating agriculture into Alberta's curriculum. This literature review includes a synthesis of research on experiential learning, agricultural literacy, and place-based education.

Experiential Learning

Many terms are associated with experiential learning: inquiry-based learning, student directed learning, active learning, problem- and project-based learning, and service learning (Breunig, 2017; Wurdinger & Carlson, 2010), but the common thread among these is an emphasis on student autonomy and inquiry, purposeful and pragmatic application of theory, and experimentation and reflection. Kolb (1984) is the most influential theorist regarding experiential learning. Kolb conceptualized learning as a cyclical and recursive process beginning with concrete experiences, then moving onto and between observing and reflecting, abstract thinking, and active experimentation. Importantly, the reflection stage is what distinguishes experiential learning; without reflection, an experience is merely an experience and not experiential learning.

The etymology of "experience" provides a clue to the value of experiential learning as a pedagogical approach. In Latin, "experience" means "to test...or risk" (Roberts, 2018, p. 1072). When students engage directly with curriculum vis-à-vis ill structured and concrete problems, they experience cognitive dissonance, and have opportunities to develop cognitive flexibility, tolerance for novelty, adaptability, and creative problem solving (Collins et al., 2016; Roberts, 2018). This constitutes cognitive or intellectual risk. Given the role that testing or risking plays, Eyler (2009) argued that experiential learning affords students benefits beyond school as it prepares them to deal with ambiguous situations and promotes lifelong learning.

Experiential learning tends to be studied within science, math, and outdoor education. In these domains, the evidence is positive. Allf et al. (2020) and Santhalia & Yuliati (2021), for example, found that experiential learning in physics and chemistry improved competencies. Among primary students, project-based learning has been shown to be more meaningful for students, increasing their motivation,

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autonomy, and independence (Kaldi et al., 2011). Early research in international contexts showed that experiential learning enhances critical thinking, work habits, and productivity (Tretten & Zachariou, 1997).

The significance of experiential learning is its potential to shape behaviour in a way that knowledge alone does not. In particular, experiential learning is lauded for leading to changes in students' development of personal and social life skills. From a social perspective, knowing the importance of goal setting, taking responsibility for one's actions, or appreciating diversity on its own does not necessarily translate into citizenship. When assignments are linked to real-life situations and students are required to work cooperatively, they are more actively engaged (Curtis, 2002) and develop positive attitudes about group work (Veenman et al., 2000). Research also shows that experiential learning is especially effective in improving academic outcomes and social behaviours among lower-ability students (Horan et al., 1996; Liu & Hsiao, 2002) because it honors diverse ways of learning and allows students to learn at their own pace. Online learning also provides opportunities for experiential learning. Drljević and colleagues' (2021) study of 7- and 8-year-olds' learning through augmented reality demonstrated increased student engagement on all dimensions proposed by Fredericks et al. (2004, 2011)—behavioural, emotional, and cognitive. They concluded that augmented reality allowed for connectivity with reality, multi-sensory experiences, and interaction with others.

A focus on experience strongly connects to learning in the outdoors. Asfeldt et al. (2021) cited Passmore's 1972 study as one of the earliest documenting the impact of outdoor education in K-12 schools throughout Canada. They summarized the following benefits: "enhancing ecological knowledge; developing social and cultural values; stimulating student interests; providing challenging and adventurous outdoor learning; and personal growth" (p. 298). Outdoor learning not only results in cognitive outcomes across disciplines, but social and emotional outcomes for young learners, including self-efficacy, self-esteem, self-acceptance, and environmental, place and people consciousness (Asfeldt et al., 2021; Fuller & Irvine, 2010; Howard et al., 2016; Nisbet et al., 2011; Phenice & Griffore, 2003).

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What unites the above studies is they show that when learning is student-centred, it gives students meaning, control, and connectedness (Morsillo & Fisher, 2007). When we went out with the student chores crew, we witnessed what Fromm (1964, as cited in Uhlmann et al., 2018) coined biophilia, “love of life or living systems” (p. 1). Something as simple as chores can connect children to nature, strengthen their relationship with and knowledge of food, trigger emotion and responsibility toward each other and the more-than-human world, and enhance interconnectedness between their schooling, their personal lives, and their community.

Experiential learning is thought to change the quality of the learning experience itself. As Kelly (2007) noted, “learning is a by-product of our engagement”, and we cannot take for granted the role that “awe and wonder” (p. 13) play in enhancing children’s learning. What scholars have not focused on, is how a comprehensive approach to curriculum at the elementary school level can enhance not only children’s attainment of curriculum outcomes, but their life skills development and enjoyment of learning.

Agricultural Literacy

The definition of agricultural literacy has evolved from basic understanding of agricultural facts to “a deeper understanding of the economic, social, science and technology aspects of [agriculture] coupled with the ability to synthesize and communicate such knowledge” (Cosby et al., 2022, p. 12). Charlebois et al. (2021) found in their survey of over 10,000 Canadians, that since the COVID-19 pandemic, Canadians have increased interest in knowledge about how their food is created, but food literacy has not significantly increased. Reports of Canadians’ lack of knowledge about how their food is created (The Canadian Centre for Food Integrity, 2019) is concerning, but in fact, the agri-food system far exceeds primary agriculture. In the *AgriCommunication Initiative Baseline Survey* (Government of Canada, 2020), 63% of Canadians reported they feel somewhat knowledgeable about agriculture or the agri-food sector, which includes “agriculture’s important relationship with natural resources and the environment, the marketing of agricultural products, the processing of agricultural products, public agricultural policies, the global significance of agriculture, and the distribution of agricultural products”

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(Frick et al., 1991, p. 52). Regarding students, Hillman & Buckley (2011) claimed they are largely disconnected and have shallow knowledge of agriculture. Since fewer people are directly involved in agriculture, agricultural literacy is imperative to ensure that policy and practical decisions are made by those who understand the complexity of the issues.

Experiential learning and agriculture literacy are mutually reinforcing; therefore, it is unsurprising that they are companions in research. Quasi-experimental studies have focused on science and mathematics showing better student outcomes from experiential learning in agriculture, compared to direct instruction (Baker & Robinson, 2016; Boyd & Miller, 2005). Studies also showed students scored higher on creativity and practical intelligence (Bradford, 2016), had better retention and higher order thinking, and were better at future application (Arnold et al., 2008). Brown and Knobloch (2022) recently concluded that students who participated in The Farming Game simulation involving a 4-H animal science project, fared better in post-tests about entrepreneurial knowledge than those in the control group. Further, students in the intervention group were described as “more likely to select challenging goals or goals that others have not considered, more likely to be a self-starter, as well as more likely to have diligence, innovation and efficiency in goal attainment” (p. 97). Jose et al. (2017) found that students’ post-field trip drawings of local land and water features showed better recall, and featured more of the hands-on experiences in their drawings, attributing this to the *in situ* activities. There is, therefore, a strong quantitative evidence base showing the effectiveness of experiential agriculture learning.

Equally noteworthy are the qualitative reports of the academic, social, and emotional benefits of agriculture-based learning. In focus groups, students have reported having more appreciation for agriculture and rural life, and experiencing enduring effects of enrichment activities (Bradford, 2016; Knobloch et al., 2007). Students in Bradford’s (2016) study craved hands-on activities saying it was difficult to connect to concepts through direct instruction. Erickson and colleagues’ (2020) study of a poultry program suggested that students became more reflective, autonomous learners. Burke et al. (2020) reported on an inspiring example in which students successfully petitioned for new laws

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regarding single use plastics, demonstrating how students applied their knowledge of environmental facts and democratic processes to address a real-world challenge. Civic engagement develops political competencies, and increases social awareness, responsibility, self-efficacy and a sense of belonging (Álamo-Bolaños et al., 2024; Wong et al., 2022). These studies confirm benefits for junior and senior high students, and our study expands the empirical base for potential benefits of agriculture-based learning for elementary students.

Gardening dominates the landscape when it comes to agriculture in elementary schools (Hershey & Parks, 2022). Here, too, a narrow curricular focus is evident, with most research aimed at scientific concepts, nutrition knowledge, and changing children's food behaviour (D. Blair, 2009; Canaris, 1995; Hanbazaza et al., 2015; Triador, 2015). Quantitative studies showed gardening led to increased scores on standardized tests—up to 92% in Lieberman and Hoody's (1998) often cited study—as well as higher thinking skills and enthusiasm for schooling (Emekauwa, 2004). D. Blair (2009) found statistically significant improvements in outcomes in four of 12 schools reviewed. Those that did not meet the significance criteria “reported that gardening groups had higher agricultural achievement scores than did students doing in-class projects” (p. 21). In their study of six school farms in British Columbia S. A. Blair (2022) found that farm schools not only increased food literacy, but positively impacted students' mental health and wellbeing, and were more supportive for “neurodivergent and culturally diverse students” (p. iii). The list of qualitative benefits of gardening for elementary students is long: science and environmental knowledge, enthusiasm, motivation, pride, teamwork, bonding, classroom climate, attendance, self-esteem, positive attitudes toward school, work skills, aesthetic appreciation, independence, level of activity, and delayed gratification (D. Blair, 2009; Casey et al., 2019; Hershey & Parks, 2022; Robinson & Zajicek, 2005). Especially affirming are the long-term effects of gardening, such as “environmental sensitivity, concern, and activism” (Casey et al., 2019, para. 9) and post-secondary pursuits related to agriculture and the agri-food industry (Doyle, 2014). These findings are important because as Sloan et al. (2008) found in their studies of children's nutrition knowledge, factual knowledge about food did not lead to changes in students' food choices.

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Clearly, the literature points to the value of both agricultural and experiential learning. Most studies are based on isolated experiences however. Because NHCS provides an immersive experience focused on more than gardening for its elementary students, it has the potential to provide insights into how an ongoing farm operation adds value to students' learning and life skills development.

Place-based Education

Concerns about children's disconnection from community, environment, and culture, led to place-based education in the 1990s (Gruenewald, 2003; Orr, 2013; Sobel, 2004). Sobel (2004) defined place-based education as "the process of using the local community and environment as a starting point to teach...emphasizing hands-on, real-world learning experiences" (p. 7). The central assumptions of place-based education are that:

- place is an appropriate launch point for students to solve problems and develop knowledge that is transferrable beyond their local context;
- students should be creators, not simply consumers, of knowledge; and
- by focusing on place, students can exercise more autonomy in their learning in terms of modalities, materials, and content (Smith, 2002).

Place-based education assumes that local knowledge deepens students' engagement which leads to benefits including efficacy, critical thinking, problem solving, decision making, team building, and enhanced social cohesion in schools and communities (Williams & Labelle, 2017). In exploring NHCS students' experiences learning through agriculture and in outdoor spaces it was clear that place itself contributed to their enjoyment, learning, skill development, and the meaning they attached to school; therefore, this strand of literature was relevant for our exploration.

While geography and physical space is central in place-based education, 'place' is defined in more than geographical terms. For instance, in reviewing the literature on place-based education Yemini et al. (2023) argued that "local communities store intergenerational knowledge, skills, and systems of mutual support" (p. 3). Teaching and learning through place-based education, therefore, honors the political, social, economic, cultural, and ethical elements that shape a community. This extended

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conceptualization of place means that the narratives that impact a local place can be used to make global connections (Gruenewald, 2003).

Despite the popularity of place-based education and the work that has been done to broadly conceptualize it, research using this frame has been narrowly focused on environmental and scientific aspects of school while other school subjects seem to be absent (Yemini et al., 2023). In this regard, place-based education seems to have travelled the same narrow channels as agriculture education. Because of this limited focus, we have evidence of the importance of place-based education for impacting subject-specific outcomes, including environmental awareness. How the interdisciplinary nature of agriculture, and the engagement of the whole school in agriculture goals shapes rural students' relationship with schooling in general, however, may lead to new theoretical understanding of the value of rural places when they align with community values and lifestyle.

Conceptually, research in place-based education has explored the biophysical, political-economic, and socio-cultural dimensions. The biophysical dimension explores how humans connect with the physical and more-than-human beings in their surroundings (Ardoin et al., 2012). In their review of the literature focusing on the biophysical dimensions, Yemeni et al. (2023) found that place-based scholarship leans on a "simplified understanding of place" (p. 13) because studies have generally been place-specific and confined to single-subject learning. Dann and Schroeder (2015) for example, reported on a water-resource camp focused on the Great Lakes which aimed to increase students' attachment to the Great Lakes region. While the experience was valuable for increasing students' awareness of and sensitivity to their local surroundings, it is worth exploring how expansiveness and duration that are inherent in the goals of agriculture shape not only students' awareness of place but also the sense of the importance of place within a larger context.

The psychological dimension of place has also been a focus of place-based research. This area of research has examined how the environment shapes identity and the alignment between place and one's beliefs, values, and goals. For example, in examining children's perceptions of empty spaces such as grasslands, Eilam & Garrard, (2017) reported that children perceived empty spaces as lacking and wanted

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to correct this by putting buildings or people into the space. Yemeni et al. (2023) also summarized conclusions made by Rooney (2015) who studied how perimeter security fences on school grounds impacted children's experiences. Rooney found that because fences in schoolyards restrict children's mobility, they created in children a sense of separation from community and impeded their sense of independence. These studies capture an important relationship between physical and affective dimensions of place, but were based on conventional, urban schools.

Drawing on Vygotsky's (Vygotsky & Cole, 1978) sociocultural theory research on the social learning environment, social interactions, relationships, and community in classrooms are also fundamental aspects of place. Parker and Asher's study (1993), though dated, is a rare longitudinal study in education that highlighted the long-term effect of positive peer interactions when it comes to students' social development and well-being. Schools that emphasize an inclusive peer culture create an environment that not only enhances academic success, but promotes emotional resilience and sense of belonging. When belonging is felt in the school climate, students develop a positive self-concept, diverse learners feel supported, bullying is reduced, and students perform better academically and socially (Cohen et al., 2009; Osher et al., 2008; Thapa et al., 2013; Wang et al., 2020). Given the emphasis NHCS placed on inter-grade collaboration, and the fact that every student in the school participated in the farm in some way through the animal chores or gardening, prompted us to consider place as a conduit for relational learning. What studies tend to focus on in this dimension, however, is schools or classrooms as confined spaces. Because an agriculture immersion program inherently demands the support and participation of those outside of school—tradespeople, crop and animal scientists, municipal leaders, and farming families—the concept of place is necessarily broadened.

Caine and Caine (1991) argued long ago that the “assembly line” model of learning where the students are in desks, often in rows, and the teacher delivers lessons does not align with evidence about how the brain processes information. Judson and Datura (2023) noted however, that creating meaningful encounters for children with the living world is not accomplished simply by taking them outside. They cited Cant et al. (2013) who suggested that “students need to get outside in ways that are “wonder-full”

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(p. 2). Wonder-full schools engage in students' genuine doubt (Wolbert et al., 2018) and intellectual humility (Ebels-Duggan (2015), which, respectively, encourage curiosity without the expectation of a "right answer" and develop students' ability to "refine [their] sense of not-knowing" (Wolbert & Schinkel, 2021, p. 444). Documented examples of wonder-full educational experiences of intellectual humility are usually taken from situations that put students in novel settings. Gough (2008), however, argued against the notion that places were "profoundly pedagogical" on their own. Rather, place "becomes" pedagogical through intentional practices that encourage students to attend to various qualities of a place. Similarly, NHCS challenges this paradigm of place as naturally pedagogical. While the presence of a working farm has the potential to situate wonder within the school itself, it also engages students in what Gough called the 'ephemeral or obvious characteristics" (p. 72). It enables us to question, how does the meaning of place-based education shift when wonder-filled experiences that inspire curiosity are routine rather than exceptional?

Not many studies about the impact of agriculture intentionally compare farms to classrooms in a statistical way. Smeds et al. (2015) are an exception, and worth highlighting. To understand the effects of the learning environment, they compared 106 Finnish primary school students' experiences learning on a farm, classroom, and a synthesis of the two to discern effects on comprehension and long-term retention. Using a quasi-experimental design, they found that students whose lessons occurred on the farm scored better on all measures, including pre- and post-learning tests and long-term persistence of knowledge. The learning experience was qualitatively enhanced for students in the farm-only group. Smeds et al. concluded that the authenticity of the farm that enabled hands-on learning through practical tasks enhanced comprehension, and the opportunity to learn cooperatively also enhanced their engagement. The physical qualities of the farm, such as fresh air and the need to be physically active, were also cited as positive qualities. A telling quote from a student, that "It's impossible not to learn" suggests that farms may be inherently educational, contrary to Gough's (2008) thesis. This research provides a strong rationale for agriculture programming in schools, but it also raises an important question that our study may be able to answer: if positive effects can be gained from students spending two weeks visiting a farm

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4 kilometers away to learn three lessons about agriculture, then what is possible when the farm has a school and students are involved in its daily operation?

Furthermore, while the research on the academic and social benefits that can be gained from learning in place is helpful, there is a need for better understanding of how place-based education contributes to how students conceptualize the places where they learn and live, and how the place itself shapes understanding of place and self. Dado et al. (2024) took a rare look into this by examining the stories and lived experiences of young adults who grew up in farming families. Their study provided insights into the value of farming to instill a strong work ethic and help-seeking behaviour, and a deeper appreciation for farming as a demanding vocation. This study not only provided insights into the benefits of farming, but challenged stereotypes. For example, one participant described as a straight A student and valedictorian of their school said, “it’s not that I can’t handle books or the academics...but I knew that I would do better if I went to a place that I can learn with my hands” (p. 154). Their work challenges a commonly held assumption that hands-on learning is the default for non-academic students.

Related to the above, Barter (2014), for example, asserted that whatever competencies or knowledge children might bring from their rural spaces, it is implicitly devalued. The skills required to succeed in formal education are so dominant that rural students may learn to conceptualize themselves around what they do not know, rather than what they do. Consequently, rural students who do not see themselves in their education learn to leave behind parts of themselves or else experience friction between who they are and who they assume they should be (Lessard, 2015). Corbett (2007, 2020), who studied youth in the fishing village of Digby Neck, Nova Scotia, theorized this as a “mobility imperative” described as a subtle message coming from rural educators that success means leaving one’s rural community to pursue a professional, middle-class career in an urban center. In their study of a rural Alberta school, Faber (2022) described a student who had taken up this message: “I’m just going to be a farmer. Why do I need to learn that” (p. 2)? Once agriculture was introduced to the school, Faber reported “students began to feel validated in their knowledge and interests” (p. 20). Further insight into the shaping

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of place through an immersive agriculture program can advance understanding of the role that place plays as a process, not only a setting.

Underscoring our research questions was an assumption that learning is individual, social, and cultural, and that the multiple and place-sensitive dimensions of agriculture as a whole-school focus might expand our understanding of how place is understood. In particular, we hoped to dislodge thinking of agriculture education in terms of isolated lessons to promote STEM achievement to understand the value of agricultural immersion. While much of the literature focuses on school-based agriculture, learning from an agriculture-based school lends itself to understanding of a specific rural context while also potentially contributing to a broader understanding of the value of experiential and place-based education.

Research Questions

Our qualitative study was guided by two questions:

1. How does experiential learning through agriculture foster curricular connections and life skills in K-6 students?
2. How does an agricultural learning environment shape students' relationship with school?

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Section 2: Practitioner Researcher Collaboration

In this section, the development and evolution of the partnership between NHCS and University of Alberta is described, including celebrations, challenges, and potential next steps.

Research Partnership Overview

The Faculty of Education is one of many teacher education programs in Alberta. As part of the University of Alberta, a research-intensive U15 institution, faculty maintain active research programs. As part of the Studies in Educational Leadership Program in the Faculty of Education, I have long held an interest in rural education. Charter schools in Alberta are unique in that a condition of their approval by Alberta Education is that they contribute to the provincial education system by sharing their innovation. The partnership between NHCS teachers and staff and me began when the first acting superintendent of NHCS, Dr. Guy Tétrault, contacted Dr. Trudy Cardinal at the University of Alberta in the 2021 – 2022 academic year to inquire about faculty who might be interested in research at the school. That email was forwarded to me, and because I coincidentally had just received a modest internal grant from the faculty to address deficit discourse about rural schools, I was interested in this school's unique approach. The stars aligned.

The partnership began in January 2022 by meeting with the teachers, leaders, and Board of Directors to discuss research. I conducted school and classroom visits with my then undergraduate research assistant from the Faculty of Education, Sam Pelkey, to become familiar with the students and staff. I chose to employ a community-based philosophy (Wallerstein & Duran, 2003) because such an approach aligns with what I know about rural community values, having been educated and raised, taught, researched, and now living in rural Alberta. Also, based on my initial engagement with the school staff and teachers, I could sense we all embraced the importance of community. For example, Sam and I were gifted a carton of eggs from one of the family farms at our first meeting with the teachers and Board of Directors members. That carton of eggs sealed the deal for me; I felt immediately welcomed.

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Thanks to a Kule Dialogue Grant (Stelmach, 2022c) from the UofA, we began by hosting a community dinner in April 2022 to learn the perspectives of families and community members regarding the school. This event honored our community-based approach. Following the event, I reported to the staff and Board of Directors a synthesis of the feedback (Stelmach, 2022b), followed by a proposal of potential research directions (Stelmach 2022a). I then invited the teachers and the Board of Directors to provide feedback. Our discussions ultimately led to our current project.

We proceeded optimistically after submitting our proposal to the Research Partnerships Program in November 2022 by conducting a pilot study in February and March 2023. The pilot gained insight into how students' engagement with animals impacts their school experiences. Through another Faculty of Education grant, I hired another undergraduate research assistant, Jihoon Jang, who was an Elementary Education specialist. This was ideal for me as my focus in research has been on secondary schools and parents. Jihoon was outstanding in terms of modelling how to engage with elementary school students in interviews, to come up with questions that were appropriate for their age, and to suggest creative ways to conduct interviews with the students. Data collection was unequivocally refined because of the pilot, and my own understanding of elementary students was deepened. Further, being an urbanite, Jihoon provided me with fresh insights as he noticed things about rural schools and spaces that I took for granted, and this helped me to see the contributions that an elementary education undergraduate research assistant could make to the project, including and perhaps especially ones who do not have rural schools in their background. When we were awarded a Research Partnerships Program conditional grant agreement, there was a smooth transition to the current study.

The partnership has evolved beyond the study itself in mutually beneficial ways as reciprocity was a driving principle. For example, throughout the project I facilitated two professional development days for the teachers – one at their school and another at the UofA South Campus, the University farm. Supporting NHCS teachers' development in working with the National Agricultural Literacy Outcomes (Spielmaker & Leising, 2013), the framework that was foundational in their Charter application, was part

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of their learning. I developed a curriculum mapping template to support facilitation of those workshops, and the teachers have since tailored the NALOS to their school context and to align with Alberta curriculum. These PD days gave teachers time to think concretely about linking agriculture to the curriculum. I was also happy to contribute brief sections to the Annual Education Results Report throughout the project and to write a literature review to support the Board's application to extend the school to include Grades 7-9. I served as science fair judge.

Meanwhile, the principal, Halea Kohel and teacher, Rae Ann Van Beers spoke to my fourth-year undergraduate class about public charter schools and their experiences teaching in them. In August 2025, a Grade 9 NHCS student contributed to a conference for K-12 Teachers, *Beyond Four Walls*, held at the UofA South Campus (University Farm) as a panelist of women leaders in agriculture across generations. This conference also included students from a graduate-level course that I taught, EDU 595: Integrating Agriculture into Curriculum; therefore, the Grade 9 student made an impact in both professional and academic circles. Future conferences or courses focused on school-based agriculture may integrate NHCS more directly through field trips, or potentially even hosting an event at their new school.

The partnership is also extending with an initiative I am working on with Superintendent Doug Nicholls. At the time of writing, we have begun communications with superintendent of Black Gold School Division who has been an organizer of the annual Alberta Rural Education Symposium (ARES). Our aim is to either contribute to ARES by including sessions in which rural school teachers showcase their innovations, or to organize a new conference in which rural teachers share their classroom expertise.

Celebrations

When I provided the NHCS Board with potential research ideas following the Growing Together dinner in April 2022, then Chair of the Board emailed this message:

Bonnie, the report you shared actually got me a little bit choked up once or twice, in a good way! I am hugely interested in each of your ideas, and to put it bluntly, you get us. This report reinforces to me that you have an excellent grasp on both what we are trying to achieve, and why we feel it's important.

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We have a deep appreciation of your interest and understanding, and your own passion for our little school.

This message confirmed for me that we were on the path to a good relationship. Throughout the project, teachers have commented to me that being part of the research project affirmed their efforts and reinforced the importance of their program. In a teacher focus group, teachers made the following comments:

You've been an asset as well. It's been always a joy to work with you, and you get our perspective, I feel, and you're easy to work with. And we don't see you as a professor, like, you are part of our team.

You get it, you just, yeah, you fit in. And we just appreciate having you and your time.

The school website houses research reports and any presentations we have made. As a composite, these suggest to me that NHCS has embraced the research as an important element of their operations.

The school's awards ceremony at the end of the 2024-2025 school year was a full circle and celebratory moment: I was gifted with another carton of eggs by that same Board Chair, as well as an original painting – one I had coveted at the school's fundraiser earlier in the year. When Sam Pelkey and I first met with the teachers in 2022, we were told we would become “part of the community”, and I can attest to feeling like our research partnership was more than transactional, it was transformational.

Challenges

NHCS was consistently gracious in accommodating my school visits and requests for meetings or information. Principal Kohel, Superintendent Nicholls, and front office staff were especially helpful by providing space for me to conduct interviews, arranging learning observations with classes, communicating the research progress to teachers, sending out emails to parents to contact me regarding interview transcripts so that ethics could be honored, and sharing their network of community resources. Communication was open and frequent throughout the study. Likewise, teachers and staff opened their classrooms and work spaces, and welcomed undergraduate research assistants so that we could tag along

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and observe. I was always invited to special events or new activities in the barnyard that might be valuable to attend or witness as part of data collection. NHCS was unequivocally invested in the research. However, as a researcher I was constantly mindful that the technical core of schools is teaching, not research, and that hosting a formal research study in their school inevitably placed additional demands on teachers' already full schedules. NHCS was in its first year of operation when the partnership was established which is an important factor to consider.

In the first year of the study, a teacher with an earned doctorate, Rae Ann Van Beers, was identified as a co-investigator and had designated research time. This kind of role is a luxury for schools, and given NHCS staffing and development needs, it proved challenging to fully utilize this allocation at times. Due to staffing needs, the role was discontinued, but Rae Ann's engagement was particularly valuable when we decided to include student co-researchers in 2023. She and another teacher, Dreann Wurban, were instrumental in developing the student researchers. Ideally at the outset, in keeping with community-based research, I envisioned teachers being part of data collection and analysis. I refrained from actively pursuing this, not because of a lack of teacher interest or ability, but rather because in light of all that was required to get a new school running with a new staff and a number of early career teachers, it seemed an unfair addition to their workloads. It is worth underscoring the potential value of a teacher-researcher role like Rae Ann played in the first year in a school-university research partnership while considering the practical realities.

Research Partnerships Program Cohort

The processes and procedures in the Research Partnerships Program contributed to the study's success. It was helpful to have a meeting with Research Branch personnel to discuss feedback on our application to prepare the draft research plan. Rae Ann and I attended the June 2023 onboarding meeting, and found the information valuable, along with meeting fellow research teams, even though we did not communicate with other research teams throughout the project.

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Our research was presented at the Alberta Research Network Fall 2023 meeting. The quarterly reporting and interim report were helpful ways to keep track of research progress. The reporting templates were helpful for organizing information. Any questions I had about reporting were promptly answered.

Celebrations

Being part of a cohort to hear about other school-university partnerships was appreciated.

Challenges

The timeline between the call for proposals for the Research Partnerships Program and the information meeting was tight. Collaborations always take more time, so having the call and the information meeting further in advance of the deadline may have been beneficial. Being part of Cohort 6, however, did not present challenges.

Lessons Learned

The research relationship with NHCS was both beneficial and rewarding. Key lessons learned include:

- The time taken to develop the relationship prior to the application to the Research Partnerships Program proved valuable for our partnership. The fact that we were in conversation before the granting process and held a community dinner to discuss research direction established a solid foundation for the relationship.
- Conducting a pilot strengthened the research. Pilot studies help a researcher become familiar with the context of the school, including the students and staff, and its rhythms and realities, so that data collection can be effective. The pilot provided an opportunity to implement the research design, making it possible to confirm and/or revise research questions, methodology, and methods. Importantly, pilot studies also help the researcher build credibility with the research site. By securing initial grants for the community dinner and the pilot, and collecting data at the school, the teachers, staff, and board had evidence of researcher investment, and saw research “in action”. This made it possible to anticipate and address any issues regarding process.

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- In theory, a community-based approach to research aims to develop capacity in all areas of the research such as data collection and analysis, and grant reporting and knowledge mobilization; however, it takes considerable intentional planning and demands more of teachers' and school leaders' time, which was not realistic given that NHCS was a new school. A key lesson is the need to assess opportunities and balance the opportunity to engage teachers in research with their central concern and responsibility for students.
- From a researcher point of view, a practitioner-researcher relationship provides additional benefit to researchers by providing insights into Alberta's education system. While research was the focus, I had many conversations about current and general educational issues with teachers, staff, parents, and community members, which made me more informed about the realities of schools. This, in turn, continues to inform my own teaching and future research. Consequently, it shaped a number of initiatives I introduced to my faculty, which are discussed in knowledge mobilization in Appendix C. A key lesson is that practitioner-researcher collaboration creates impact beyond the data results.
- Conditional grants have additional requirements compared to other research grants (e.g. SSHRC); therefore, having the reporting expectations explained as part of the application process can help to prepare applicants.

Suggested Next Steps

Since a positive relationship has been developed, we anticipate continued communications and support for each other's goals where possible. This will be a natural extension of the way we have already come to collaborate beyond the study. I am also confident that if NHCS identified future research needs that they would feel welcome to contact me, and that I could connect them to other researchers who may serve their interests. I consider NHCS staff, teachers, and families to be valuable members in my professional network with whom I could continue to collaborate, and whose projects I would continue to support. There are no plans for another formal research partnership at this point, but the partnership with

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NHCS has already inspired ideas for future research, and made us aware of potential ways to enhance the Ministry's already excellent program.

As we think about the future, both rural school innovation through agriculture and public charter schools are fertile ground for research that can involve the development of new partnerships. From January to June 2025, I hosted Dr. Jaye Johnson Thiel from the University of Alabama, who was joined the Faculty of Education at University of Alberta as a Fulbright Canada Research Chair. During her visit, I accompanied Dr. Thiel to NHCS in March 2025, and introduced her to 4-H families from the school so that she could pursue her research on youth development of embodied literacies through showing animals. As a result of touring NHCS, Dr. Thiel and I have begun planning a research collaboration that would focus on Alberta school agriculture programming.

Since the passing of the *Choice in Education Act* (Government of Alberta, 2020) there is a noticeable trend in public charter school development in rural Alberta where school authorities have voted for school closure. There are rural communities who are developing charters around place-based education, including agriculture programming. The Rural Route Agriculture Academy that opened in Fall 2025 in Strathmore, Alberta is a prime example. Given that one of the expectations for charter schools is to collaborate with a post-secondary institution and to “enhance education research and innovation in Alberta” (Government of Alberta, 2025, p. 6) there is a potential role for the Research Branch to continue to be a leader in supporting school-university partnerships by serving as a liaison between communities developing charters and the university in anticipation of application to the Research Partnerships Program. I am personally grateful for the opportunity to research with NHCS because it has expanded my understanding of the public charter school system, and has resulted in research pathways that I believe will make a contribution to practitioners and the provincial education system. It was by chance, however, that I was introduced to NHCS. For communities developing charters, navigating the post-secondary landscape to develop partnerships with researchers can be challenging. We wonder if there is an

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opportunity for the Research Branch to partner with faculties of education to create dialogue and networking opportunities to specifically support charter schools who have a unique mandate.

Further, creating awareness about charter schools as potential researcher partners is critical because while there is lack of knowledge about charter schools, there is also considerable misunderstanding and misinformation about them. Organizations such as the Alberta Teachers' Association (ATA) and Public School Boards' Association of Alberta (PSBAA) have actively mischaracterized Alberta's charter schools in the likeness of American private charter schools (Golding, 2024; Riep, 2020; Teghtmeyer, 2023). As a faculty member I can attest to an egregious lack of knowledge about the role that charter schools play in Alberta's public education system. Presumed to be private schools, there may be faculty who would steer clear of a research partnership with charter schools for philosophical reasons or because, as NHCS teachers and I have experienced, public opinion can be antagonistic. As a regular participant in the Alberta Rural Education Symposium (ARES), for instance, I have heard trustees consistently express their disapproval based on erroneous information. As someone who teaches advanced undergraduates in our teacher education program, I ensure that pre-service teachers are given correct information about charter schools as part of Alberta's public education system. There may be, however, opportunities for the Research Branch to address misconceptions about charter schools so that faculty may be amenable to collaborating with them.

Finally, authentic partnerships in research are built upon positive working relationships. While researchers may have pre-existing networks with schools that make partnership research viable, not all schools, including developing and early-stage charter schools, are equally positioned. I was fortunate to secure two internal grants at the outset which served to position us to apply to the Research Partnerships Program. The possibility of the Research Branch incorporating an explicit partnership development phase prior to the full application process, allowing schools and researchers time to establish trust, discuss research directions and role expectations, and explore the feasibility of the partnership

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before committing to a formal study is worth considering. We attribute the success of our partnership to a conscious decision to engage in a community-based approach which focuses on relationship building.

Opportunities to share research findings provided by the Research Branch were appreciated. We support the continuation of the Alberta Research Network conference, as well as including knowledge mobilization through professional and academic venues as an eligible expense. The funding of Canadian venues only for sharing findings can be restrictive, depending on one's research topic. The most suitable venues for sharing findings may not be Canadian, and Canada does not have an academic association dedicated to rural scholarship. The North American Colleges and Teachers of Agriculture (NACTA) conference, for example, had potential for our project but it is usually hosted in the United States.

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Section 3: Research Design

Intrinsic case study (Stake, 2005) was the qualitative methodology employed to conduct the study. Intrinsic case study is appropriate to use when the researcher aims to gain a deeper understanding of a case that itself may have educational importance. NHCS served as an intrinsic case because it is the only K-6 Alberta school facilitating curriculum through agriculture. NHCS is set apart from other public schools that include agriculture as enrichment or extracurricular programming. Further, since beginning operation in 2020, NHCS has not only succeeded in its initial proposal to provide K-6 programming, but it has exceeded expectations by expanding to include junior high within three years of operation, and has approval to continue expansion to include Grade 12 on a future site. Clearly, NHCS is a unique story that warrants telling. Understanding how the agriculture environment contributed to students' learning and life skills development, and how it shaped their relationship to schooling will be of interest not only to rural schools planning for innovation, but to all schools who want to understand the theoretical or conceptual importance of experiential learning through agriculture, specifically, and the value of teaching that emphasizes local context.

NHCS identified agriculture, experiential learning, and land stewardship as charter foci to align with the New Humble community's livelihood and lifestyle. Grounding pedagogy in experiences that connect students' learning to their home lives and/or local surroundings corresponds to the tenets of place-based education (Sobel, 2004). Situated in the place-based learning genre, Granit-Dgani (2021, as cited in Yemeni et al., 2022) conceptualized four dimensions for learning: *in place*, *of place*, *from the place*, and *for the sake of place*. Learning *in place* captures how teaching and learning is shaped when it happens in places other than conventional classrooms. The study *of place* shines the light on the processes and conditions within the environment itself that shape teaching and learning when students are in that environment. Learning *of place* examines not only the physical elements of the environment, but the social and ecological processes. Learning *from place*, the third dimension, assumes that the environment itself is an educator of sorts, and plays a role in teaching and learning. Learning from place recognizes that place

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itself is distinct and valuable vis-à-vis learning, and not simply a backdrop for learning. The fourth dimension, learning *for the sake of* place, implies that students' learning about their surroundings is directed toward a larger cause. NHCS' focus on land stewardship is relevant here; learning for the sake of place assumes learning is oriented toward positive change, and that students' learning serves the place itself in terms of sustainability and ecological advocacy. This framework was appropriate given NHCS' charter of agricultural literacy, experiential learning, and land stewardship prioritize place as pedagogically central. After reviewing the data, it became apparent that as a place-based element of NHCS' pedagogical approach, agriculture supported learning by validating rural spaces. Learning that *validates* place was a fifth dimension added to the Granit-Dgani's original framework which is defined as learning that legitimizes local knowledge and ways of life that results from a seamless connection between students' home and community, and school learning. In the context of NHCS, agriculture practices and rural communities were prioritized, therefore legitimating rural ways of being as sources of knowledge and skills, and social and individual identity. Learning that validates place goes beyond valuing place, which appreciates rural ways of knowing and living without necessarily challenge deficit and urbanormative assumptions. The latter is imperative for elevating rural spaces from marginalization.

While place-based learning served as a framework, data collection and analysis were also sensitized by The Iowa State Targeting Life Skills Model (Hendricks, 1998), which inventories 35 life skills that have synergy with the hands-on nature of agriculture (See Figure 1).

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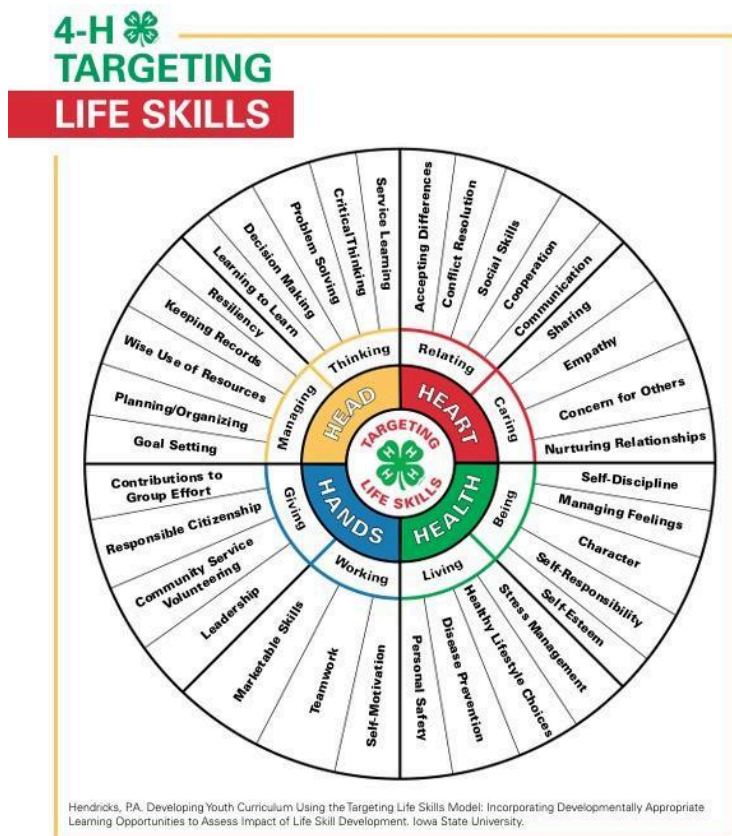


Figure 1. Targeting life skills model.

This model is conceptualized around the 4-H framework of head, heart, hand, and health (White et al., 2020), which afforded a comprehensive exploration of the nature of the life skills that students at NHCS were developing through agriculture, experiential learning, and land stewardship.

Research Questions

Tracy (2025) argued that “qualitative research questions can and should be influenced by the field” (p. 20). This was our experience. We began our study with an overarching question: How does experiential learning through agriculture foster curricular connections and life skills in K-6 students? This question remained consistent, but there were revisions regarding the context in which the question was pursued, and another question was added.

In our draft research plan, we proposed two curricular foci to pursue our overarching question:

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K-6 Social Studies and Physical Education and Wellness. We focused on these because the literature predominantly reports on agriculture in relation to math and science, and the Physical Education and Wellness curriculum had just been implemented. Early in data collection, however, we noted that young students, while they understand subjects like social studies, did not articulate how learning through agriculture helped in subject-specific ways. When students talked about agricultural activities, they did not necessarily link them to specific learning outcomes. Further, in 2023 – 2024 the school hired a teacher with expertise in physical and outdoor education to teach the K-6 Physical Education and Wellness curriculum. Focussing on that curricular area therefore, meant an individual teacher would have been central to the study, and we aimed for a whole school approach.

After exploring the curricular delimitations we initially proposed, we realized there was value in looking more comprehensively at the qualitative impact of agriculture on students' learning and school experiences, and focusing on the environmental factors and conditions that contributed to a positive learning and development experience. The decision to widen the focus was determined collaboratively with the principal and teaching staff, and in consultation with the Board of Directors. Since being immersed in a farm operation seemed to play a role in students' learning regardless of subject, we developed an additional question: How does an agricultural learning environment shape students' relationship with school?

Participants

As indicated in Section 1, NHCS is a rural public charter school that began operation in 2020 serving K-6 students. As a charter school, sharing their innovation was part of their mandate.

The chief study participants included K-6 students, teachers, staff, parents, and community members. We also included Grade 7 alumni who had transitioned to a conventional public school to compare their new experiences with learning at NHCS. Our study included the following participants:

Kindergarten = 3 (one student interviewed twice)

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Grade 1 = 8

Grade 2 = 8

Grade 3 = 13 (one student interviewed twice)

Grade 4 = 6

Grade 5 = 9

Grade 6 = 5

Grade 7 alumni = 2 (one had been interviewed as a student at NHCS)

Teachers = 5

Staff = 3

Parents = 12 (two parents interviewed twice)

Community members = 5

At the beginning of the study, I visited classrooms with my undergraduate research assistant when we introduced ourselves and our purpose for being in the school. We informed students that they could volunteer to be interviewed for the study, and explained what an interview was for the younger students. We created drop boxes for each classroom and slips of paper on which students could write their name and indicate they wanted to be interviewed. After a few weeks, we collected the boxes, and created a list of volunteers by grade. Following ethics, Principal Kohel contacted each parent via email and asked them to get in touch with me. Study information had been shared on the school website and in the school newsletter, so parents were aware the study was being conducted. Many had met me at the community dinner that was held in April 2022.

When parents contacted me about their child's participation, I replied by email with an explanation of the study, an information letter, and parent consent and child assent forms that were

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approved by the Research Ethics Board (REB). Students whose parents did not contact me via email were sent home a copy of the study information letter and consent and assent forms as a way to increase the number of student participants. All parents were invited to be present during their child's interview. One parent chose this option.

In keeping with the REB requirements, children under the age of majority are required to assent to participation; therefore, before the interview started, using age-appropriate language, I explained the purpose and what students would be doing during the interview. I invited students to ask questions and then confirmed if they wanted to do the interview by asking them to check or circle "yes" and the happy face, and print their name. I assured them that it was their choice, and even if they changed their mind during or after the interview, they could do so. I also assured them that the interview was not a test, but rather, a chance to teach me about what it is like for them to attend school with an agriculture focus. No students declined to participate. I sought permission to record the interviews by using Zoom with the camera turned off as Zoom automatically generates a transcript. No student objected to recording. Ongoing assent was obtained throughout the interviews by asking students if they wanted to continue. Three students decided to end the interview before all questions were exhausted.

The five teachers, three staff members, twelve parents, and five community members who volunteered were interviewed in person or via Zoom. They contacted me after Principal Kohel sent out an email. I followed a similar procedure in explaining the purpose of the study, and providing consent forms. Oral consent was obtained for those who were interviewed via Zoom. No adult objected to the interview being recorded. Similarly, Principal Kohel emailed an invitation to all teachers to participate in focus groups. Focus groups were conducted via Zoom to create maximum flexibility for teachers. The first focus group was conducted in February 2024, the first year of data collection. The second focus group was conducted in October 2024 at the culmination of data collection.

In keeping with ethics, interview transcripts were sent to parents of student participants and directly to the adult participants. For the students, Principal Kohel again contacted the parents via email to

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ask them to get in touch with me to get a copy of the transcript. Most, but not all, parents contacted me for copies of the transcripts. All participants were invited to make changes to the transcript by a certain date, and those who did not contact me by that date were assumed to consent to my including them in the data. No participants edited transcripts for their children or themselves.

Data Collection Sources and Instruments

Ethics approval was obtained from the University of Alberta Research Ethics Board (REB) on September 8, 2023 (REB #Pro00133615). NHCS did not have an additional ethics approval process. The ethics application process was smooth because we had worked through issues for the pilot, “Triscuit and Pepper Go to School: Elementary School Students’ Learning with and From Animals” which received approval on January 24, 2023. The superintendent and principal consented to conducting the study before recruitment began.

We submitted three amendments throughout the study. First, we submitted an amendment to include students who completed Grade 6 at NHCS and had transitioned to a conventional public school for Grade 7. The amendment was approved on October 26, 2023. We decided to develop a team of student co-researchers to participate in conducting individual interviews; therefore, we received ethics approval for this amendment on January 3, 2024. To increase parent participation, we submitted another amendment to include a web-based survey to collect data from more parents, which was approved on April 22, 2024. In accordance with University of Alberta requirements, ethics was renewed each year. Ethics is current as of September 2, 2025.

Our research questions demanded qualitative data because we assumed the social world is not fixed or absolute; collecting viewpoints from various stakeholders was required to help us understand how NHCS’ innovation shapes students’ learning. In keeping with the constructivist (Crotty, 1998) nature of qualitative research, interviews were selected as a chief data collection method because interviews “elucidate subjectively lived experiences and viewpoints from the respondents’ perspective” (Tracy, 2025, p. 170). Consequently, data were collected primarily through semi-structured individual interviews

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(Fontana & Frey, 2005) with K-6 students, Grade 7 student alumni, teachers, staff, parents, and community members. Because semi-structured interviews are less structured, a flexible and organic process was especially suitable for interviewing young children who lack experience with formal interviews. Further, semi-structured interviews are advantageous because they invite “emic, emergent understanding” (Tracy, 2025, p. 172) in which participants discover new meaning as they reflect on and answer questions. During interviews when adults said things like, “That’s a good question, I have to think about that” or students said, “I’m trying to think how to say it”, they were constructing new meaning in the moment, which inevitably corresponds to the constructivist assumptions of the study.

While an interview protocol served as a guide, scripted questions were revised or ignored in lieu of focusing on what was most important or interesting to participants. Generative questions, such as behaviour and action questions, examples, and compare and contrast questions (Tracy, 2025) served to open up conversations and allowed participants to direct the conversations.

Individual interviews were augmented by teacher focus groups, observations of student learning, and a web-based parent survey. Focus groups are suitable for gaining a comprehensive understanding of key elements in the context, particularly at the beginning of a research study (Morgan & Kruegar, 1993). Focus groups can also be a useful strategy for checking resonance of the data interpretations as the study proceeds (Lincoln & Guba, 1985), and for capturing a diversity of perspectives (Morgan & Hoffman, 2018). A focus group with teachers was conducted after data collection began and again when data collection was nearing completion. Since teachers are directly positioned to share their observations of students’ learning and life skill development, they were also individually interviewed. Teacher interviews also provided a way to gain further insight into observation data.

Observation is an important way to understand social phenomena because it can provide insight into how people interact with their environment, how the environment itself shapes behaviour, and exposes researchers to sensory data in the context such as smells and sounds (Mulhall, 2003). Compared to interviews, observations are advantageous because they do not rely on the willingness or abilities of people to recall or articulate information. When it comes to young participants like K-6 students,

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observation enables a researcher to collect data from participants engaged in natural behaviour in environments they are comfortable in and familiar with (Wästerfors, 2018). Observing students, for example, who were digging through a pile of hay, dirt, and manure from the animal pens as part of a science experiment, I was able to confirm that getting dirty or dealing with unpleasant smells did not deter them from their learning task. Observation “fills out” the data picture, and was beneficial for informing out second research question in particular regarding the agriculture environment.

A web-based survey for parents was administered to enhance data from this source. The qualitative survey consisted of mostly open questions, the kind that we intended to ask during interviews (Appendix D). There are many advantages of online qualitative surveys. For parents with busy schedules, it is a convenient way to participate. For researchers, online surveys make it possible to gather diverse perspectives within a relatively short time frame. Acting as a “wide-angle lens” surveys “capture a diversity of perspectives, experiences, or sense-making (Braun et al., 2021, p. 642).

Data Collection Procedures

Learning and site observations began officially for the current research project on April 15, 2023 with my attendance at the school’s ‘Farmraiser’ at a community hall in Calmar (400+ attendees). The individual interviews with K-6 students, teachers, parents, staff and student alumni began October 19, 2023. Data collection wrapped up in June 2025. As principal investigator, I was primarily responsible for the data collection, but undergraduate research assistants from the Faculty of Education were mentored to participate in this regard throughout the study. Partway through the data collection, we decided to include upper elementary students as co-researchers to participate in individual interviews. We wanted to ensure capacity building, which is a principle of community-based research (Ochaka & Janzen, 2014) upon which our study was developed. Further, the teachers endorsed the idea of including students as co-researchers in the study because it aligned with their experiential learning focus. In December 2023 we began the process of creating a student researcher team consisting of Grade 5 and 6 students. This emergent decision was ultimately a unique and important feature of the data collection procedures; thus, we begin this section by describing the steps we took to mentor the students.

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Mentorship of Student Co-researchers

In recruiting and mentoring students, we heeded Lundy's (2007) four-part framework of space, voice, audience, and influence. We were guided by those who have written specifically on training child and youth researchers (e.g. Cuevas-Parra, 2020; Kellett, 2005; Kirshner & O'Donoghue, 2001; Messiou, 2014; Punch, 2001). Rae Ann Van Beers, who conducted doctoral research with middle grades students (Van Beers, 2022), and Grade 1 teacher, Dreann Wurban, initiated an application and interview process with Grade 5 and 6 students interested in being researchers. This mirrored how students secured chore jobs on the school farm. A familiar process ensured students felt invited into the research space in a fair and equitable way (Lundy, 2007). Lundy's notion of voice was extended to students through this process as it afforded them a chance to advocate for their strengths. Conscious of Lundy's emphasis on inclusion, we accepted all eight who applied, giving them choices to co-conduct interviews and/or learn to use a GoPro for walking interviews (Evans & Jones, 2011) or video production.

Cuevas-Parra (2020) and Kirshner and O'Donoghue (2001) reported on the importance of student researchers' sense of ownership for the research. Thus, at the first research team meeting, each student received a University of Alberta embossed notebook to use as a researcher journal. In this space students created additional interview questions and self-assessment criteria to reflect on their learning following interviews. The journals reinforced qualitative research as a reflective process, and served as a springboard for dialogue with me and my research assistants throughout the interviews, formalizing what Lundy (2007) called audience. The students named themselves Humble Researchers, and laminated individual name badges to mirror "Dr. Bonnie" and "Miss Peters". They each received a copy of the interview steps and roles (e.g. obtaining assent, recording the interview) as we felt having a checklist would contribute to their confidence. Each student also signed a confidentiality agreement we adapted from the university ethics template designed for research assistants. These touches formalized the

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importance of the Prairie Researchers vis-à-vis the overall study, contributing to their voice and influence.

Rae Ann and Dreanne led Humble Researcher team meetings, which I attended on occasion.

Not all students were interested in co-conducting interviews, so we created another opportunity for these students to make a contribution. The group decided to create videos of how to do the chores, tutorials that could be shared with students new to the job, or families who took on the responsibilities during weekends. We felt using the GoPro to create videos as a form of knowledge mobilization was another way the students could have a voice. To capitalize on the potential technology and language arts skills the students could develop through the research, we used research funds to support the travel costs for a media expert from the University of Alberta to spend an afternoon teaching the Humble Researchers GoPro basics, camera shots and angles, and digital storyboarding. By working with the media expert, we hoped the students would develop an understanding of the university network that supports academic research, while also feeling validated by the fact that another adult was committed to supporting their success as researchers. Leah Peters, who had just joined the study at that time as an education undergraduate research assistant, led the students' continued learning by facilitating lessons and creating age-appropriate resources on computer basics, downloading videos from the GoPro, and iMovie production. This was mutually beneficial as Leah honed her teaching skills, and the students learned more about how to use the technology. One of the students' video footage was incorporated into an information video I narrated, which is hosted on the research website.

The Humble Researchers who participated in conducting interviews made decisions at several junctures in the interview process itself. For example, we paired the student co-researchers with interview participants in an age group they felt they engaged with best. They led the interviews by setting up the interview materials, including choosing which questions to include; escorting interviewees to and from the interview room; explaining the process to them, and assuring confidentiality and ongoing assent; managing the Zoom recording, and leading the questioning. They facilitated the interviews, and obtained ongoing assent by asking after the participant responded if they wanted to answer another question. After

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the interview, the student researchers chose a self-assessment question they had generated earlier to either write about or discuss with me. In heeding the Humble Researchers' opinions throughout the process and by assigning them lead roles, they were shown to be necessary and equal.

Individual Interviews

In our initial proposal we included walking interviews (Evans & Jones, 2011) as a data collection method with K-6 students with the option of using a GoPro, following the research of Tangen et al. (2022). Because they are anchored in context, walking interviews may be effective for helping participants recall experiences (Evans & Jones). For young children, walking interviews shift the researcher-participant dynamic, which can make a research conversation emerge more naturally. The research assistants and I experimented with the GoPro, sometimes having a student co-researcher record the interview, and at other times asking the student participant to lead us by recording areas of the school that were meaningful for them. Unlike Tangen et al., we did not find the use of the GoPro effective. In fact, it was somewhat distracting for students who chose to control the GoPro, and in other interviews we felt the walking interview without the GoPro sufficed. Conscious of the class time teachers and students were giving up, we opted to conduct most interviews in a sit-down style in the school. This did not seem to sacrifice the integrity of the study because, given a choice, most students chose to do the interview in the school.

Interviews with K-6 students were planned to ensure the experience was engaging and interactive to generate as natural a conversation as possible. For each interview we set up six pairs of question cards which were laid face down on the table. Each pair was numbered 1-6, and students rolled a die to decide which pair of cards they could select from. We duplicated the cards in the numbered set to create choice for the students. On occasion, some students figured out that the cards contained the same question, but for the most part, this strategy worked, and students reported it was fun to do the interview that way.

We experimented with different questions as well as activities on the cards. We had questions based on games such as "What's for Lunch?" in which students were shown cards of animals or food

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products and were asked what ingredients were part of their lunch that day. We had a game called “Let’s Make Tracks” that depicted a picture of two different animal tracks in which students had to reason which tracks were made by a coyote, and which tracks were made by a dog. We had scenarios in which students were asked questions that pertained to specific learning outcomes, such as how to resolve conflict (Physical Education and Wellness) or what kind of agriculture products are grown or raised in their community (social studies). Students could look at pictures and tell a story about it. One card had pictures of the five senses that required students to talk about their learning through each sense. We also had a double-sided whiteboard in which we asked students to compare their learning inside the classroom and outside in the barnyard, fields, or garden. We had replicas of a cow and a pig that students could choose from and hold to demonstrate something they learned. We asked students to hypothesize what learning would be like if the animals were taken away. We asked questions specific to activities and lessons that we observed. We gave students a stethoscope to listen to animals’ heartbeats, and asked them to take us to places in the barnyard to teach us something they learned. To give students the freedom to construct their own narratives, we gave participants the choice to draw their answer or form it out of playdough (Irwin & Johnson, 2005; Ponizovsky-Bergelson et al., 2019; Spratling et al., 2012), which some students did. Site visits continued until June 2025.

I conducted two teacher focus groups via Zoom in February and October 2024. Interviews with parents, staff, teachers, and community members were conducted by me and undergraduate student researchers between October 2023 and October 2024 via Zoom.

k(.Observations

We conducted observations of learning for all grades, sometimes for class periods and sometimes for longer duration. Observations were made when students held classes in the barnyard, garden, playing field, and inside the school. We tagged along for a field trip at the local lake when students were planting trees in the riparian zone; we hiked with the students to the local creek for a pond dipping lesson. We spent many mornings and afternoons watching the students feed the animals and do the chores. We observed

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them transplanting, and maintaining the worm composting bin. We watched them bury and excavate cotton underwear as part of a science experiment on soil health. We listened as they made presentations in class. We attended assemblies, guest speakers, poetry readings, special agriculture event days, Christmas concerts, science fair, and the school's open house. We watched with the students when a local veterinarian performed ultrasound on a pregnant cow. We churned butter with students, helped them balance on ice skates, and ate ice cream. As principal investigator, I made over 30 visits to the school. The observations, as it turned out, were compelling data collection moments, perhaps because, as Wäterfors (2018) suggested, students were themselves.

Web-based Qualitative Survey for Parents

To gain further insights into parents' perspectives on their children's learning, we administered a web-based survey (Appendix D). The eight-question qualitative survey sought to gain parents' perspectives on the potential benefits and/or limitations of New Humble Community School's focus on agricultural literacy, experiential learning, and land stewardship. The survey was developed on Survey Monkey. Principal Kohel sent the link to the parents via email, including one reminder email two weeks after the initial launch. Responses were collected between April 30 and May 28, 2024. The survey was also used to invite parents to participate in an individual interview. A link at the end of the survey led parents to a separate Google doc to provide their contact information. Twenty-nine parents responded to the survey. Four parents volunteered to be individually interviewed after completing the survey.

Security and Privacy Protocols

I followed the University of Alberta's REB security and privacy protocols. All research assistants were required to sign a confidentiality agreement, including the student co-researchers who co-conducted individual interviews. Zoom audio and video recordings were saved as encrypted files on my laptop, which is password protected. These files were deleted after the transcripts were created and approved by participants. Transcripts were stored on Google Drive at the University of Alberta on a shared drive that only research assistants who had the link could access. Hard copies of transcripts and field notebooks were

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stored in my home office; no one else had access to them. All participants were promised privacy, confidentiality, and anonymity, except in the case of focus groups because of their public nature. Participants were informed that pseudonyms would be used in reporting the data, and that no identifying quotes or information would be included. In keeping with the UofA REB, the data will be retained and then destroyed after five years.

Data Analysis

St. Pierre (2011) has argued that coding can lead to “pedestrian” and insignificant themes, or extensive descriptions that lack theoretical explanation for what is going on. Coding has the effect of atomizing data, rather than keeping stories whole. We initially proposed to follow Saldana’s (2011) generic and descriptive coding which breaks down data and inventories them according to research questions. Young children, however, communicate differently than adults. Rather than lengthy detailed exchanges, conversation with young children moves through shorter, sometimes fragmented exchanges. Accounting for this, it made sense to adopt a narrative analysis approach that explores meaning of whole conversations. Developed by Maietta et al. (2021), the Sort and Sift, Think and Shift qualitative data analysis process was used to support the development of resonant claims. This process treats qualitative data like interviews and focus groups holistically, and is effective for analyzing all qualitative data from all sources because it promotes the identification of quotes that can be identified to represent a larger narrative. Inventorying quotes means that participants’ voices are not fractured through a coding process, and a more holistic picture of the data can be seen and monitored. Because qualitative research aims for naturalistic rather than statistical, generalizability (Tracy, 2025), it made sense to follow such an approach. I have completed courses on the Sort and Sift, Think and Shift method, which positioned me to create a two-day workshop to mentor the undergraduate research assistant who participated in aspects of the data analysis.

Central to the Sort and Sift, Think and Shift analytic process is identifying powerful quotes. Maietta et al. suggested creating an inventory of “pulse” quotes as an important first step after reading data episodes such as transcripts, survey responses, or field notes from observations. For example, in

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thinking about how the agriculture program shaped NHCS students' relationship with school and impacted their learning, one student said, "If this school wasn't here I don't know what I would do." I highlighted this quote as it seemed important to the question of students' relationship with schooling. Further, when observing students' learning, including during chores, I made notes about students' use of language. When students used sophisticated language such as herpetologist, photosynthesis, and gestation, and hypothesized why calcium was supplemented in a duck's diet who they described as having experience prolapse of the uterus, I labeled developing narratives as "discipline-specific understanding" and "connecting and employing concepts in reasoning."

While pulse quotes capture something that seems important about the data in initial stages, "anchor" quotes are the foundation for stories and claims. A student who talked about how holding the worms from the composting bin helped them to "respect nature" anchored a theme regarding human-nature connections. Maietta et al. (2021) also proposed noting quotes that register as "ah-ha" moments. Such "turning point" quotes shift or confirm researchers' understanding of the data. When I asked a student who was planting trees at a local lake what they thought about the activity, for example, they said it was fun and "so much better than school!" This exchange turned my thinking towards a distinction between schooling and learning.

Important steps of the Sort and Sift, Think and Shift approach are the visualization of what Maietta et al. (2021) call episode profiling and topic monitoring. Episode profiling involves diagramming the vertical story of each data episode (e.g. interview transcript). Figure 2 illustrates how pulse, anchor, and turning point quotes were visualized to develop resonant themes from the parent web-based survey, an example of a data episode.

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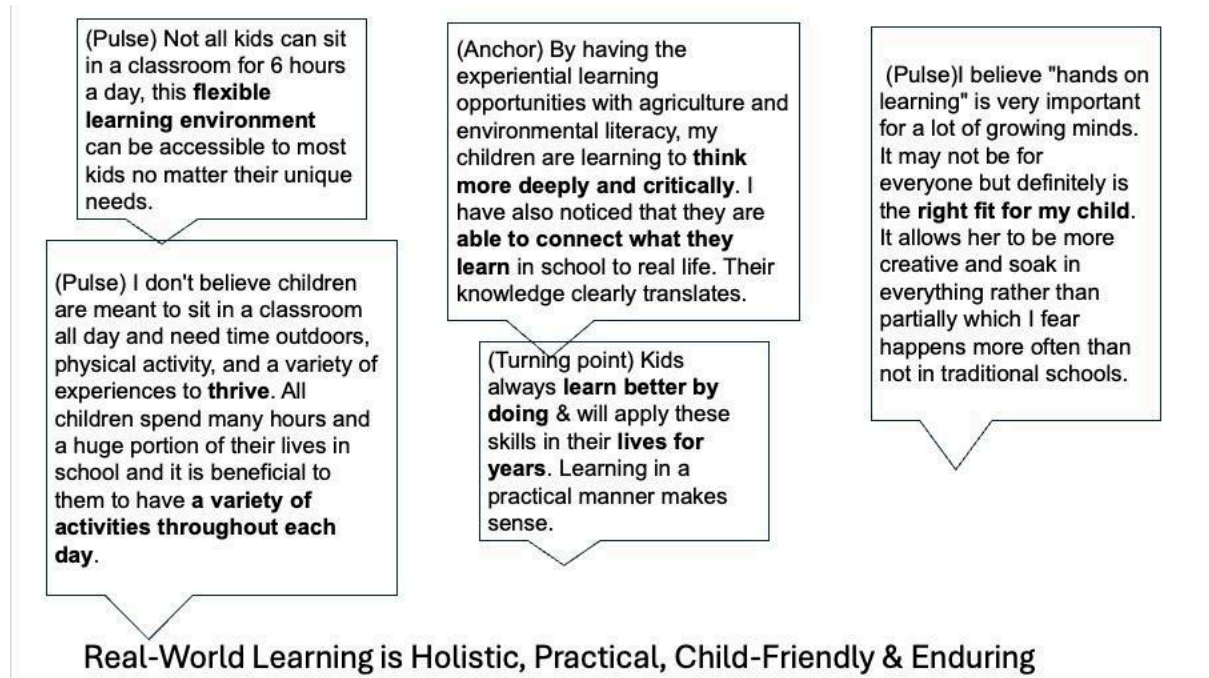


Figure 2. Example of diagramming pulse, anchor, and turning point quotes using Sort and Sift, Think and Shift using the web-based parent survey.

Topic profiling enables theme development; many iterations of topic monitoring can occur before researchers commit to interpretations. Figure 3 illustrates topic profiling that visually depicted quotations across individual teacher interviews and teacher focus groups. At the bottom of the image, a brief memo articulates the definition of a developing theme, and its connection to the place-based theoretical framework.

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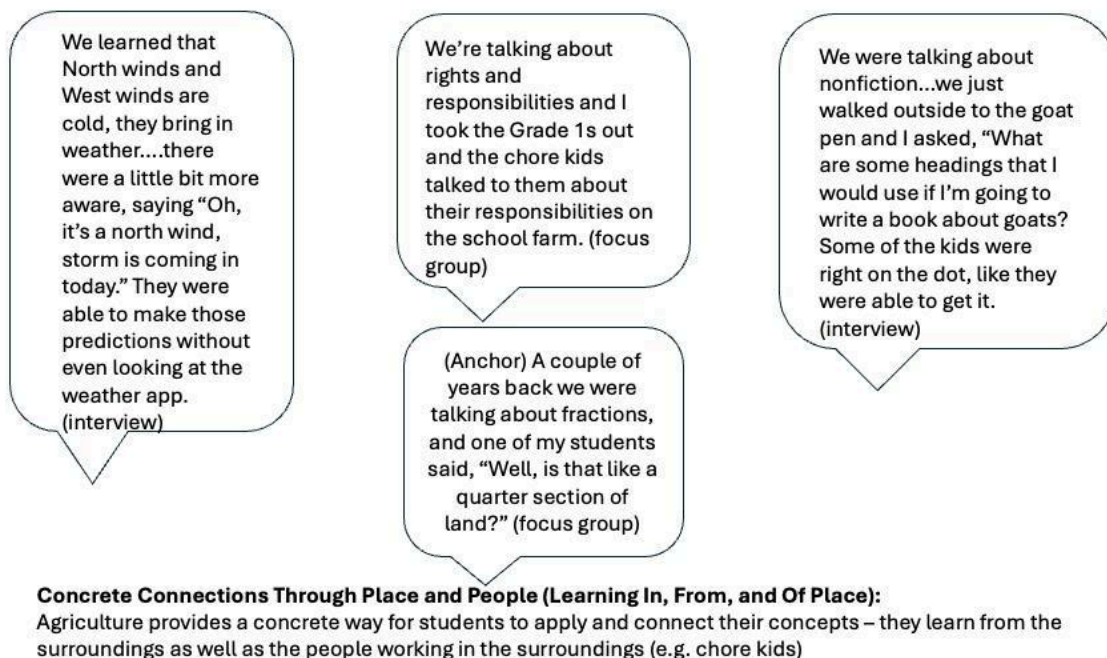


Figure 3. Example of topic profiling.

The goal of qualitative data analysis is to use themes to create resonant claims (Tracy, 2025). Figure 4 is an illustration of how data from across sources, and the identification of anchor and turning point quotations enable a claim to be made.

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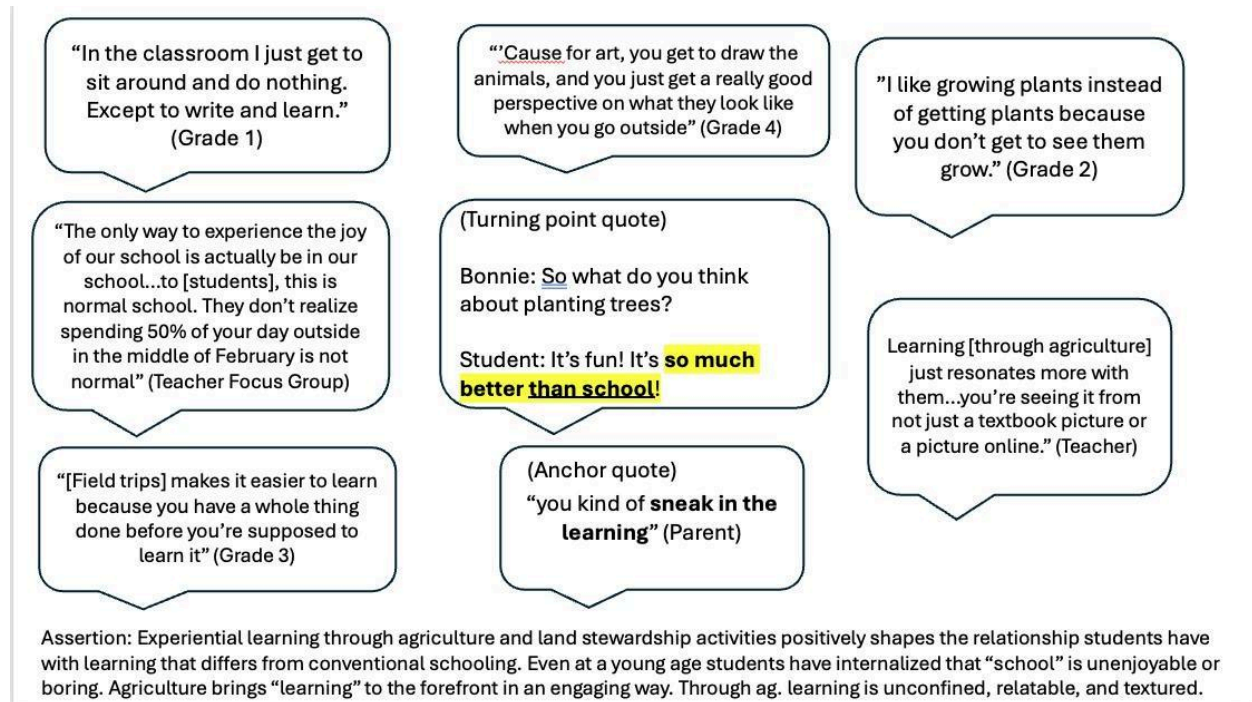


Figure 4. Example of theme development.

The Sort and Sift, Think and Shift approach to immersing oneself in the data and identifying meaningful quotations was effective for maintaining the aesthetic merit of the data, a concept that Tracy (2025) emphasizes as central to creating resonant claims. The data were held together, if you will, and connected through topic monitoring.

Validity and Reliability

Qualitative research is judged by a concept called trustworthiness, rather than validity and reliability. Trustworthiness is a matter of establishing credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). These are described in the following section.

Trustworthiness

The extent to which interpretations are credible is contingent upon how the research is conducted, and the steps taken to ensure interpretations are grounded in the data. Triangulation was introduced by Denzin (1978) as a methodological strategy of validation in qualitative research to ensure that research findings are based on methods and sources from various 'angles'. By interviewing students,

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teachers, parents, staff, and community members, we achieved what is known as source triangulation (Lincoln & Guba). By including teacher focus group, field notes from observations, and a parent survey, we achieved method triangulation. Credibility of interpretations is also achieved through prolonged engagement in the research setting. The research partnership was established in 2022 through a pilot study, and the data for the current study were collected between October 2023 and November 2024 so that the prolonged engagement at NHCS contributed to understanding of salient experiences and diverse perspectives.

Transferability in qualitative research concerns the extent to which findings have meaning beyond the case itself, and is achieved through analysis that attends to the complexity of the phenomenon. While triangulation supports multiple data sources and methods, as an analytical tool its postpositivist assumptions suggest accuracy. Richardson and St. Pierre (2018) argued that qualitative research is more suitably evaluated according to a notion they called crystallization. Like a crystal, different sources and methods of data collection lead to “an infinite variety of shapes, substances, transmutations, multidimensionalities, and angles of approach” (p. 963). With crystallization singular truths are not assumed, thus interpretations of the data are constructions across various ‘texts’. This was central in the decision to use an organic approach to data analysis that privileged narratives rather than codes. Importantly, it contributed to rigor in our qualitative case study by establishing empirical transferability (Smith, 2017). Maher (2025) argued that “empirical transfer is an important pathway to research impact” (p. 13). It is our contention that not only rural, but urban teachers and school leaders could read this report and be convinced that agriculture as a pedagogical approach may help them make meaningful differences to students’ learning in their schools.

Dependability and confirmability are intertwined elements related to the consistency and transparency of the research process and product. Systematic documentation of the data collection such as creating a spreadsheet to record interview participants’ names and interview dates, journaling field notes, and the submitting ethics amendments created an audit trail throughout the study. Member check (Lincoln & Guba, 1985) that included a summary of researcher interpretations of emerging themes at the

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end of verbatim transcripts was used to corroborate interpretations with interview participants. The use of Sort and Sift, Think and Shift as an analytical approach ensured a systematic reading within and across data documents vis-à-vis the conceptual framework to confirm findings were theoretically grounded rather than imposed by researcher bias. As a composite, these strategies support the trustworthiness of the study.

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Section 4: Findings

Granit-Dgani's (2021, as cited in Yemeni et al., 2023) four dimensions of place provided a comprehensive way for exploring how an agricultural literacy lens at NHCS enhanced students' learning and life skill development. The framework delineates learning in, of, from, and for the sake of place as distinct dimensions; however, our analysis and interpretation processes revealed that an arbitrary isolation of dimensions did not reflect participants' experiences. Rather, the dimensions overlapped and informed each other. Our claims reflect the interaction of the four elements. One exception is our final claim that agriculture contributes to learning that validates rural places, a complementary dimension that extends Granit-Dgani's original framework. In this section we make the following claims about how agriculture enhances students' learning, life skills development, and relationship with schooling:

- Agriculture anchors learning in contextually relevant, tangible goals that make learning purposeful and imperative.
- Agriculture supports personal and social development by giving students high-stakes, adult-like responsibilities.
- Agriculture brings sustained joy to learning.
- Agriculture supports students develop stewardship and citizenship.
- An agriculture lens legitimizes rural contexts as sites of meaningful knowledge and ways of life, helping students develop appreciation for and connection to place, and highlighting the significance of rural schools in public education.

Agriculture Shows Learning is Purposeful and Imperative

“I’m doing something important” (Grade 5 student).

Running a farm is distinct from other forms of experiential learning. Whereas experiential learning can be delimited and timebound, operating the farm at NHCS involved students in a collective vision with a clear long-term purpose. The farm was not a simulation or one-off project. It was real and enduring, instilling in students an understanding of the purpose of their learning, and a context to apply it

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to. Students were told it was “their farm” (Staff Member), and they were in charge of raising livestock and growing vegetables that were sold in the local community, a significant role as noted in the Grade 5 student’s quote above.

The farm made it possible for students to see the value of their learning because it required them to engage beyond cognitive dimensions; just thinking about ideas was sometimes viewed as boring and alienated from students’ daily lives. Two examples gave us insights into this. A Grade 6 student told us, for example, that even though they were good at it, “Doing four pages of math...it takes work that I feel like I don’t need to do.” By contrast, they described working on a project in this way: “I’m thinking, building and writing and...having fun experiencing how this thing works, and asking questions on how to figure out how it works more.” In another example, a teacher shared that when teaching fractions, a student asked, “Is that like a quarter section of land?” Through agriculture and other hands-on activities, students saw learning as useful and familiar. While four pages of math might seem pointless in the classroom, calculating the appropriate ratio for feed mixtures could be a matter of life and death.

While being able to apply learning to a relevant context contributes to students’ engagement, learning in, of, from, and for the sake of the farm created a more comprehensive experience because students could see the telos of their learning. The goal was something “bigger than them” (Teacher). The Grade 7 alumni students who were interviewed both reported the chores was a “highlight” of their day at the NHCS. One of them said doing chores at the end of the day helped them “power through”. By contrast, in their new school, one of the alumni reported that learning that was meant to be fun and hands-on, like a board games option class, seemed “pointless.” Even the “The Littles” (Division I students) when asked why learning about agriculture was important, could respond in future terms, such as a Grade 1 student who said, “You get smarter at learning how to grow your own food.” Perhaps the most compelling example of how the school farm impacted students’ perceptions of not only the value, but the imperative of schooling came from this parent who shared, “[Child] used to say, ‘I want to farm. I don’t need to go to school.’ Now, it’s ‘I want to farm and I *have* to go to school.’” While in conventional

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schools the question, “why do we have to learn this?” might surface, at NHCS, the farm itself provided the justification.

Further, the farm presented opportunities for students to apply abstract concepts to concrete problems that positioned them to make a contribution to the goals of the farm. In learning about photosynthesis through planting carrots, a Grade 3 student explained, “We had to make sure there’s sunlight, but it was shading at one time and then we problem fixed it.” Along the same vein, a class noticed the positioning of the cattle shelter resulted in the steers sleeping in the outdoors on wet straw and mud. They collectively applied their skills in math and knowledge about weather and animal behaviour and health to create a solution. I attended the Board meeting when the students presented their proposal. Skills in writing, public speaking, division of labor, collaboration, and advocacy were evident. Ultimately, the board did not approve their proposal, which also introduced students to the reality of democratic processes, stakeholder perspectives, and policy making. The project enriched students’ learning because it integrated many subjects, allowed them to practice skills, and reinforced students were capable citizens. Learning that “life isn’t supposed to always go your way...you have to adapt” (Parent), was also important learning. The farm offered rich opportunities for students to gain confidence, to experience agency, and feel proud while at the same time gaining an understanding of how to manage expectations.

The farm is a dynamic place; its processes and the continually changing and sometimes unpredictable nature of a farm enrich student engagement by providing authentic, novel opportunities for application in authentic contexts. In an interview, a Grade 5 student shared that a duck had prolapsed. The following exchange shows how this was an opportunity for the student to hypothesize and reason:

Research Assistant: I was wondering, do you have any idea why lack of calcium would cause a prolapse?

Student: Maybe because the calcium might be holding up all the parts inside, and then maybe when they just start lacking, it like, just falls out.

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Knowing that egg shells contain calcium, and that calcium is a strengthening mineral, this student was able to draw connections to generate an explanation for uterine prolapse. The student's ability to use their knowledge in an impromptu situation showed mastery.

What learning impacts did parents and teachers attribute to learning through agriculture? Both parents and teachers attributed the ability to take students outdoors and to the barnyard to how learning came to life and created deeper understanding. "You're seeing it not just from a textbook picture or a picture online. You actually physically get to see it" (Teacher). In talking about animal lifecycles, a parent offered, "if you've never seen a chicken in your life, what does it really mean to you? It's a picture on a page." One parent wrote, "I have noticed that [my children] are able to connect what they learn in school to real life" (Survey Response). Whether it was observing the litter in cities, planting their own garden at home, or finding a creative solution to make a treehouse more functional, parents said "their knowledge clearly translates" (Survey Response). The teachers reported notable differences in the pre-and post-tests they had designed to assess charter-specific outcomes on agricultural literacy and land stewardship. Whenever students were asked to compare their learning inside versus outside by drawing on the double-sided whiteboard, they depicted happy faces and barnyard scenes for outdoor learning and sad or neutral faces for indoor learning, and talked about learning as more detailed and engaging when outdoors. Consider their comments:

"Cause in the classroom I just get to sit around and do nothing except to write and learn" (Grade 1).

"If we're learning about animals, instead of, like, there's a picture...you actually get to see it in person through my eyes. It's just easier to visualize and understand." (Grade 5 student)

"There's a lot more hands-on things instead of like on Chromebooks." (Grade 5 student)

The farm gave students daily access to a place where learning came to life through all their senses.

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When students are part of a collective goal, they see learning as essential to that goal. As a place-based approach, the farm connects learning “beyond four walls” as the NHCS motto states, providing a platform for integrating abstract concepts and giving students not only a place, but a reason, to apply their learning. The realities of the farm teach students that their learning not only matters, but that it is imperative to the life of the animals, and the success of the operation. The farm transforms learning from an institutional experience to a goal-oriented venture that demands knowledge and skills. Along with academic impact, agriculture supports students’ personal and social development. We turn to this next.

Learning Through Agriculture Enhances Student Development Through High-stakes, Adult-like Responsibilities

“With the barnyard, it doesn’t stop when it’s not cute anymore” (Parent).

Whenever substitute teachers or guest facilitators were at the school, we asked about their impressions. We were consistently told NHCS students were “different” and “more mature” compared to students they had encountered in rural and urban schools. Teachers who had taught at other schools had similar impressions. What accounts for this? A parent’s comment that students were “holding an animal’s life in [their] hands” was a turning point that led us to assert that agriculture sets the conditions for student development in mature ways because it gives students high-stakes, adult-like responsibilities.

While chick hatching kits or sprouting plants offer students a window into chickens and vegetables, breeding sheep, raising meat birds and livestock, and planting a garden provides a comprehensive experience. A community member emphasized this:

It’s not like, oh, look at my bean seed, it grew. Now we’ll throw it in the garbage, you know? No, you’re gonna take that bean seed. You’re gonna plant it out in that garden, and someone has to go there and weed that garden, and they’re gonna have to water.

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A parent similarly emphasized that “short-term projects don’t necessarily expose kids to what’s not fun about caring for animals.” Compared to other experiential or outdoor learning settings, a farm does not give its students the choice to do the work. Farmers that were interviewed for the study described agriculture as the “one industry where you learn commitment” because “ewes might lamb at 2:00 a.m. and someone has to be there.” Students learned this firsthand. When asked what they thought they were learning from doing the chores, A Grade 6 student said, “being able to do things without complaining because with [teacher] we have to be on track, and no funny business when you’re doing chores or else we can get fired.” We have accompanied students on bitter cold days in winter. Students were properly dressed and worked at an efficient pace. When asked if they minded washing out dirty pails on a cold day, their reply was, “it has to get done.” Students learned to set aside their own personal comfort at times for the welfare of the animals. In doing so, students developed appreciation for the industry. A Grade 6 student said, “it makes me appreciate farming more because of how much work they put into that...whereas lots of people don’t even think about...they can take it for granted that they get this food.” At our initial community dinner in April 2022, developing a strong work ethic was one of the key “value-added” benefits they anticipated for NHCS students, and it appears they were right.

A bright pink sign in the school reads, “I’m making a difference”. This is lived out in how the school has organized opportunities for all students to be active participants within and beyond their classrooms. Through various job opportunities, students work their way towards taking on the bigger responsibilities of the barnyard. We have seen students folding laundry, bringing back breakfast and lunch dishes, shoveling sidewalks, assembling equipment, taking out the compost, and watering fodder. A parent commented on the importance of tasks that might seem inconsequential, “you’re empowering that Grade 1 kid by giving them a task that they can complete accurately.” The parent emphasized that students “don’t get money or candy or anything. They get praised for doing a good job, and that reward is sufficient.” We observed intrinsic motivation among the students who always were excited to help their teacher.

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While it was clear that students learned to value work because it gave them a sense of accomplishment, having a job also had the potential to transform student's negative school experiences. A telling example of this was shared by a teacher who described a student who, of their own volition, asked for a job because they were struggling with self-regulation in the classroom. The teacher commented how it dramatically changed the student. When chatting with a representative of an agricultural company, the student was reported to have said, "I used to hate school, but because I have this job, I come to school every day...I have something to do." One of our student co-researchers made a similar comment about being part of the Humble Researchers: "it's nice to have a purpose." The necessity of work embedded in an agricultural operation helps students develop behaviour and identity in relation to responsibilities associated with adult life. For students for whom 'doing school' was a challenge, the farm was a positive space where they could feel useful and affirmed, turning school into something meaningful.

Among the most coveted jobs at NHCS is the chores crew. "They're all dying to get a job," a teacher said. We argue that the responsibility to care for the animals was perhaps the most convincing reason for this form of place-based approach. Because of the need for strength and size, Grade 4-6 students were eligible for chores jobs, which, except for a General Manager position, were primarily organized around responsibility for one group of animals, and the gardening. A Grade 3 parent told me their child had already begun to think about what job they would apply for. Students went through a formal process of completing an application, preparing a resume, and participating in an interview by a teacher. A Grade 5 student described the interview as "very scary", but they got the job, a sign that they successfully managed their stress. One of the reasons parents supported NHCS' unique approach was that they wanted their children to "get out of their comfort zone and try something new" (Parent). Another parent confirmed that outdoor learning and the barnyard made a palpable difference in their child: "[Child] always used to be very cautious. He was very careful with everything that he did, and always looked for the hazards in things...and we definitely noticed that he is a lot more willing to take risks with doing stuff outside."

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Farming is also a context in which mistakes are immediate, costly, and sometimes grave, and one cannot hide from them. Students learned to deal with consequences of their actions as well as unpredictable ones. Elements such as weather and predators, for example, are not within one's control. On occasion, we arrived at school to learn that an animal had been killed by a wild animal, or succumbed to illness. The odd time a gate was left open, students had to scramble to herd an animal back into the pen. In this regard, NHCS is markedly different from most schools who aim to shield students from discomfort, challenge, and negative feelings. In a world where trigger warnings have become standard, NHCS students have a supportive environment to learn to deal with difficult emotions. This perhaps explains why students could talk about the death of animals with composure. They said they were sad when animals died, but not overcome. One student suggested, "You gotta move on" (Grade 4). From a community farmer's point of view this was the value-added nature of learning through agriculture compared to children with no exposure to death who "completely fall apart" when they lose a pet, for instance. We were also struck by how students reconciled their relationship with the animals they named and loved with the fact that they were part of the food chain. A Grade 6 student said, "there's livestock and there's deadstock. Eventually everything dies." When all their fish died, the students held a funeral for them. The death of animals prepared students in grieving and rebounding from loss, and gave them a chance to practice rituals of death. Importantly, the teachers and staff respected the students' capacity to handle the realities of the farm. While they did not force students to witness butchering, for example, until they felt prepared, they supported students without softening or disguising the inevitability of livestock processing.

Through observations and conversations throughout data collection, we developed a long list of knowledge, skills, and dispositions that students demonstrated through their agriculture and experiential activities: strong work ethic, commitment, responsibility, accountability, sacrifice, selflessness and delayed gratification, independence and interdependence, critical thinking, curiosity, problem identification, resourcefulness in problem solving, judiciousness, ethical reasoning, innovation and

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creativity, risk-taking, resilience, fortitude, self-awareness, self-motivation, negotiation and conflict resolution, patience, respect for others and nature, empathy and compassion, leadership and teamwork, adaptability and flexibility, emotional self-regulation, generosity, oppositional thinking, planning, routine, financial literacy, self-advocacy and agency, communicating with adults, joy in learning, and fitting for NHCS, as one teacher said, “humbleness”. Our list corresponds and adds to the 4-H Targeting Life Skills Model (Hendricks, year) that served as a sensitizing framework. The list may seem unimaginable until you understand that the teachers all have a common expectation: “if you let them be little humans and make mistakes and take risks and stuff, they really rise to the occasion.” This attitude of respect for students may have contributed to them being perceived as “different” compared to their contemporaries in other schools.

Learning Through Agriculture Brings Sustained Joy to Learning

“My children come home happy” (Parent).

NHCS received plenty of interest from other educators around the province who called to inquire about their programming. When this happened, teachers would reply, “Come see it. Come *feel* it.” Staff commented that students came in the door shouting, “I love this school!” One time, for no apparent reason, a teacher caught a student smiling while working independently, and when they asked what was going on the student said, “Nothing, I’m just happy.” We came to learn that what marked the difference at NHCS was that it was a joyful place. Indeed, joy was witnessed and felt every time we were at the school. We contend, therefore, that the agriculture focus enabled emotional connections to the school as a place and as a relational process, which contributed to a positive school experience.

On the survey, one of the most common reasons parents reported for choosing NHCS was the desire for their children to be exposed to active learning; they did not want their children “stuck in a desk all day” learning through a “sterile”, “institutionalized” and “impersonal” approach. In interviews, some reported dramatic changes in their children’s dispositions and attitudes towards school compared to their child’s previous school. For example, “[Child would] lay on the ground outside of the door and scream

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and cry and not want to go into the school.” Since attending NHCS, this parent said, “I’ve not had a single fight.” Similarly, a parent described their child as often being agitated at the end of the day at their previous school, but it was “a whole different kid” when the parent picked them up from NHCS. One parent admitted to being surprised that their children enjoyed school as much as they did because they were “not the academic type”; but they came home excited, particularly about the lessons they did outdoors.

There were families from outside the bussing route who chose to drive their children 20-30 minutes to NHCS, and we were particularly interested in their perspectives. The most common reason cited was that their children were unhappy in their previous school. That some parents were motivated to choose NHCS despite having to make financial sacrifices, prompted us to explore further. When asked if they felt it was worth it, one said, “A thousand percent...for the quality of the education.” As another example, a parent of a student with a learning need reported that learning traditional subjects through agriculture was more enjoyable, and improved their child’s writing skills. “All [child’s] sentences were about tractors”, they explained. In some cases, parents highlighted simple yet profound joy. For example, describing their child, pulling out the carrot they had planted, the parent remarked, “The joy, the thrill, the *sass* in their voice. So much pride. It’s a beautiful thing.”

A farmer emphasized that despite how hard one has to work in farming, such as fighting to save a calf’s life, “it’s the greatest emotion in the world.” A vivid example of the role of emotion in learning was an afternoon we observed a class who was following up on an experiment in which they had buried cotton underwear to test soil health in different areas of the school. That particular day, the joy was sparked by suspense and wonder—would the underwear be full of holes? Joy also came from the satisfaction that their predictions came true! But additionally, joy came from the teamwork and effort it took to find the last pair of underwear buried deep within a huge pile of straw, dirt, and manure out in the barnyard. We watched the scene unfold: a handful of students with shovels evolved into a team excitedly plunging various instruments into the pile to assist. Before long, they fetched a wheelbarrow and dug trenches so

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they could haul out material. They created a sophisticated division of labor. They crinkled their noses from the smell from time to time, but laughed, and carried on. They did not find the underwear that day, but the teacher later told us that the students went out on their break every day for a week to dig until they eventually found that last pair of underwear. Curiosity and wonder kept students in discovery mode long after the lesson was over. What else but joy could explain their persistence?

Another element of joy was in the sense of community at the school. On the survey, a parent wrote that a strength of NHCS is that it “feels like a big family”, and perhaps it is the relational dimension of agriculture that also made NHCS a joyful place. Students’ enthusiasm was nourished by a sense of belonging, a natural outcome from the intergenerational interactions that naturally emerged. Older and younger students routinely worked together on the chores, forging bonds that cut across grade levels. One of the benefits of chores that students described was that they became friends with students they might otherwise never have talked to. Working together on chores and other agricultural activities was like “growing up with siblings”, said a community member. Relational work was inherently embedded into the daily rhythm of agricultural life. Interacting with students outside their grade level increased the likelihood of students developing lifelong friends. A student co-researcher asked a Grade 6 student, “What do you feel connected to?” The student, who was a regular participant in the chores, responded by saying, “just all the memories when I was here”, which is illustrative of how agricultural learning leaves an emotional impression, not just knowledge outcomes.

It was with respect to joy that we perhaps gained the deepest insights into how agriculture shapes students’ relationship with school. An exchange I had with a student when they were planting trees at Wizard Lake was indelible in this regard:

Bonnie: So, what do you think of planting trees?

Student: It’s fun. It’s so much better than school!

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This revealed how students equated “school” with buildings and classrooms, while associating agricultural activities with learning that was fun and interactive. Agriculture and experiential learning made it possible to “sneak in the learning” as one parent suggested. Teachers, too, commented that students did not even realize they were learning when they were doing hands-on lessons, and that they think having a farm at school is normal. A Grade 6 student who regularly participated in chores said they did not like school in the conventional sense, describing being inside all day as “unnatural”. But even students who liked school, such as the student quoted above, had internalized a distinction like those of some parents who said they chose NHCS because they did not want an “institutional” education for their child. In fact, on the survey and in interviews, parents’ most frequently cited concern was their children’s ability to transition from NHCS to a traditional classroom, or succeed at post-secondary education where they would be required to sit for hours and “write long papers.” This survey comment captures the sentiment:

If the school doesn’t get approval to go all the way to Gr. 12, I think it might be a tough transition for kids to go from a very hands-on way of learning with lots of outside and opportunity to spend energy. It will be a tough transition to go to a traditional sit-down school approach.

Coming from the position of joy, NHCS highlights the potential of agriculture to recenter students on learning, rather than on the perceived conventions of schooling. Thus, the joyfulness of agriculture explains why students want to be there. On a cold February “snow day” when the busses were not running, almost all the students were at school. We witnessed this early in the data collection. In one class only three of twenty-one students were absent. The teacher said the students came because they had chores and wanted to continue working on a project. They pondered, “I thought, okay, so obviously you guys are enjoying it.” When almost everyone shows up to school on a snow day in rural Alberta, it is obvious the school has made a positive impact on the students.

Finally, while the concern in the literature on place-based education is primarily focused on academic and other school-based impacts on students, hearing parents’ perspectives on how the nature of

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their interactions with their children have shifted since NHCS' program began was a persuasive finding. Parents reported students were animated when they talked about their day at school. When asked what their children talked about, one parent explained, "The first thing in their head is spending time outside in the barns, or planting in the garden." Parents described a noticeable difference in the way their children talked about their agricultural activities compared to classroom-based learning, reinforcing the importance of emotional engagement in students' learning, as noted in this parents' comment:

When we pick our [child] and we ask, hey, did you go see the animals today, she'll sit there and tell me for the next 10 minutes about the book she read to the animals...it really makes it exciting for them, and gives them something that's out of the norm....if they [teachers] didn't relate it back to this agricultural lens, it would just be another Monday at school.

These examples show that place-based experiential learning through agriculture fosters joy that is sustained beyond the activity itself, shaping conversations at home that reinforce and extend school learning.

Thus, agriculture inspired joyful learning. This shaped students' engagement in their learning, and their overall attitude about and desire to attend school.

Learning Through Agriculture Develops Citizenship and Stewardship

"I like holding worms because it makes me respect nature" (Grade 3 student)

Character development, citizenship, and stewardship are among the outcomes for learning in Alberta's Ministerial Order on Student Learning (Government of Alberta, 2024). Through interactions and bonding with the more-than-human world, students developed an orientation toward care and compassion not only for others, but also for all living things. Spending time among nature gave students direct experiences essential for developing mindfulness and respect for nature as the student above articulated. This theme makes specific connection to learning for the sake of place (Granit-Dgani, 2021, as cited in Yemeni et al., 2023).

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NHCS' motivation to focus on agricultural literacy came from a desire for students to have knowledge about the production of food as well as an understanding of the economic, political, social, cultural, and health connections. While raising farmers was not the goal, ensuring students grew up to be informed citizens who could engage in small-scale gardening, and be responsible stewards of the land were priorities. Learning through, rather than simply about, agriculture was important to achieve these goals, as noted by this survey comment: "Seeing, caring for, touching and interacting with the animals that end up on your table provide a far more real understanding of where your food comes from than an ethereal idea we are told but never really experience." While most people have no relationship with or knowledge about the source of their food, NHCS students had both academic and embodied understanding of the processes. As young as kindergarten students could identify ingredients that went into their food as judged by their answers in the What's for Lunch? interview game. A Grade 1 student knew that bananas did not grow in Alberta, for example. Grade 2 students could list canola, wheat, oats, and barley as crops that grew in the area. Through activities such as baking, cooking, and preserving vegetables, composting and making dye out of vegetables students not only saw how their learning could be applied, but these activities instilled in students the practical value of what they grew and the ethics of waste management.

Beyond chores, activities like bottle feeding the lambs or cradling bunnies and chickens provided students with practice in nurturing, care, and compassion. At recess and lunch there were always students in the barnyard interacting with the animals. Through these interactions, students demonstrated patience and appropriate handling of animals, but they also learned delayed gratification as the animals required students to slow down, use calm and quiet voices, and to wait for animals to respond in their own time. We noted how the students reminded each other of these requirements. We could see students practicing self-restraint as they waited for their turn, and acceptance when an animal escaped their grasp and retreated to a corner.

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Not only did students care for the animals, but they sensed the animals cared for them in return. A Grade 2 student told us “I read to one of the blind ducks and he came to me...he let me pet him.” When we probed to find out why they liked reading to animals they said, “Because they’re caring and they’re loving.” One student described having “a gift” with the animals: “They [chickens] would sit on my lap and sleep” (Grade 6). Through their interactions, not only did students learn to respect the animals, but they felt loved and affirmed. Students’ sense of connection with and belonging to the natural world were enhanced through these reciprocal experiences.

Further, the animals were a source of calm and comfort. Many students described the animals as an outlet for restoring balance. For example, a Grade 6 student said, “if I can’t focus, sometimes I take a couple of minutes and just go sit with the animals.” A teacher commented that the animals provided students with a safe place for exploring their identity and practicing academic skills because “[Animals] don’t talk back to you [and] that’s a comfort level for some of these students. You see so many kids out there trying to read or practice speaking.” Animals were a relatable way for developing pro-social skills because teachers could explain, “you can’t be rough and tough with the smaller animals, because you’ll end up hurting them...it’s no different than the younger students.” When asked if the students’ engagement with the animals translated to their behaviour with each other, teachers were unequivocal that it taught them to be sensitive to other students’ feelings, to consider how their actions affected others, and to regulate their own impulses. While minor discipline issues arose now and then, a teacher equated this to regular sibling squabbles that emerge when you stay together for so long as is typical of small rural schools. Behavioural issues were not a concern in the school. Teachers reported never having had to evacuate a classroom or being subjected to violence or aggression from students. Teachers believed the animals contributed to students’ caring and kindness.

We similarly asked students if being around animals taught them about how to be around people. A Grade 2 student described it this way:

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Because animals are like humans, except they don't have human language...but they're still animals and we're animals, too, and they have feelings, too. So, if I know their feelings...they like different things. So, I'd know they're like people... I'd do different things with all of them, and see what they like or not. So, try that with people. Well, it's kind of hard to explain but like, they're like people. So, I treat them like people.

The student had a sophisticated understanding of empathy in recognizing that animals, like people, have feelings; their ability to make a conceptual leap from knowing how to respond to animals' cues to imagining how this might apply to humans provides insight into how animals have the potential to teach children perspective-taking and regard for others.

It was evident that students also had developed a strong aesthetic appreciation for nature. Perhaps the most common attraction to being outside beside the animals was the fresh air, but we also heard that students enjoyed being outside because they loved the smell of Canola and fresh rain, the rainbow of colors of the trees in Fall, the feel of grass between their fingers, the birds chirping and the grass going "whoosh" in the wind. A Grade 2 student said they liked to "hear the wonders of nature." While some may think farming is a technical job, the time that students spent outside gave them access to an enriching sensory world. They were attentive to the sights, sounds, and textures of their environment, and this disposition of paying attention lays a foundation for stewardship.

In discussing the impact of the agriculture program on students' citizenship and stewardship, a teacher said, "we're raising these kids to be awesome humans." They shared examples of how their learning manifest. When the Grade 2 class went out to clean the goat pens, for example, "it was spotless". On a cold day they picked chunks of ice out of the water buckets showing that even though they were not part of the chores crew, they were "already taking responsibility for the animals" (Teacher). When students came off the bus, teachers noticed students picking up litter without being told. We got a strong sense from the students that they valued and respected nature. A Grade 2 student said that it was important to take care of the land and not "kick the grass [because] it's Mother Nature." A Grade 3

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student suggested that the air was better outside because there were no trees inside the classroom, showing their ability to connect scientific concepts to the health of the environment. Thus, having a direct, caring relationship with the more-than-human world developed their environmental sensitivities and motivated them toward action.

In sum, the data suggest that agriculture achieves more than making students knowledgeable about food systems, it cultivates citizenship and stewardship by putting students in direct contact with the natural world. Students were as mindful of the more-than-human world as they were of each other; that their behaviour with each other aligned with their behaviour among the animals is poignant. Agriculture was more than a pedagogy of curriculum at NHCS; it was a pedagogy of connection. This idea of connection leads us to our final finding regarding agriculture as a key to validation of rural places.

Learning that *Validates* Place: An Addition to the Place-based Framework

“If this school wasn’t here, I don’t know what I would do.” (Grade 6 Student)

The value of place-based pedagogies, according to Smith (2007) is they “link schools to their communities in ways that enhance student engagement and performance” (p. 191). While place-based education may help students develop an appreciation for their natural and social environment, it does not necessarily expose students to, or help them challenge, the broader assumptions that shape how a place is understood. The concept of validation of place was inspired by conversations with adults throughout the study who frequently argued that agriculture shows students that rural communities are “globally significant” because of their role in “feeding the world” (Parent). Learning that *validates* place is more outward-facing than learning in, from, of, and even for the sake of place. Rural-specific innovations such as agriculture become understood as equally credible, perhaps even advantageous, compared to urban schools. NHCS showed that agriculture can be more than an alternative, optional educational program, and when implemented effectively, it creates mutual benefit. Through agriculture, NHCS students create deeper appreciation of and connection to their community, and the community feels not only acknowledged, but respected and understood. Learning that validates place challenges urban normative

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(Fulkerson & Thomas, 2019) assumptions that persist around rural schools and communities as inferior because when students learn through agriculture, they internalize agriculture and rural spaces as legitimate sources of knowledge. As an addition to Granit-Dgani's (2021, as cited in Yemeni et al., 2023) four-part dimensions of place-based education, learning that *validates* place is defined as the legitimation of local knowledge and ways of life that results from a seamless connection between students' home and community, and school learning.

No matter the age of the students, a teacher said, "as soon as you start talking [about agriculture] they have a story." Even kindergarten students who do not come from a farm were excited to talk about a Thanksgiving turkey dinner, or carving a jack-o-lantern after a visit to the barnyard or garden. Interviews generated many stories from students about riding horses, hiking with family, quadding with cousins, fishing, hunting, herding cattle, the coyote that came into the yard, litters of kittens, curling, and cooking. Teachers used these as launch points with conceptual merit, such as a social studies lesson on how the size of modern agricultural equipment accounts for why farms are spatially different compared to farms at the time of European settlement. The integration of the students' stories into their learning signaled the importance of the students' worlds. In another context, students might have to leave their stories of walking through a wheat field or herding cattle at home because these ways of being and knowing might seem irrelevant to formal schooling. A key reason a Grade 7 said they missed NHCS was that it was difficult to find community; they felt "slightly in or out, and you gotta be doing certain things to be in." At their new school, their passion for agriculture had no place. Thus, at NHCS agriculture was more than a bridge between students' home lives. When students came to school, their stories and experiences came with them as authentic learning "texts" that played a formal role in enhancing the curriculum. Agriculture made the transition between home and school seamless.

Further, when students recognized their home lives in their school lives, the perception was it impacted how they felt about school. For the Grade 6 student who was cited at the beginning of this section, the agriculture program dramatically changed how they felt about school because learning outside

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felt “more natural”. A parent from a farming family said that even though their children could learn about agriculture at home, learning through agriculture would shape their understanding of the value it plays in society. Their comments point to the potential for an agriculture immersion program to challenge stereotypes or negative perceptions about farming:

[agriculture] ties your home life to school, to the real world, and it’s not weird, right? There’s some mystique about being on a farm...it’s kind of mysterious to some people. I don’t want my kids growing up thinking it’s weird, you know?

This parent’s comment came to life through an example provided by a teacher. While most schools have noon-hour intramurals focused on sports, NHCS included agriculture. They described a scene during an option that focused on livestock showing, an activity that the older students led. A 4-H student was teaching a classmate who had never experienced halter training a steer. All the students were gathered around saying, “Don’t give up! You can do it!” (Teacher). In this single activity, urban normative assumptions were being broken down. For the student doing the instruction, their expertise was worthy of including in the extra-curriculum. For other students who had no experience leading a steer, they learned this was a worthy thing to try. It showed that agriculture matters as more than a scientific subject, but as an experiential way to connect to rural places.

Along this same vein of mattering, a strength of NHCS was the overwhelming level of community support. Staff reported that donations came from families who did not even have children in the school. Five hundred tickets to the annual fundraiser sold out in less than two minutes. What explained this level of support? Part of it was legacy as one community member explained, “We are very proud of our agricultural heritage...[NHCS] is a true beacon or advocate for what farm life is about...We have a grassroots school that actually talks about what’s important to *us*.” There was a feeling that students received a well-rounded education, but also that schooling that reflected their surroundings would ground them in something important because they were participating in a vocation that was

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“thousands of years old” (Community Member). This offered a new way for the students to relate to rural as places with important history in which they could recognize themselves as integral participants.

Community members were regularly involved in the farm operation. Consequently, students saw that knowledge was not confined to their teachers, but that valuable expertise resided in local farmers, neighbors, parents, grandparents, aunts, uncles, entrepreneurs, municipal leaders, conservationists, veterinarians, and tradespeople. Students were visibly proud when a familiar member came to school to fix something, for example. By learning with adults from various walks of life, students were exposed to a broad notion of what being educated means. Moreover, they learned to respect all forms of knowledge, and it was evident in how attentive and engaged they were when outsiders came to the school. Exploring this further, we followed up with an education facilitator who had spent the day at NHCS showing students various activities connected to the curriculum. It was the first time the facilitator had been to NHCS, and they described the experience of teaching NHCS students as completely different than students in city schools because NHCS students “actually listened.” They are worth quoting further:

It felt like they (NHCS students) were more invested in what they were learning because they would have to apply it somehow in the future, or real life...They wanted to understand what their job was...a lot of bigger center schools, the kids just wanna jump right in and do it.

The continual presence of adult experts gave students regular opportunities to practice and articulate their agricultural knowledge. Given their young age, they had impressive confidence speaking with adults, and we regularly noted their ability to engage with conceptually specific language. A parent expressed surprise at their child’s knowledge when talking to a local farmer, given the family itself was not engaged in farming. Further, these adults engaged with the students as equals. We noted this when a veterinarian came to the school to demonstrate a medical procedure. The veterinarian spoke to the students using precise medical terms, and presented complex ideas without simplifying or diluting them. The students were completely silent throughout a procedure that could have given the impulse to giggle or feel anxious. By using advanced explanations, the veterinarian signaled that the students were capable

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participants, and reinforced that by participating in agriculture, they were members of an important field of study. These exchanges contributed to the validation of rural in a mutually beneficial way: the agriculture community was held in high esteem, and students gained insight into how agriculture involved disciplinary knowledge that was defined by specialized knowledge. This positions students to develop a positive attitude about and respect for rural places as sites of specialized knowledge.

A Word about Co-researching with the Grade 5 and 6 Students

Although our research study did not initially plan to engage students as co-researchers, the Humble Researchers gave us poignant insights that warrant inclusion in this findings section. The co-researching experience, like the chores perhaps, invited the Grade 5 and 6 Humble Researchers into a world that is normally reserved for adults. While Youth Participatory Action Research is increasingly engaged as a way to empower youth (Williams, 2024), it is rare that elementary school-aged children are included in these initiatives. Our study was unique in this regard. Over time, we saw the students develop. Importantly, we saw ourselves develop as well.

With every interview and every chance to record with the GoPro, we saw students not only build skills, but confidence. They became more comfortable leading the interviews, and improved their listening skills so that they asked better follow-up questions and prompts. A student who had never used a GoPro before figured it out by trial and error, and within a few takes produced footage that was eventually incorporated into a research update video. The student's wide smile of pride when they watched the video and saw their name in the credits is an indelible moment from this study. In our final meeting with the Humble Researchers, we collected data on their experiences. They reported:

It's fun making up questions for people and finding the answers to things. (Grade 5)

It's helped me learn about being a role model. (Grade 5)

It's helped me with my relationships. It's helped me get to know my friends better. (Grade 5)

It feels good to be a part of something. (Grade 6)

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The co-researching experience had a profound impact on one Humble Researcher in particular, who wrote on a thank-you note to Rae Ann:

Miss V.B., Thanks for hireing [sic] me on research last year and helping me find my passion.

(Grade 5)

We wrapped up the Humble Researchers' involvement in June 2025; however, the students committed to continuing on their own by recruiting more students as co-researchers to develop their own research studies. This testifies that the co-researching experience was valuable and enjoyable for them, and for some, like the Grade 5 student above, it helped them learn about themselves.

For us adults, the co-researching experience confirmed what the NHCS teachers initially said about the students' abilities to participate in research. A most profound shift for me was how I conceptualized research impact; seeing the benefit to students reminded me that the research was not only about me, or the knowledge products resulting from the study, but rather, it was about how the study itself benefited the school. It led me to broaden my thinking about knowledge mobilization. Typically, that phase of the research would have been considered my domain, but students, teachers, the superintendent, and the research assistant have all participated in knowledge mobilization as a result of renewed thinking. From a teaching perspective, Dreann and Rae Ann who co-led the Humble Researchers mentorship, had opportunities to develop deeper relationships with students they did not teach. In watching how caring and attentive the students were to their interview participants, Leah had direct experiences with the caring dispositions of children, and how central the relational element of teaching is. Rae Ann saw students who did not always experience success in relationships become an important member of a group. Further, as a rural student who once struggled with the idea that the pursuit of formal education was not a respected option, Rae Ann realized that the Humble Researchers would not be restricted by the stereotypes of rural.

A community-based research approach ultimately challenges demands for detachment and neutrality, and places value on relational inputs and impacts (Kravchenko, 2023). This inspired a shift in

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the questions I asked, from “what am I leaving *with*?” to “what am I leaving *them*?” We report on this in detail in an upcoming publication (Stelmach et al., in press).

Summary of Findings

In relation to the first research question, agriculture enhances students’ learning and life skills development by providing a goal-oriented direction for their curricular learning that makes learning feel purposeful, and in fact, imperative. Agriculture provides an excellent experiential way for students to develop life skills because it engages students in high-stakes, adult-like responsibilities. Through agriculture, students develop mature habits that give them future advantages. Agriculture is hands-on and relatable. Novel experiences, and opportunities for engaging with animals and nature, create emotional responses to learning. The human-nature bonds that form not only help students to develop pro-social skills of respect and civility with others, but it expands their relationship with the more-than-human world, which encourages land stewardship. Only when children care about nature will they take action to protect it. Finally, by showing that an agriculture immersion program can enhance students’ learning, agriculture gains importance among other subjects, and therefore, rural spaces are viewed as places to celebrate rather than marginalize. Place-based education focused on agriculture validates rural places and people as sites of valuable knowledge.

Regarding the second research question, agriculture can transform the relationship that students have with schooling. Paradoxically, a place-based experiential agriculture focus makes students feel like they are not in school. Since learning, rather than schooling, is ultimately what we want students to develop a love for, agriculture shows promising potential as a way to transform school from a place where students feel they *have* to be, to a joyful place where students feel they *want* to be.

Finally, researching with the Humble Researchers confirms how entrusting young children with something that is normally left to adults—much like running a farm—creates benefits not only for them, but also for the adults. Children are capable of more than adults might give them credit for.

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Section 5: Discussion and Conclusion

Discussion of Findings

Decades ago, writing about environmental education, Stevenson (1987) argued that the kind of learning that is required for students to be prepared to address worldly challenges is thwarted by four “regularities” in the education system: (a) the standardization, and ultimately limitation, of knowledge based on established dominant disciplines; (b) teachers as the primary source of knowledge; (c) assessment of learning designed for ease rather than meaningfulness; and, (d) control of students as an organizational priority. Twenty years after Stevenson, American scholar Smith (2007), argued that place-based education (Gruenewald, 2003), with its emphasis on privileging local knowledge and encouraging students to have autonomy in their learning, was a plausible way to dislodge these persistent regularities. At the time however, Smith argued that, “not much revolutionary pedagogy is happening anywhere in the United States or elsewhere” (p. 205). Arguably, NHCS is an exceptional case study that disrupts these regularities. By immersing students in a working farm where formal curriculum is connected to the curriculum of their community, place is privileged and learning gets reframed. The achievement of outcomes for NHCS students is directly connected to achievement of a larger purpose. This reconfigures schooling as a place where students have agency, where they have opportunities to develop mature, life-enhancing skills, and where they learn that where they come from matters. The findings from NHCS not only confirm that hands-on learning through agriculture and attention to land stewardship makes learning more meaningful and students well-rounded, but also refine theoretical understanding of how rural schooling might be reconceptualized in positive terms. NHCS is not simply a success story, it is a disruption of dominant narratives.

The Importance of Long-range, Goal-oriented Learning

Fullan and Quinn (2024) have argued that students feel alienated from the content of their schooling. NHCS is an example of how agriculture as a place-based pedagogy can change how school is experienced when there is a direct connection to a larger purpose. While achieving on an assignment, test,

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progressing through grades, and earning a Grade 12 diploma are long-range goals, for students who feel alienated from the curriculum, these may not be meaningful.

Compared to programs that involve farm visitations, extracurricular, or one-time excursions in the natural world (e.g. Smeds et al., 2015), NHCS students are tied to the life cycles of animals and plants through processes of food production. Being part of the working farm connects their learning to a vision and a collective purpose that has clear, achievable goals. In an immersion context, the farm is not a backdrop to students' learning, it is integral to how they learn, what they learn, and most importantly, why they learn. The responsibility to participate in an ongoing project, amplifies the motivational and academic benefits reported in shorter interventions. For example, teachers can introduce chick hatching to students through programs that supply eggs and incubators. Through such programs students can witness the beginning of a chicken's life, but because the chicks are removed days after the eggs hatch, students have limited exposure to the chicken's life. Consequently, students do not have the opportunity to understand the responsibility, trials and tribulations of raising a chicken to adulthood or how the chicken becomes part of the human food chain.

The compartmentalization of learning through traditional subjects, an emphasis Gough (2008) called "content fetish" reduces the meaning that students can get from a time-bound activity such as chick hatching. Gough wrote, "a single activity may teach some facts, but it is important that students understand how an on-going relationship changes the meaning of an activity" (p. 83). Our study affirms the importance of connecting students to their surrounding environment and communities through concrete, prolonged experiences as a means to enhancing learning (Kolb, 1984; Bradford, 2016; Smith, 2002), but also emphasizes that an agriculture immersion program makes learning meaningful by embedding curriculum into inter-disciplinary, ongoing experiences. Caring for animals and growing vegetables for market transforms learning into concrete accomplishments that could not be made without students' abilities. Consequently, the imperative of learning becomes more acute. An agriculture immersion program can effectively challenge the regularities that Stevenson (1987) originally raised as a critique of formal education because while curriculum is still organized around subjects, the farm is a

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co-curricular mechanism. Further, because students take ownership for the farm, they learn to see themselves as holders of important knowledge in line with their teachers.

The findings from our study also suggest that the mechanisms of engagement through place can be conceptualized in a broader way. For example, Azano and Biddle (2019) cautioned against the use of place as “an instructional trick to gauge interest” (p. 9). Because teaching through agriculture was a universal approach at NHCS, the students were able to see it as a central goal of their learning. This reinforced the purpose of their learning not only in the moment, but in a future-oriented way. When students realized that their future goal to be a farmer *required* them to go to school, for example, the importance of facilitating curriculum in a way that answers not only what students have to learn, but for whom and to what ends became clear.

The Connection Between High-stakes, Adult-like Responsibility and Life Skills Development

Throughout the course of the study, educational issues reported through the media made it evident that NHCS students are developing in ways that set them apart. In May 2024, for example, I listened with interest to a featured story on the CBC radio program, *The Current*. The story was about the University of Waterloo’s introduction of a course, *Adulting 101*. The purpose of the course was to support young adults in developing important life skills including “household maintenance, basic nutrition, how to navigate a grocery store...finances, and maintaining relationships” (Medford-Kerr, para. 8—9). A third-year student interviewed for the story reported they wished they had learned how to manage themselves earlier in life. That same year, based on a study of 308 Ontario youth between the ages of 9 and 14, Spadafora et al. (2024), reported a significant increase in classroom incivility defined as “rude low-level behaviours that interrupt a cooperative learning environment” (p. 5) compared to pre-pandemic times. In that study, teachers of primary school-aged children reported lack of routine and social skill, general lack of respect and increased individualism as the culprits. In other research, because of the decline in time that children spend outdoors (Louv, 2005) and the risk-averse tendencies of parents, there have been recent evidence-based calls for adults to structure risky play in children’s environments (Visser & Ellerbeck,

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2025). When one thinks about these trending concerns, the contrast with NHCS is striking. NHCS students are already participating in what might be considered adulting activities, such as cooking with the vegetables they grow. By necessity on the chores crew and inter-grade learning, NHCS students learn how to cooperate, solve practical problems, navigate interpersonal conflict, and experience accomplishment in a whole-school endeavor. As early as Kindergarten, NHCS students have opportunities to interact with nature, to explore their strengths and limitations with others and the more-than human world, and to learn what risks they are comfortable with. Taking care of the farm immerses students in adult-like responsibilities that carry real consequences, cultivating mature levels of responsibility, resilience, and risk-taking. These students act like the “good humans” the teachers hoped they would become.

Agricultural, experiential and place-based learning research confirms the academic, social, and personal benefits when students do hands-on learning and outdoor learning (Asfeldt et al., 2021, 2022, Curtis, 2022). Our findings extend existing scholarship on agricultural literacy by showing how the demands of the farm can lead to life skills such as a strong work ethic, accountability, and cooperation (Bradford, 2016; Hershey & Parks, 2022) in children of all ages. Tasks that matter and cannot be deferred appear to be a strong developmental mechanism for young students. Because experiential and place-based learning through agriculture tend to be highly structured so that students have immediate, positive experiences in controlled environments (Smeds et al., 2015), factors such as risk and discomfort have been removed. Further, the focus on positive feelings associated with hands-on, place-based learning, including through agriculture, overlooks the role that challenge, discomfort, and unpredictability can play in building life competencies.

The impulse to protect children from difficulty and to minimize the impact of negative consequences is understandable, but perhaps doing so underestimates their existing emotional strength and their maturity to own their actions. NHCS’ motto, recited at the end of students’ public announcements every morning, is “it’s okay to fail, but it’s not okay to not try.” The demands of the farm

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encourage them to embrace the idea that difficulty, discomfort, and failure are an acceptable part of life.

According to Easter (2021), author of *The Comfort Crisis*, “overly comfortable [and] overbuilt environment[s]” (p. 19) eliminate experiences of difficulty, discomfort, and failure, impeding satisfaction and the development of character. Research confirms the importance of challenge in the development of resilience (Pool et al., 2024). Removing risk, challenge, and negative experiences is a modern-day example of the control of students that Stevenson (1987) identified. The findings from NHCS suggests that the inclusion, rather than the removal, of physical and emotional challenges may contribute to students’ growth.

The farm is thus perhaps an antidote to the “culture of convenience” that a parent described when they surmised that the expectation for ease and enjoyment that characterizes modern-day living removes opportunities for children to deal with negative situations and emotions. At NHCS students regularly engaged in physically demanding work in inclement weather, and work that was not glamorous. Through agriculture they learned sacrifice, commitment, and what Duckworth (2016) called grit. Further, conflicts get settled independently, peacefully for the most part, and efficiently because students had work to complete within a time frame. The animals’ lives depend on them. One might assume that such a high-stakes responsibility would create too much stress for children, but the NHCS students proved this not to be the case. Concerns over mental health and self-regulation were not prevalent in this school.

Although experiential and place-based learning, including agriculture-based learning, are praised for connecting students with real-life problems and contexts, these contexts are often mediated by institutional constraints. For example, Beeman (2021) argued that a narrow conceptualization of risk, such as avoidance of injury, overshadows the risk of students not gaining long-term benefits that can only be gained by engaging in less controlled and more challenging environments. This type of risk is what Beeman called wide risk, a conceptualization of risk based on the principles of Wild Pedagogies (Jickling et al., 2018). Wide risk, like Wild Pedagogies, erases boundaries between indoors and outdoors, allows for spontaneity and unpredictability, and embraces learning *with*, not simply *about* or *of* nature. These

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features directly challenge the constraint of Stevenson's (1987) regularities outlined at the beginning of this discussion section. Beeman argued that wide risk is the type of risk schools should embrace because failing to do so pre-empts students from engaging in activities that will have long-term health and wellness benefits. One of the benefits, Beeman argued, is "a more participatory whole-being experience involving a sense of expansion and reconnection" (p. 333). Beeman might suggest NHCS has paid clear attention to wide risk, which has allowed students to develop a "greater range of attentiveness" (p. 333). Wide risk supports students to read their environment so that they know how to be safe from narrow risks, such as injury.

When outsiders learn that there are large animals like steers and pigs at NHCS and that children are responsible for caring for them, they are incredulous. At a young age NHCS students have already mastered skills that today's young adults have claimed a course like Adulting 101 could help them to be more self-sufficient. Given NHCS students' maturity and character, it is clear that environments that encourage students to challenge themselves can nurture skills and dispositions that will set them up for independence throughout their lives.

The Importance of Joy in Learning

Over the last several years, mental health among young people has been an increasing concern. Based on data from Statistics Canada's 2022 Mental Health and Access to Care survey, a report by Children First Canada (2025) highlighted that over 18% of youth 15 years and older met diagnostic criteria for "mood, anxiety or substance use disorder" (p. 26). One in five youth between 12 and 17 years reported symptoms consistent with a mental disorder. While the decline in children and youth mental health and wellbeing is often attributed to the pandemic (Craig et al., 2025), data from Statistics Canada's Community Health Survey (2023) suggest "mental health indicators for youth began declining before the COVID-19 pandemic" (Mental Health Canada, 2024, p. 4) by as much as 55%. In *The Anxious Generation* (2024), Haidt reviewed American and international data to track the decline of mental health to the ubiquity of smart phones and social media beginning in 2015. Using data from the Program for

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International Student Assessment (PISA), Twenge et al. (2021) analyzed responses to questions about students' experiences of loneliness and sense of belonging and concluded, "across the Western world...as soon as teens began carrying smartphones to school and using social media regularly, including during breaks between classes, they found it harder to connect with their fellow students" (p. 43). Scores on students' sense of alienation in school went up worldwide between 2012 and 2015. Against such statistics, the joy that NHCS students exhibit, highlights a central role that schooling plays in cultivating positive feelings about life.

Craig and colleagues' (2025) pan-Canadian survey of over 25,000 Grade 6-10 students (excluding New Brunswick and Nunavut) provides further telling data. Data were not disaggregated; however, over 2100 Alberta students took part suggesting the data have meaning for our purposes. On the question of feeling sad or hopeless, 36% of cisgender girls and 19% of cisgender boys in Grades 6 to 8 reported experiencing sadness or hopelessness every day for two or more consecutive weeks. On questions of self-confidence, 13% of cisgender girls and 29% of cisgender boys in Grades 6 to 8 reported feeling confident. On a scale of 1-10 regarding life satisfaction, the percentage of Grade 6 to 8 students reporting 9 out of 10 or higher was 24% for cisgender girls, 39% for cisgender boys, and 9% for transgender and gender-diverse students. At a young age, it is concerning that a low percentage of Canadian students experience life satisfaction to a high degree. When NHCS students describe gratitude for the agriculture program, and when they try new things like halter training a steer, it suggests school is a place where purpose and confidence exist.

In addition to poor mental health, among the factors listed by Children First Canada (2025) as threats to children were bullying and limited physical activity and play. Seventy-one percent of youth (12—17 years of age) experienced bullying within the previous year, which included name calling, exclusion, and spreading rumors. With respect to physical activity and play, only 28% met the daily recommended amount of 60 minutes per day contributing to concerning rates of childhood obesity

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compared to 30 years ago. In all the time spent at NHCS, the interviews I conducted, and the informal conversations I had with students during recess and lunch, I never observed or heard about bullying.

These trends regarding children and youth mental health and wellbeing are alarming, and directly affect classrooms. For example, the Alberta Teachers' Association (ATA) (2024b) reported that among over 2100 teachers, 52% had experienced violence and aggression, and 60% of the time it was from students in their classroom. In another study, emotional, social, and behavioural challenges were the greatest sources of classroom complexity (ATA, 2024a), and were reported as key drivers for teachers leaving, or considering leaving the profession. During conversation with the NHCS teachers during a professional learning session, they reported there had never been the need for classroom evacuation.

Within the swirl of statistical data and anecdotes that have been reported over the duration of this study, NHCS has felt like an anomaly. Simply put, the kids are happy. Perhaps not all students experienced joy every day, or all day long, but positive feelings were palpable. It warrants mentioning that as outsiders, we felt the joy, as teachers suggested was possible. Given how student mental health and classroom conditions dominate current public discourse, highlighting the importance of joy that NHCS students experienced is important. Existing scholarship has highlighted that learning is qualitatively enhanced through experiential and agricultural learning, but the focus has tended to be on the cognitive impacts within specific curricula. Data from NHCS make a case for considering the integral role that joy plays in the learning process and students' relationship to school.

Even though we are not claiming causation or correlation, when students choose to come to school on a snow day, and parents report that their children "come home happy" and excited to tell stories, it is difficult not to attribute their joy to the innovative agriculture programming. It is not only a few students who looked joyful. Joy could be felt everywhere. Previous studies have reported that school-based agriculture has led to heightened enthusiasm and improved attendance among students (e.g. D. Blair, 2009). However, the findings from NHCS go further by showing how joy can become a routine part of school because agriculture and land stewardship, activities they enjoy, are regularly integrated into

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their learning. Where does joy fit as a learning outcome within the ordered disciplines (Stevenson, 1987) that constitute curriculum?

Canadian scholars Judson and Datura (2023) observed that “conventional K-12 schooling remains an overwhelmingly indoor, individualist, and human-centered experience that is essentially place-*less*, rarely enacting the unique affordances of the local ecology or place-specific culture(s)” (p. 2). Research employing affordance theory argues for designing schools to capitalize on social and physical opportunities so that students do more than “sit, watch, and listen” (Lippman, 2023, p. 197). While this research reinforces the need for rethinking over-structured classrooms, the research still assumes school is a building. Judson and Datura emphasized that meaningful encounters with the outdoors are not simply achieved by taking students outside. It is the intentionality of NHCS teachers that contributes to wonder-full experiences that engage students emotionally, physically, and intellectually within contexts that defy the assumption of control that Stevenson (1987) critiqued.

While place-based education assumes geography as a starting point – a physical place—the farm and fields afford learning that transcends this limited understanding. NHCS students learn with their whole minds and bodies in what might be termed, a *sense-thetic* way; their learning is both sensory and inherently aesthetic. Joy comes from holding soil in their hands and knowing what healthy soil feels like, allowing compost worms to wriggle in one’s palm and respecting their role in ecology. Joy comes from noticing the northerly wind that is telling them they have a couple of days to get the garden harvested before the snow comes, and feeling proud that they could read the weather without an App. Sensethetic learning comes from discerning animal behaviours, such as knowing when it is permissible to get close to the fuzzy new lambs and the need to retreat when they notice the ewe exercising protective instincts. Given how neuroscience has confirmed the importance of the body in learning (e.g. Macedonia, 2019), NHCS illustrates how disrupting conventional assumptions about schooling can create experiences that are qualitatively different for students. The significance of NHCS’ approach is that students do not occasionally visit the outdoors to momentarily engage beyond the cognitive, but rather, they *live within* a

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world where these experiences are constant and integral to their schooling experience. This is where joy resides.

As it turns out, the title of the study, “School is Such a Chore!” captures an unexpected paradox. A common refrain among students was, “it doesn’t feel like school!” While much of existing scholarship endorses school-based agriculture for its ability to engage students in real-life contexts towards better outcomes on traditional assessments, a key reason for the success of NHCS’ place-based approach is that there are more opportunities for students to engage in work that feels nothing like conventional classrooms. As the parent quoted earlier said, the farm enables teachers to “sneak in the learning.” NHCS is a case for the importance of implementing a school vision that attends to the uniqueness of the local community. And while our study did not aim to draw correlations between experiential learning through agriculture and childhood indicators of health, they are raised here because NHCS presents a different reality compared to these statistics. These were key reasons why some parents loved NHCS, and were willing to drive their children there. Given that “between 66% and 75% of mental health issues first manifest before the age of 24” (Mental Health Canada, 2024, p. 5), K—12 schools have a key role to play in supporting students’ mental health and wellbeing. While the research on experiential learning and agricultural learning highlights how hands-on learning fosters academic achievement and personal growth, our findings suggest that joy itself is a catalyst for, and an outcome of, education that is meaningful for students. By introducing students to agriculture, NHCS is cultivating a love for learning, and redefining what school can be like for all students, not just the traditionally academically inclined.

The Value of More-than-Human Interactions

In 2005, Louv coined the term nature-deficit disorder to describe the physical, mental, and emotional costs to children of growing up in an increasingly urbanized world where technology is ubiquitous and parents increasingly restrict children’s free, independent play. In their (2019) later book, *Our Wild Calling*, Louv argued that children learn “how to respect others through their relationships with animals” (p. 136), and to develop an emotional bond with nature necessary to engage in “beautiful acts”

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for the planet (p. 163). Despite the value of existing research on place-based and agriculture-based learning that confirms positive outcomes for students' learning and social development, findings are largely framed in anthropocentric terms in which places and nature are pedagogical tools, rather than beings with whom students are in relationship. At NHCS, a fundamentally different paradigm of reciprocity is assumed. The farm is not merely a site for extraction of information, but rather, a site of reciprocity. Through agriculture, students are in relationship with each other as they work and learn together to become good citizens. But they are also in relationship with the more-than-human world which helps them develop respect, compassion, and empathy for all of nature (e.g. holding worms), essential for stewardship. Indigenous scholar, Kimmerer (2024) would call the relationship between the students and the farm "mutual flourishing"; Louv (2019) might call it "co-becoming." Both are ways of seeing place-based education in terms that transcend a model of extraction.

Blenkinsop and Beeman's (2010) concept of "peerless teachers" is also useful here. Blenkinsop, an outdoor enthusiast, and Beeman, an organic farmer in Manitoba, argued that their interactions with the more-than-human world "cannot be described as 'using' the world" (p. 33), but rather as moments when the more-than-human world is a respected co-teacher. For example, animals have a quiet power when it comes to helping children develop pro-social skills. In learning to halter a steer, for example, NHCS students had to go in slow, approach within the animal's line of sight, and retreat if the animal was unwilling. By contrast, on a field trip, one might try to halter an animal and succeed or not succeed, but that would be the end of the experience. On the farm, NHCS students have daily opportunities to learn with the animals, and it is perhaps this reinforcement that develops maturity.

Another way that the more-than-human world acts as a co-teacher is in developing students' nurturing capacities, skills necessary for both citizenship and land stewardship. Melson (2001) suggested that a key benefit to children of growing up with pets is that they are "the only family members who never grow up [therefore] they function as a potential training ground for [children's] learning about nurturing others" (p. 17). Importantly, caring for animals is gender-neutral. Citing Beck and Katcher (1996), Melson

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emphasized, “A pet may be the only being that a man, trained in the macho code, can touch with affection” (p. 17). When NHCS students spent their recess and lunch cradling bunnies and chickens, or sitting on chairs waiting for lambs to *come to them*, they were not only enjoying the animals, they were suppressing impulses, attuning to the needs of others, and cultivating the “habitat of [their] heart” (Louv, 2019, p. 24). These are all necessary to inspire acts of stewardship and civic participation throughout life.

According to a report published by Gooch et al. (2024) for Second Harvest, a Canadian company that redistributes food surplus to support those in need, almost 47% of all food in Canada is wasted each year. Among the food wasted, nearly 42% could be rescued and redistributed. The environmental impact of food waste in Canada is equivalent to 253,223 one-way flights from Toronto to Vancouver. This information is shocking, but information alone is insufficient to change behaviour because without experience, the facts are abstract, and therefore inert. Through their participation in chores, students develop an intimate and realistic understanding of the effort and resources required in food production that most adults do not have. Consequently, when students appreciate farmers’ labour, they do not take for granted the food that is conveniently available at the grocery store.

Louv (2019) emphasized, “Nature becomes real only when it moves from the head to the heart” (p. 250). What sets NHCS students up for land stewardship, is that students are able to think of their food in terms of relationships, rather than simply as things they eat. Citing a conversation with an Australian ecologist, Louv (2019) wrote: “you have to love something before the motivation to protect it becomes paramount” (p. 169). Thus, while experiential, place-based, and agriculture learning have been lauded for preparing students to address issues such as food insecurity, food waste, and climate change, the objective approach to science that separates humans from the more-than-human world provides incomplete understanding (Blenkinsop & Beeman, 2010; Louv, 2019; Stevenson, 1987). Because children are fascinated with animals—something we learned both in the pilot and this study—animals are ideal “peerless teachers” of the importance of environmental stewardship. As Melson (2001) wrote at the end

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of *Why the Wild Things Are*, “In [children’s] intimacy with other species, in their ease at crossing species lines, lie the seeds of their future stewardship of the planet” (p. 199).

Re-Placing Rural Schools and Communities

During their keynote at the Alberta Rural Education Symposium (ARES) in March 2020, Professor Emeritus Ken Coates, then Canada Research Chair in Regional Innovation Johnson Shoyama School of Public Policy at the University of Saskatchewan, said, “We are losing kids to cities...there’s no one championing rural communities.” Coates bluntly said, “no one cares about the rural” (K. Coates, personal communication, March 3, 2020). Coates emphasized the need for rural schools and communities to grab positive attention to break the narrative of decline. They further argued that testimonials that highlight the value of learning and living in a rural context must be shared to create a vision of vitality. NHCS is such a testimonial. NHCS has contributed to *re-placing* rural schools and communities as powerful sites of innovation, knowledge creation, and community pride. Through their unique programming, students are gaining a positive perspective on the value of learning in a rural school.

Through agriculture, NHCS students do not only come to know rural as a place where they learn in, of, from, or for the sake of (Granit-Djani, 2021, as cited in Yemeni et al., 2023), but they come to know the life of rural place, the people who constitute it, its historical, present, and future value. By weaving rural life throughout the curriculum, not only are rural places validated, but rural *lives* are validated. It is through deep and continual connections and understanding of rural place, objectively and subjectively, that students develop topophilia. Topophilia is derived from the Greek root *topos*, meaning place, and *philia*, meaning love (Oxford English Dictionary, 2025).

Topophilia is important in at least five ways. First, students who develop a love for rural place will experience their learning in rural schools in positive ways. This may nurture lifelong learning, while also developing an attitude about rural as a choice, rather than a default, in their future lives. In thinking about Corbett’s (2020) mobility imperative, if students develop a love for rural places, they may not

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internalize the assumption that remaining in one's rural community constitutes failure. Second, while NHCS does not aim to develop future farmers, for those students who are passionate about farming or envision their future in professions or vocations in the agri-sector, topophilia may lead to confidence that their aspirations as valuable and worthy of respect, rather than “weird” or a last resort for those who do not thrive on traditional academic pathways. In their mandate letter to the Minister of Advanced Education (Government of Alberta, 2025), Premier Smith, outlined a need to “champion the skilled trades and professions to ensure, as early as junior high, that this education track has parity of esteem as a desirable education pathway that will lead to highly rewarding careers” (p. 2). Because skilled trades and professions are centrally important to rural communities, validating rural places also validates these pathways. Third, topophilia connects one emotionally to place so that they can be advocates for it. Even if students' lives take them elsewhere, developing a love for rural place through their schooling experiences may influence how they interpret and participate in issues, policies, and events that impact rural lives. One has to have a heart connection to something to be moved to act on its behalf. If students develop a love for rural, they may be more inclined to participate in social, political, or economic decisions that impact rural lives. Along this vein, love for rural can advance the goals of Truth and Reconciliation. Learning that validates rural and leads to love of rural places reinforces interconnection and interdependence. Finally, from an urbanormative (Fulkerson & Thomas, 2019) perspective, developing a love for rural places through knowledge and emotional connection increases the likelihood that young people will challenge “rural demonization”, and will be positioned to elevate rural from the “bottom of the cultural hierarchy” (p. 4).

In participating in this study at NHCS, the school is contributing to a much-needed new perspective on rural education. Educational scholarship is woefully imbalanced towards reporting on urban innovation and issues in contexts other than Canada. NHCS' unique programming is an important addition to the corpus of scholarship on educational innovation in general, but rural schooling effectiveness, specifically.

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Limitations of Findings

A limitation of the findings is that, except for the two Grade 7 alumni, all study participants were those who attended the NHCS community at the time the study was conducted. Those who left may have provided valuable insights. Additionally, when interviewing children, there is the potential for the power dynamic to influence how students respond. Further, NHCS is part of the choice architecture of Alberta's education system; therefore, the sentiments in this report likely reflect the fact that families self-selected into NHCS, and were happy with their choice. Since the student population at NHCS was relatively homogeneous regarding ethnicity, and data were collected within a specific time frame and context, these findings might not have transferability to other rural or urban contexts.

Potential Scholarly and/or Education System Benefits

This section describes potential benefits for the participants, school, K-12 system, community, and knowledge base. Potential benefits of our collaborative approach and research design are also described.

Participants

By participating in this study, rural students, teachers, parents, and community members have been affirmed that their experiences and perspectives matter in shaping knowledge about schooling. It may reinforce their sense of community with the school knowing that an outside researcher was interested in learning from them.

Parents may feel affirmed regarding their choice to send their children to NHCS, or they may have realized the need for a different future choice. Teachers and staff who participated in the study have been given professional recognition. They may have used the opportunity to reflect on their practice and /or their role in the development of the school. Teacher focus groups in particular may have led to strengthened collaboration and shared professional identity.

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Community members—both local to NHCS and from the Alberta agriculture community—may benefit from learning more about the school, or learning about it for the first time. They may develop a stronger sense of connection with the school specifically, or public education in general by having the opportunity to talk about the potential value-added nature of agriculture for young people. For some in the agriculture and local community, NHCS symbolizes hope for a future in which people know where their food comes from and respect those who produce it. NHCS may instill confidence in a future with strong, capable leadership.

For the students especially, including the student co-researchers, participating in the study may contribute to their sense of efficacy, agency, and pride in their ability to be part of a research study. Students may learn that their voice matters, and that they have agency to shape their learning. Child-led research scholar, Skelton (2008) reported that it was being asked by their teacher when they were ten years old to participate in a research interview on children's use of bad words that led directly to their becoming an academic. It may be the case that through experiencing research, a seed may have been planted in a student interviewee or interviewer regarding their future selves. Perhaps one day an NHCS graduate will read this as researchers themselves.

The School

New Humble Community School will have a formal record of their initiative as a result of participating in this study. Given that they are a charter school who undergoes evaluation on a regular basis, the findings will support future evaluation cycles. Further, since NHCS is planning its final phase to become a K-12 school, the findings will help them in decision making about future programming. Finally, since NHCS relies on fundraising and donations to develop and operate the farm, the findings can be shared with current and future donors, demonstrating the value of their contributions and enhancing the partnerships.

The K-12 system

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Educators and stakeholders may benefit from knowing how place-based education can be transformative for a school as a whole, and for students specifically. Unequivocally, place-based education that brings the students' world into the school can bring learning to life for students, but perhaps more importantly, it helps them see the value of their schooling in a new way. Learning that is purposeful, that feels necessary to accomplish a larger goal helps students see value in schooling. When the whole school is involved in a vision, rather than individual classrooms working on isolated projects, the benefit may be exponential. This study may prompt stakeholders to reexamine the value of small schools or explore other examples of small schools who have developed collective vision with community.

Further, this study showed the benefits to children when they engage in high-stakes responsibilities like those agriculture demands. This suggests that, rather than limit children's responsibilities, educators can foster a broad range of life skills through children's safe exposure to discomfort and challenge, and they can expect students to own their actions. An education system that assumes children can learn to handle stress, to regulate impulses, and be accountable, and that focuses on providing students with tangible, real-life opportunities to do so may make children happier than when they are protected from such realities. Conventional curricular approaches (e.g. character development programs) may be complemented with enduring, place-based opportunities for students to practice important life skills.

The evidence that experiential learning through agriculture brings sustained joy challenges educational stakeholders to prioritize emotional engagement alongside academic achievement. Joy comes from learning that invites wonder, curiosity, and all the bodily senses, and from being involved in something that creates a sense of pride and accomplishment. Curriculum can be facilitated in many ways to engage these dimensions, but to have students experience joy in their learning in a sustained way may require more attention to the environment. Agriculture lends itself to more than place-based pedagogies and learning approaches (e.g. land-based education, emergent learning, risky play), and its

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inter-disciplinary and range (e.g. urban agriculture) suggests that it may have potential for bringing joy to other school contexts.

Agriculture's role in developing students' capacity for citizenship and stewardship provides a potential framework for how Alberta schools can meet the broader outcomes of learning such as character development and community and civic engagement as outlined in the Ministerial Order on Student Learning (Government of Alberta, 2024). NHCS is a school that has minor and few, if any, experiences with incivility in the classroom, violence, aggression or chronic absenteeism, issues that seem to be plaguing not only schools in Alberta, but Canada-wide. The system may benefit from these findings by gaining insight into how citizenship and stewardship are effectively nurtured through exposure to and interaction with the more-than-human world. Citizenship and stewardship may emerge more clearly for students outdoors, rather than in a conventional classroom. Lived, relational practice with the more-than-human world may be beneficial for all students, not only rural ones. Furthermore, it may be the case that rural schools are ideally positioned to achieve the goals of Truth and Reconciliation because of their proximity to nature.

Further, the findings from NHCS are key lessons regarding the potential for rural communities to be leaders in school innovation. By legitimizing rural contexts as sites of meaningful knowledge, agriculture reframes the role of rural schools within public education. In the last couple of years, anecdotes and media reports suggest that more rural schools are integrating school-based agriculture into curriculum, on varying scales. Urban schools, too, are exploring gardens as projects to connect students to their food sources, to help them develop appreciation for nature, and as a way to integrate Indigenous ways of knowing into curriculum. The system may benefit from opportunities to network with rural schools who have successfully integrated agriculture. The disciplinary range that agriculture affords might suggest that it can be accessible to all students. Rather than as an extracurricular or unique innovation, perhaps agriculture has a role to play in enhancing the learning experience for all students. The voices in

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this study reflect the value of challenging deficit thinking about rural schools and communities, which can benefit all of society.

Finally, teacher education programs may benefit by acknowledging the importance of both preparing pre-service teachers for teaching in rural schools, and supporting them to be experts in place-based pedagogies.

The Community

This study may afford potential benefits to the local and wider community. This study makes visible the resilience of rural communities, showcases rural communities as forward-thinking, and highlights rural schools as places where students not only achieve, but exceed expectations. This study is cause for the NHCS to be recognized, and to feel a sense of pride and accomplishment. If any of the founding members were in doubt about taking a charter school in the direction of agriculture, this study may be validating.

While rural communities may feel validated by the positive picture of rural education that the findings at NHCS paint, urban communities may also benefit from this counter-narrative. This may dispel myths and stereotypes of rural people and places as backwards and inferior. Deeper understanding of rural communities may forge stronger networks and relationships, and support mutually beneficial initiatives. Further, elevating the role of agriculture and the expertise that emerges from rural contexts (e.g. food producers, local leaders, tradespeople) may help to achieve Premier Smith's mandate to bring trades and professional skills to "parity of esteem" (Government of Alberta, 2023, p. 4).

More broadly, the current discourse on equity, diversity, and inclusion (EDI) follows narrow channels, not only in the education system, but in society as a whole. Rural is yet to be recognized in any serious way as a marginalized group in EDI discussions or policy. Despite the fact that urban communities rely on rural for basic needs, rural is often forgotten (Fulkerson & Thomas, 2019). These findings may bring rural schools into the light.

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Finally, there is an anti-charter school discourse in the Province of Alberta. While ideological leanings and misinformed assumptions may hold sway, there is perhaps a chance that the privileging of young children's voices in this study may advance understanding about the value of choice in education. The study may benefit those who are unconvinced of the value of charter schools' innovations.

The Knowledge Base

Research on agriculture-based learning reports on episodic, subject-specific, and isolated projects. As an intrinsic case study, our research provides insights into the benefits of an agriculture immersion program at the elementary school level. Our study confirms the importance of hands-on learning as a way to make abstract curriculum accessible and meaningful for students. By documenting the value of immersing elementary students in a working farm, our study complements existing research that has focused primarily on the value of agriculture for older students in project-based experiences.

Our study extends existing findings by demonstrating how agriculture makes learning not only relatable, but purposeful and imperative. Through engaging elementary students in high-stakes, adult-like responsibilities on the farm, they gain an understanding of the importance of accurate and responsible application of their knowledge. Caring for animals gives students' learning direction and purpose, which shapes the relationship students have with school in a way that traditional academic approaches may not. Challenging tasks are meaningful for students, and may serve as a critical bridge between students' perceptions of schooling as somewhat clinical, and the joy they get from being engaged in something that leads to concrete accomplishments. Further, having jobs makes students feel they are making an active contribution, and in some cases, entrusting a student with an important responsibility can contribute to positive behaviour. It is the link between agriculture and the sense of responsibility it gives students that has not been highlighted in the literature. From an educational perspective, the findings demonstrate that experiential, place-based agriculture learning confined to time-bound projects or simulations has value,

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but that embedding agriculture as a whole-school enterprise creates continuity between academic curriculum and students' personal and communal lives, helping students appreciate schooling through purposeful work rather than text-centric exercises or one-time projects.

Our study also provides empirical evidence that the more-than-human world is an important co-teacher, and an important part of students' developmental context. While the research emphasizes the academic merits of school-based agriculture, the deeper connection that students can make with the more-than-human world, and how these connections contribute to citizenship and stewardship have not had much (or enough) presence in educational research. Animals provide opportunities for nurturing that is free from gendered assumptions, and because animals have what students perceive as a non-judgmental presence, it makes animals valuable conduits for reluctant readers and speakers, for example, and those seeking out calming spaces. Further, animals are an access point for learning about life events, including death, such that students develop a realistic understanding of natural life processes and ways to cope with difficult realities like death. Ultimately, these interactions underscore the potential benefit of reimagining teaching and learning that more fully engages the more-than-human world.

The importance of cross-grade and intergenerational learning offers an additional value of agriculture, which is not highlighted in existing research. Research primarily reports on agricultural and experiential learning within grades, but a school farm reflects the reality that agriculture is a complex enterprise that demands the skills and expertise of many. Working together on a regular basis creates cohesion among younger and older students, as well as between students and adults. Students develop leadership and mentorship skills with each other, but when they also learn from a variety of adults, they develop confidence in speaking and listening. The potential impact on school climate and students' sense of efficacy when students connect with others beyond their grades in trying to achieve a goal (e.g. run a farm) is worth considering for how it may prepare students for the workplace. The intergenerational organization of the chores crew, for example, reflects age-diversity in today's workplace; therefore, students will have experiences navigating the expectations of others, and reconciling different

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perspectives. When learning contexts are realistic, and potential difficulties are not pre-empted, students learn to understand social situations and develop skills and attitudes that may transfer more seamlessly from school to real-life situations.

At a time when education systems are responding to concerns about incivility, aggression and chronic absenteeism, this study prompts educators to interrogate how the environment itself does or does not contribute to students achieving both curricular and social outcomes of schooling. Further, it serves as an example of what is possible when teachers elevate their expectations for children. The study enhances understanding of how an agriculture focus can shape not only students' abilities to achieve outcomes, but the relationship students have with each other and school. While agriculture-based and other forms of experiential learning have shown their value in increasing students' engagement in learning, engagement reflects students' attention and participation in the moment. If sustained over time, joy may go deeper by reorienting students' outlook on schooling as an obligation to learning as an organic experience. For those who see themselves as not good at "doing" school, this can change the trajectory of their educational experiences.

As noted above, agriculture-based learning may have the potential to disrupt urbanormative assumptions about rural schools and communities as inferior. This study makes a contribution to place-based education by theoretically extending Granit-Dgani's (2021, as cited in Yemeni et al., 2023) four-dimensional framework. Learning that validates place raises the importance of place-based learning as a way not only to help students connect to a place, but to understand the way places are conceptualized. For rural communities where agriculture plays a central role, the opportunity for students to bring their personal and peripheral worlds into the classroom is a seamless way to shape their perceptions of rural areas as places of possibility rather than paucity. This connection between agriculture and school can dramatically shift the way some students interpret the value of their schooling, and the value of their lives. Further, by validating rural places as sites of learning, knowledge and skills specific to rural cultures and professions are epistemologically legitimated. Importantly, this study raises awareness of an egregious

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oversight in the current social justice agenda focusing on equity, diversity, and inclusion. The persistent assumptions that rural schools and communities are places of deficit have been repeatedly acknowledged in research, but rarely countered with empirical evidence, as Fulkerson and Thomas (2019) emphasized:

Why...have rural people not been the subject of intense social scientific investigation? [Researchers]...are dedicated to studying and redressing social inequality and marginalization as evidenced by countless studies in the areas of race, ethnicity, nationality, gender, and sexuality, not to mention burgeoning literatures on ability, weight, and other matters of the body. Could it be that the very scholars concerned with such matters of social justice are themselves urbanormative?

Considering the above, our study was an overdue corrective, and a response to Coates' call to highlight what is great about rural education. It may inspire future researchers to cleave taken-for-granted assumptions that reify negative constructions of rural. This may have educational benefits in the areas of teacher retention and recruitment, and rural school closure.

Finally, the inclusion of student co-researchers was a unique element that evolved into our study. While most research on child-led research reports on benefits to students, our research resulted in a co-authored peer reviewed publication (Stelmach et al., in press) and academic co-presentation (Van Beers, et al., 2025) focusing on how the experience can be transformative for adult researchers and teachers. These knowledge mobilization efforts have the potential to advance the conversation about the value and purpose of engaging students in formal research.

Benefits of School-Community Research Collaborations

Community-based research principles (Ochaka & Janzon, 2014) provided a helpful framework for establishing and maintaining our school-university partnership. Holding a community dinner to solicit feedback from parents and community before pursuing funding was fundamental for setting a mutually agreed direction. It was also valuable for confirming with local stakeholders the university's commitment to their school. Further, conducting a pilot enabled the partners to see the research in action; this

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supported methodological refinements that could include stakeholder input. A trusting partnership made it possible to take risks, like including student co-researchers. Our experience may inform future school-university partnerships, especially those involving charter schools as they are mandated to establish partnerships with post-secondary institutions.

The partnership sparked benefits beyond the study. For example, teachers served with others as panelists representing different types of schools in Alberta's education system (e.g. public, separate, charter, First Nations, private) in EDPS 410: Ethics & Law in Teaching, a fourth-year mandatory course in the Faculty of Education's Bachelor of Education program. Further, in the spirit of reciprocity, professional learning opportunities were developed for NHCS teachers at their school, as well as at the University of Alberta South Campus where the farm is located (Appendix C). Initiatives for pre-service teachers and practicing K-12 teachers were also offered as a result of witnessing the benefits of agriculture for children. For example, I co-organized and facilitated a one-day professional learning opportunity for pre-service teachers with a master's thesis student who was focusing on school-based agriculture. The pre-service teachers learned about agricultural literacy, made a pizza in the kitchen located in the Agriculture, Life and Environmental Sciences Faculty, then visited the UofA Farm. Further, I created and taught a graduate-level course, EDU 595: Integrating Agriculture into Curriculum: Field-based Study, which included experiential, immersive learning at the UofA farm. That week was also part of a conference for K-12 teachers called Beyond Four Walls. When stakeholders work as a community, the benefits can extend beyond the research study itself.

Innovations

The involvement of the student co-researchers was an innovative way to engage more stakeholders in the research process, as reported above. At the time of writing, a further partnership has been struck: I will be working with a parent from NHCS who is a self-published children's book author, to write a children's book based on the data from this study.

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Implications for Practice

The findings of the study hold several important implications for practice in K-12 education. In addition to implications for school-based agriculture there are implications related to place-based, experiential learning in any context.

With respect to learning through agriculture, while adults may assume that elementary students are not developmentally ready for large-scale agriculture, this study suggests children of all ages can benefit from participating in an agriculture immersion program that includes both gardening and animal care. Reframing curriculum facilitation through whole-school agriculture programs, rather than peripheral or short-term projects, extends benefits beyond academics. If agriculture can turn students' learning experiences into joyful ones, for example, this may shape their outlook on schooling. Agriculture-based facilitation of curriculum has the added benefit of having relevance for everyone: everyone is impacted by the production of food, for instance. For students who tend not to thrive in conventional schools, hands-on experiential learning focused on something that impacts them daily seems promising.

A particularly impactful aspect of agriculture are animals. As the study showed, animals do not simply entertain children, they teach. Melson (2001) argued, "Children learn about themselves and their place in the world through engagement with the animal kingdom" (p. 199). Louv (2019) similarly argued the health benefits of being in nature. Yet, the world that children grow up in is increasingly denatured, and education tends to start "at the neck and [work] up" (p. 257). If dispositions of care and compassion, a sense of satisfaction and accomplishment through physical work, and emotional management are promoted through animals, it presents an argument for including them as regular co-teachers in schools. Furthermore, considering increasing concerns about behavioural complexities among children and the impact it is having on the teaching profession, perhaps it is time to consider the potential healing power of nature, at least in addition to current supports. Connections to the more-than-human world should be central, not peripheral, to students' learning.

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In arguing for the importance of place for teacher education, Miller and Wotherspoon (2019) shared:

When preservice teachers in a recent offering of a compulsory core course titled “Pedagogies of Place” (PoP) were asked to draw a special place from their own childhood, they mostly drew pictures of places with specific memories of family, friends or teammates, frequently in the outdoors—a cabin by the lake, a path in the forest or an ice hockey arena. *No one drew a school* [emphasis added]. (p. 71)

Current practices tend to treat place-based learning as enrichment activities that are occasionally offered, but weaving place-based education into the everyday life of schools could transform what some students feel is institutionalized, unmemorable instruction, into learning that matters. Importantly, place is more than a physical location. Approaches that engage sensory and aesthetic appreciation, what we termed *sensethetic* learning, play a key role. Thus, the implications promote a broad interpretation of place, in keeping with Louv (2019) who suggested that “any education system that ignores the full use of the senses, devalues natural history, reduces biology to numbers...is teaching an inaccurate version of the real world” (p. 259). NHCS provides an example of how reinventing itself through place-based philosophy can completely change its trajectory. Rural schools may have an advantage in place-based education because of its proximity to community, the lessons for all schools are in creating programs that create a seamless—or relatively seamless—connection between students’ private and public schooling lives.

The promise of agriculture- and place-based experiential learning cannot be realized without teachers feeling prepared to facilitate curriculum in these ways. Louv (2019), for example, argued, “If nature-based learning...is to grow, colleges of education must encourage it and teach future teachers how to take children and themselves outdoors” (p. 257). Throughout the study, I had many conversations with the teachers at NHCS, as well as undergraduate and graduate students about whether they felt or would feel prepared to teach in a school that facilitates curriculum through agriculture using experiential learning. The answers were a resounding “no.” In a jurisdictional scan, few Canadian universities appear

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to include rural school teaching as a mandatory element of teacher preparation. In Western Canada, University of British Columbia's Rural and Remote Teacher Education Program (n.d.) and in Calgary, the Werklund School of Education Community-Based Bachelor of Education (2025) are exceptions. Their programs, however, cater to those who hail from rural communities and wish to pursue higher education without having to leave them. While the Augustana Campus education program at the University of Alberta might be assumed to prepare rural teachers, the program itself does not prioritize this. Furthermore, currently experiential learning is primarily achieved through teaching practicum, but this does not equate to learning how to teach *through* experiential approaches. Our study suggests that teacher education programs have a role to play in promoting rural education and place-based education.

Recommendations for Future Research

NHCS has provided important insights into how schooling can look different and how place-based innovations based on agriculture can create positive outcomes for students. To what extent do the impacts last as children progress through high school? Longitudinal studies in education are rare, but exploring how an agriculture immersion program shapes students' future school and learning experiences beyond elementary as well as beyond junior/senior high is worthy of exploration. The perception by adults is that NHCS students are getting set up for success in life. In what ways? How can we know?

Further, NHCS served as an intrinsic case study, but as agriculture gains prominence in rural communities hoping to revitalize their schools (e.g. Altario School) or reopen as charter schools (Strathmore Rural Route Academy), a new field of research opportunity is emerging. What are the factors and conditions that support rural school innovation that employs place-based education? What accounts for charter school success following closure by the local school authority?

While this study privileged students' voices and experiences, research into rural teachers' experiences teaching in schools with place-based pedagogies including, but not exclusive to, agriculture may provide insights into its potential impact on teacher satisfaction, and recruitment and attention

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challenges. What is it like to teach in a school employing agriculture- or place-based pedagogies? Is it joyful, like the students' experiences, or does it create unique stressors? Would an agriculture program or other place-based foci inspire teachers to seek out or stay in rural schools?

Conclusion

Situated alongside a secondary highway surrounded by fields and farmsteads, NHCS is an unassuming building appended with portables showing its growth. Except for the barnyard, the school is not state-of-the art. Yet, according to staff, its success conjures outsiders to say, "Oh, you're part of THAT school!" or "I wish I could send my kids there." NHCS served as an intrinsic case study to explore how learning through an agricultural literacy lens enhances curricular learning and life skills development. A secondary question explored how learning through agriculture shapes their relationship with school. The value-added nature of the agriculture program is that it has the ability to (a) demonstrate learning is not only purposeful but imperative; (b) nurture mature development of knowledge, skills, and attitudes through high-stakes responsibilities; (c) demonstrate learning can be joyful, not just in isolated moments, but as a sustained experience; (d) nurture citizenship and stewardship through human-nature bonds; and (d) validate rural places. NHCS disrupts a common assumption that scale and grandeur make innovation possible. A teacher explained, "we aren't just the school, we aren't just doing it by ourselves...we want everyone to be a part of our story and our journey, and we can't do it ourselves." By rooting their innovation in rural place, NHCS created a vision, not just a school, to which everyone could invest. Future research would be helpful for exploring the extent to which these impacts last for students beyond elementary school, including into their future. Given that NHCS was an intrinsic case, exploring the factors and conditions that lead to positive impacts for students in rural schools where agriculture and other place-based pedagogies are used could continue to document rural school innovation. Finally, this study raises the questions about teachers' preparedness for facilitating curriculum through agriculture and other place-based pedagogies, as well as whether and/or how it shapes their professional experiences. In rural contexts where teacher recruitment is more challenging and turnover tends to be greater, exploration

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of these questions may provide insight into the potential for place-based pedagogy to address these persistent challenges, especially in remote locations where schools are more disproportionately affected.

Importantly, it turns out that school is *not* a chore when agriculture is involved.

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Appendix A: Final Budget

Budget Area/Items Itemized	Itemized Costs	Allocation of Funds			Actual Expenditure to Date
		RPP Funds	In-Kind	Matching	
Data Collection					
Mobile Interview Kit (laminating sheets for interview cards, farm books for prompts, animal stickers)	\$150	\$150			\$135.15
GoPro HERO 11 kit (Amazon) + batteries, charger	\$820	\$820			\$1084.64
SD Cards (Amazon)	\$47	\$47			\$110.90
SabineTek SmartMike (Amazon)	\$390	\$390			\$409.50
Gift of Thanks for Student Research Participants	\$250	\$250			\$0
External Hard Drive (LaCie 1 TB Rugged SSD Pro External Drive with Thunderbolt 3)	\$539.95	\$539.95			\$0
Office supplies (notebooks for student co-researchers [\$53.23], USB drive [\$14.69]) (	\$250.99	\$250.99			\$67.92
Printing/copying (paper)			\$400		\$80.19
NVivo Qualitative Software			\$586		\$0
Express Scribe Transcription Software & Equipment			\$300		\$0
Smartphone (for recording interviews) (\$64/month)			\$1024		\$1024
Laptop			\$2000		\$2000
Mileage for Principal Investigator (n=25) & Research Assistants (n=13) @ .50/km	\$1978	\$1978			\$2109.00
Personnel					
Research assistant 2023-2024 (6 hrs/week @ 11 months X \$1211.16 (UofA Grad Assistant Salary): E. Nelson (July 16-Dec 16, 2024 @ \$1327.29 including benefits)	\$13,332.76	\$13,332.76			\$5309.18
Research grad assistant 2024-2025 academic year	\$20,517.00	\$20,517.00			\$22,709.46

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(23 hrs/week X 7 months
X \$2931, includes 10%
salary + merit increase)

Undergrad research
assistants were hired
instead for the two years
(2023-2025)

-A. Ritcey May-Dec,
2023 for 8 hrs/week
@\$25/hr

-B. Green Sept 8-Feb 6,
2023 for 6 hrs/week @
\$25/hr

-L. Peters May 2024-May
2025 various contracts @
\$27-\$30/hr for 5-25
hrs/week depending on
her class schedule)

Substitute Teachers (\$212/day X 7 days)	\$1484	\$1484	\$1484
Professional Learning Day (Fearless in the Forest)	\$600	\$600	\$600
Video production for KMb (21 hrs @ 100/hr; 8 hrs consulting, administration, studio rental, equipment and training by Technologies in Education, UofA [student researchers training])	\$2900	\$2900	\$500
Website Development by Technologies in Education: consultation (3 hrs @ \$65/hr); website creation 5 hrs @ \$85/hr; updates 10 hrs @ \$85/hr); wix.com \$264.60 [in kind]	\$1470	264.40	\$607.50
Principal Investigator Salary		\$162,084	
Co-investigator Salary		\$42,336	
Principal Salary		\$12,168	
Superintendent Salary		\$5070	
Teacher Salaries		\$4200	
Meetings			
Professional Learning Day lunch; Research Team development (includes student co-researchers)	\$280	\$280	\$82.72

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Knowledge Mobilization

Canadian Society for the Study of Education (air fare, ground travel, per diem, registration for teacher & RA = \$2705.71; registration for PI =\$45) and C2U Expo (registration for PI, RA, teacher =\$270.29)	\$4360			\$3021.00
Website space/time to post research project information/findings		\$680		\$264.60
AgforLife Professional Video (cancelled due to lack of resources)		\$10,000		\$0
End-of-Project Community Celebration (to be scheduled)	\$2625			\$0
Indirect Costs of Research (up to 10%)	\$5000			\$4999.55
TOTAL	\$56,994.70	\$43,539.70	241,112.40	\$46,599.31

Budget Justifications: I initially budgeted an amount of \$13,332.76 at the doctoral research assistant rate, but due to lack of availability and the clear benefit of hiring undergraduate students, in the end mostly undergraduate students were hired. I erroneously assumed that because I had underspent on the doctoral research assistants by \$8023.58 in year 1, that going over by \$2192.46 for 2024-25 would be permissible. Further, following a January 12, 2026 meeting and consequent email approval on January 21, 2026, I received permission to adjust the end-of-project community celebration to \$2625. The dinner is scheduled for February 26, 2026.

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Appendix B: Research Project Timeline

Time Frame	Key Activities & Milestones
NOTE: Meetings with principal, superintendent, co-investigator, teachers, and board were ongoing as necessary throughout the project for decisions and/or updates.	
May—June 2023	Submitted Draft Research Plan (May 3, 2023); Introduction of study to teachers and staff, discussion of research steps; research assistants hired (2 undergrads); data collection commenced with observations of learning; attended RPP Cohort 6 meeting (June 23, 2023)
July 2023	Submitted Quarterly Report (July 10, 2023)
August 2023	Preparation and submission of ethics
September 2023	Ethics approval obtained Submitted Quarterly Report (September 22, 2023)
October 2023	Decision made to develop student co-researchers team Data collection (interviews) commenced, observations continued PD facilitated by Fearless in the Forest (October 9, 2023) Obtained ethics approval to include Grade 7 alumni as participants (October 26, 2023)
November 2023	Data collection continued (interviews and observations) Presented at Alberta Research Network Fall 2023 Symposium
December 2023	Data collection continued (interviews and observations) Submitted Quarterly Report (December 27, 2023) Received approval for ethics amendment to include student co-researchers
January 2024	Obtained ethics approval to amend study to include student co-researchers in data collection; student co-researchers team meetings and training commenced

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	Data collection continued (interviews and observations)
	Submitted Quarterly Report
	Hired/trained research assistant
February 2024	Data collection continued (interviews and observations)
	Student co-researchers training continued
	Submitted Interim Report (February 8, 2024)
March 2024	Mr. Shane Klein, Media Team Lead for Technologies in Education, Faculty of Education facilitated PD for student co-researchers on how to use GoPro, camera shots and angles, digital storyboarding (March 8, 2024)
	Bonnie facilitated PD for teachers (March 11, 2024)
	Data collection continued (interviews and observations); student co-researcher began co-conducting interviews
	Submitted Quarterly Report (March 3, 2024)
	Poster presentation of research at Faculty of Education Research Day (Stelmach, March 21, 2024)
April 2024	Data collection continued with student co-researchers (interviews and observations)
	Obtained ethics approval to amend study to include web-based parent survey (April 22, 2024)
May 2024	Data collection continued with student co-researchers (interviews and observations)
	Parent web-based survey administered
	Submitted conference proposal to Association for Experiential Education
June 2024	Data collection continued (interviews and observations)

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	Wrap-up meeting with student co-researchers, awarded certificates of participation
	Submitted Quarterly Report (June 5, 2024)
July 2024	Drafted manuscript for journal: <i>The Qualitative Report</i>
August 2024	Ethics renewal obtained
September 2024	Re-introduced study at staff meeting due to new teacher hirings
	Trained research assistant in qualitative data analysis
October 2024	Data collection/analysis continued (interviews and observations)
	Poster presentation of research at NHCS Open House (Stelmach & Peters, October 4, 2024)
	Submitted conference proposals to Canadian Society for the Study of Education Conference
November 2024	Data collection/analysis continued (observations)
	Presented research at Association for Experiential Education, Estes Park, CO (Stelmach, November 14, 2024)
	Presented research at Alberta Education Research Partnerships Program Annual Conference (Stelmach & Peters, November 21, 2024)
December 2024	Data analysis commenced
	Submitted conference proposal to C2U Expo: Community-based Research Conference
	Submitted proposal to Endless Skies Teachers Convention
January 2025	Data analysis continued
	Submitted proposal to CASS Conference
	Planning for Endless Skies Teachers Convention with C. Duiker (NHCS teacher)

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	Research presentation of parent survey results to NHCS Board (Stelmach & Peters, January 22, 2025)
February 2025	Planning with Grade 6 students, teacher and undergrad RA for the C2U Expo: Community-based Research Conference Planning for CASS Conference presentation Presented @ Endless Skies Teachers Convention (Stelmach & Duiker, February 13, 2025)
March 2025	CASS Conference research presentation with D. Nicholls (superintendent), Edmonton (March 21, 2025)
April 2025	Grad course development: <i>EDU 595: Integrating Agriculture into Curriculum: Field-based study</i> Beyond Four Walls Conference Planning
May 2025	C2U Expo: Community-based Research Conference, Edmonton, AB (4 Grade 6 students, Stelmach, Peters, & Van Beer, May 14, 2025)
June 2025	Research presentation to Canadian Educational Research Association Conference, Toronto, ON (Peters & Van Beer presented, June 3, 2024); Research presentation to Canadian Association for the Study of Educational Administration Conference [Online] (Stelmach, June 6, 2025) Manuscript accepted with minor revisions for <i>The Qualitative Report</i>
July 2025	Revisions to manuscript for <i>The Qualitative Report</i> Taught grad course, EDU 595: Integrating Agriculture into Curriculum (July 28-August 15)
August 2025	Beyond Four Walls Conference: hosted conference for K-12 teachers at UofA South Campus (UofA Farm, August 5-8) Drafting of final report

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September 2025 Submission of Final Report Draft

December 2025 Submission of Revised Final Report

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Appendix C: Knowledge Mobilization Plan

Knowledge Mobilization Activities Completed

Knowledge mobilization activities have included academic and professional conferences and publishing through the following venues:

- Alberta Research Network
- College of Alberta School Superintendents (CASS)
- Faculty of Education, University of Alberta
- Canadian Association for the Study of Educational Administration
- Canadian Educational Research Association
- Association for Experiential Education
- Community-Based Research Canada
- The Qualitative Report (peer reviewed journal)

NHCS students, teachers, and the superintendent, and a Faculty of Education undergraduate research assistant have participated in knowledge mobilization. Activities are presented in chronological order in each section.

Professional Presentations

Stelmach, B. (2023, November 23). *School is such a chore! Agriculture as a lens for enhancing learning and life skills* [Conference presentation]. Alberta Research Network Fall 2023 Symposium.

Stelmach, B., & Peters, L. (2024, November 21). *How high stakes responsibilities build character, community, and human-nature connections in a K-6 agriculture immersion school* [Conference presentation]. Annual Conference of the Alberta Education Research Partnerships Program. (Peters is a Faculty of Education undergraduate research assistant).

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Stelmach, B., & Duiker, C. (2025, February 13). *Agriculture: An awe-full and wonder-full way to teach and learn* [Conference presentation]. Endless Skies Teachers' Convention, Edmonton, AB, Canada. (Duiker is a teacher at NHCS)

Stelmach, B., & Nicholls, D. (2025, March 21). *Visionary leadership: Insights from a rural public charter school* [Conference presentation]. College of Alberta School Superintendents Annual Spring Learning Conference, Edmonton, AB, Canada. (Nicholls is the NHCS superintendent)

Academic Presentations

Stelmach, B., Van Beers, R. A., Wurban, D. (with Grade 5 & 6 Student Researchers). (2024, March 21). *Transforming qualitative methods with a grade 5 & 6 student research team*. [Poster presentation]. Faculty of Education Research Day, Edmonton, Alberta. (non-refereed) (Van Beers is a teacher at NHCS)

Stelmach, B. (2024, November 14). *The animals, the plants, and the dirt that soiled the underpants: How an agriculture immersion environment shapes K-6 students' relationship with schooling* [Poster presentation]. Annual Conference of the Association of Experiential Education, Estes Park, CO, United States of America.

Day, C., Huber, A., Kuhn, C., Olynyk, E., Stelmach, B., Peters, L., & Van Beers, R. A. (2025, May 14). *Empowering rural elementary students as co-researchers: A panel of grade 6 students reflect on research as experiential learning and personal development* [Panel presentation]. C2U Expo, Community-Based Research Canada, Edmonton, AB, Canada. (Day, Huber, Kuhn and Olynyk are Grade 6 students from NHCS)

Stelmach, B., Peters, L., & Van Beers, R. A. (2025, June 3). *Research as a reciprocal act: How rural grade 5 and 6 co-researchers transformed their adult mentors* [Conference presentation]. Annual Meeting of the Canadian Educational Research Association, Toronto, ON, Canada. (Peters, undergraduate research assistant, and Van Beers, NHCS teacher presented at the conference)

Stelmach, B. (2025, June 6). *Agriculture as a pedagogical advantage for rural school innovation and*

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effectiveness [Conference presentation]. Annual Meeting of the Canadian Association for the Study of Educational Administration, Toronto, ON, Canada.

Public Talks and Presentations

Stelmach, B., & Peters, L. (2024, October 4). *Why agriculture? Because it works!* [Poster presentation]. NHCS Open House.

Stelmach, B., & Peters, L. (2025, January 22). *School is such a chore! 2024 parent survey*. Presentation to NHCS Board members.

Academic Publication

Stelmach, B., Peters, L., & Van Beers, R. A. (in press). Research as a reciprocal act: How rural grade 5 and 6 co-researchers transformed their adult research mentors. *The Qualitative Report*.

Other Knowledge Mobilization Activities

Other knowledge mobilization activities that were a direct result of the study include:

- New graduate course developed and taught by B. Stelmach in Summer 2025: EDU 595: *Integrating Agriculture into Curriculum: Field-based Study*. This three-week elective course included one week of immersive, experiential learning at the UofA South Campus (UofA Farm), which included researchers with expertise from the University of Alberta Agriculture, Life and Environmental Sciences and Education faculties, Augustana Campus, Concordia University, MacEwan University, and the University of Alabama.
- Beyond Four Walls Conference for K-12 teachers: August 5-8, 2025. A Grade 9 NHCS student participated as a panelist for a Women Leaders in Agriculture session at the conference. This event was supported by a KIAS Cognitive Outreach Grant at the University of Alberta (\$5000), and the Faculty of Education (\$250).
- NHCS teachers developed on their own a website, NHCS Learning in Action, to share their experiential lessons: <https://sites.google.com/newhumbleschool.ca/learninginaction/home>

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- Research reports and presentations are hosted on the NHCS website:
<https://www.newhumbleschool.ca/>
- A website was developed by an undergraduate research assistant, which also hosts research presentations and video updates: <https://www.schoolbasedag.com/>

SCHOOL IS SUCH A CHORE!**Appendix D: Web-based Parent Survey**

Q1 Do you live in rural or urban Alberta?

Q2 Why did you choose to send your child(ren) to New Humble Community School?

Q3 The New Humble Community School Charter focuses on agricultural literacy, experiential learning, and land stewardship. Please rank these three foci in terms of how important you feel they are for your children's learning (1 is highest priority; 3 is lowest priority)

Q4 In your opinion, what are THREE (3) strengths of New Humble Community School?

Q5 What benefits do you believe your child(ren) will gain from attending a school that focuses on agricultural literacy, experiential learning, and land stewardship?

Q6 Do you believe your child's/children's learning through agriculture supports the development of specific knowledge and life skills they might not develop in a conventional school (i.e. no agriculture)?
Provide specific examples if you like.

Q7 In what ways, if any, do you feel New Humble Community school is important to its surrounding community (e.g. farms, businesses, Town of Calmar)?

Q8 What limitations in terms of specific knowledge and life skills do you feel students at New Humble Community School may face because of the school's focus on agricultural literacy, experiential learning, and land stewardship?

Q9 If you would like to participate in an individual interview (via Zoom or in person), please click on the link below to be directed to a sign-up page. Your anonymity will be maintained as the sign-up pages is not connected to the survey. If you do not want to be interviewed, ignore the link below and click "Done" to complete the survey. Be sure to click "DONE" before closing this survey. Thank you!

Click here to sign up: [Link to Sign-up for Individual Interview]