What We're About Out Here: The Resilience and Relevance of School Farms in Rural Tasmania

Michael Corbett
Peter Brett
Cherie-Lynn Hawkins
University of Tasmania

Citation: Corbett, M., Brett, P., & Hawkins, C. (2017). What we're about out here: The resilience and relevance of school farms in rural Tasmania. *Journal of Research in Rural Education, 32*(4), 1-12.

School farms were established in Tasmania in the 1930s following a visit of an Australian eduation official to the United States and the United Kingdom. There are still more than 30 school farm operations functioning in some capacity throughout the state, unlike in the rest of Australia where similar small school farms are not common. In this article we analyze interviews undertaken in 2016 with 22 school farm educators about the state of Tasmania's school farms, what they do, how they are seen in their communities, what challenges they face, and how they integrate the agricultural program with the demands of contemporary curriculum. While these school farms face considerable challenges, we conclude that they have a unique place in the state's education system, a powerful symbolic presence in rural communities, and significant potential to provide relevant, valuable, and potentially transformative curriculum and pedagogy in support of educational and rural development policy agendas.

While school farms have a long history in Australia (Brady, 2013; Keppel, 1962), the Area School movement that began in Tasmania in the interwar years marked a confluence of progressive educational movements, interest in modernizing agriculture, and a political drive to retain rural populations on the land. Area Schools with adjacent farms were promoted as a "unique Tasmanian development in education" (Hughes & Parker, 1942, Preface). The innovation followed a six-month visit to rural schools in England and the United States in 1935 by the Tasmanian Director of Education, George Vickery Brooks, sponsored by the Carnegie Corporation. Until 1936 it was not possible for children living in rural areas of Tasmania to receive any secondary education outside Hobart and the four largest provincial towns.

Brooks claimed that Area Schools were established to meet an "urgent demand for orientating school instruction so that—a) Such might better fit the district needs [and]; b) The curriculum in the schools might be vitalised for all students" (Hughes & Parker, 1942, Preface). Mortimer (1993) argued that the Tasmanian area schools "arose in answer to important questions of social, economic, and political significance [like] how can the gulf between the cultures of town and country be bridged [and] how can the drift of rural population to the cities be halted?" (pp. 199, 238). Tasmanian area schools were lauded for their capacity to give schools in rural areas a distinctive sense of identity, ethos, and purpose.

The vocational curriculum, linked to farming interests and methods, was initially launched in 1936 at Hagley and Sheffield in the north of the state, generating excitement in progressive educational circles in mainland Australia and beyond (Brett, 2013; Halsey, 2011; Mortimer, 1993). Rural districts across Tasmania began to vie with each other in advancing their claims for Area Schools. The process claimed to decentralize powers to individual districts and communities through school advisory councils, which could vary curricula along lines suited to their area's needs. Other Tasmanian schools throughout the state quickly adopted Area School status. The expansion of Area Schools coincided with the closure of almost a third of small schools. By 1940, 13 Area Schools were serviced by 31 buses that picked up children from outlying catchment areas.

In outlining the general purpose of the Area School, practical, progressive, and experiential forms of schooling were extolled in tandem with administrative efficiency

This research was supported by a University of Tasmania Community Engagement Grant.

All correspondence should be directed to Michael Corbett, Professor, Rural and Regional Education, School of Education, Locked Bag 1307, Launceston TAS 7250 (michael.corbett@utas.edu.au).

The *Journal of Research in Rural Education* is published by the Center on Rural Education and Communities, College of Education, The Pennsylvania State University, University Park, PA 16802. ISSN 1551-0670

(Corbett, 2001; Cubberley, 1922). The principal of Hagley School argued:

> Our children must be emancipated from the four walls of the classroom and be brought into contact with life while still at school. By providing an extremely wide range of activities, we endeavour to tap the creative interest of all types of youth. By placing emphasis upon achievement rather than competition, we try to establish some self-confidence and personal pride in every child. The vital stimulus for achievement is interest (Maslin, 1948, pp. 3-4).

A 1942 celebratory government text devoted to Area Schools was illustrated with photographs of children harvesting flax on area school plots, wheat and Yandilla King growing on a school farm, forge work in a blacksmith shop, and the laying of water pipes. Concrete fencing, a compost pit, and a pigpen constructed by "lads" were also proudly depicted (Hughes & Parker, 1942).

Despite thoroughgoing educational change in the ensuing decades, many of these 1930s and 1940s school farms have remained more or less operational with little government financial or curricular support. Since the 1942 celebratory text, there is no available literature detailing school farm activity in the state in the second half of the 20th century. There was, however, a public outcry in the Tasmanian media when the possibility of school farm closures was rumored following a 2013 government audit (Barnett, 2014; Dadson, 2014; Davy, 2016; Hanson, 2013; Paine, 2013; Rockcliff, 2014).

In other parts of Australia, agricultural education is carried out in large secondary school facilities, some of which are highly specialized and very modern and provide high-quality vocational training to their students. Indeed, Australia's top-performing secondary school in national testing is an agricultural high school. Tasmania's school farm facilities are not modern, and at present no pre-tertiary agricultural education or agricultural sciences are offered in the state's secondary schools although such such courses are in the planning stages at this writing. Agricultural education/sciences have yet to establish academic credibility and a secure foothold in the Tasmanian schools. Yet Tasmania's school farms are iconic rural symbols and vibrant, locally valued actor networks (Latour, 2007) that draw upon both rural and educational history and strong contemporary connections with an agricultural industry in transition.

Debates concerning Tasmania's school farms can pit rural community members who see their school farms as critical links to local culture and practices against educational governance authorities whose national and state-wide responsibilities extend beyond the needs and desires of particular communities. The debates also raise questions concerning the place of farms and farming in schools today. Are they necessary to a modern educational system? Can they offer educational programming compatible with modern curriculum structures and expectations? Are they too dangerous for children and youth in risk-adverse times?

Although Tasmania's school farms were developed in different social, economic, technological, labor market, and educational contexts, we have found that they retain relevance and illustrate the resilience of material practices in rural communities. Apart from this local significance, agriculture has been identified as Tasmania's "biggest growing industry" (Hanson, 2013, p. 7). The Tasmanian government has committed to an ambitious plan to increase agricultural production tenfold by 2050 (Grant, 2015). These agricultural productivity targets have the potential to put school farms at the heart of future ambitions. Skill shortages in agriculture also highlight the need for quality education and training and an appropriate infrastructure through which to provide it (Blucher, 2014; Bryan, 2014; Davy, 2016; Education & Training Committee, 2012; Hanson, 2013). This gap is particularly evident in Tasmania, which falls behind the other states in advancing agricultural education and careers (Neale, 2013).

The existing literature on Tasmanian school farms is limited, and subsequently the activity that occurs on these school farms is not well understood (Sayre & Clark, 2011). In response, this article draws on interviews with farm school educators in the state, mostly conducted on school farm sites.

The School Farms: Typology and Composite Thematic Stories

Invitations to participate in this study were forwarded via email to all known existing primary and secondary farm schools in the state (n=31) in February 2016. Twenty-two schools responded to the invitation and were identified as operational at some level. The participant invitations explained that the purpose of the study was to map the landscape of Tasmania's school farms and ask three main questions:

1. Where are Tasmania's currently existing school farms and what kind of programming do they offer?
2. What are the key successes and challenges faced by Tasmanian farm schools today?
3. How do Tasmania's school farms integrate contemporary curriculum to organize programming?

The invitations also stated our interest in exploring the types of activity and learning on school farms in Tasmania. We collected data through one-on-one, semi-structured in-

terviews with school farm educators during site visits. This process involved a digitally recorded walking interview around the farm site in 19 of the 22 cases while the others were conducted in school. The participants were either principals or teachers responsible for the agricultural program.

We used a modified grounded theory approach, and the stories were coded thematically to understand insider perspectives (Charmaz, 2006; Corbin & Strauss, 2014; Glaser & Strauss, 1967). This more reductive way of approaching the data, which identified shared concepts across interviews, was then extended to include situational mapping (Clarke, 2003). The mapping was applied to enable greater contextual specificity and nuance and to highlight the unique situation analysis from which we constructued composite stories on each situated "school farm type."

Using this methodology, we were able to investigate what school farms had in common while at the same time exploring what made each of them distinct. Our themes were typically linked in with many other factors such as practical and academic skills and knowledge development, as well as exposure to education and career possibilities in agriculture. The composite stories, on the other hand, elucidate the complexities surrounding each school farm type, including what they "look like," what they primarily provide students, how they are viewed in their communities, and the challenges they face. We developed five school farm types based on size and activity:

1. **Agricultural Education Centers (AEC)** are multi-activity school farm operations containing some or all of the following: animal, horticulture, aquaculture, forestry facilities (n=6).
2. **Specialized Small Farm Operations (SSF)** are typically smaller, focusing on a limited number of more specialized activities (n=6).
3. **School Gardens (SG)** are more or less developed horticultural operations that provide a limited, but often highly engaging, experience for students (n=5).
4. **Agricultural Display/Experience Facilities (ADEF)** are farm operations that provide agricultural experiences to students, most of whom travel from other schools for short-term programming (n=1).
5. **School-Based Land Holdings (SBLH)** may provide income for the school but are not used for educational purposes at present (n=4).

In the text that follows, we use deidentified quotes to support our findings. Quotations are followed by a code to provide some context. The codes reflect the gender of the participant, the school farm type, and an identification number. For example, F-AEC-3 means female educator at the Agricultural Education Center, labeled as number 3 in that category.

Each of the school types represents a different form of what we call experiential "laboratories" that serve to materialize student learning in community and in culturally supportive ways. Each farm has a foundational story. These stories generally relate to the centrality of farming in the community. Most of the school farms were secondary facilities, and these secondary education providers also offered agricultural studies as an option for all students. Some of these schools also extended their offerings to include accredited courses, typically in conjunction with a technical and further education (TAFE) facility or other registered training organization (RTO) provider.

The Image Problem and Bootstrapping: The Struggle for an Agricultural Curriculum

In this section we introduce some of the shared findings as illustrated through exemplar quotes from educators. To provide a deeper contextual understanding of the activity that occurs on the farms, and to highlight the challenges faced, and the opportunities that could be leveraged, composite stories follow. Each school farm we visited was unique, reflecting the history of the farm itself, the temporal shifts in Tasmanian education, and configurations of community priorities and volunteer energies.

The overarching central theme for school farm teachers was a commitment to integrate contemporary curriculum with agricultural activities. As one teacher put it, "I looked through the curriculum and created a whole year's worth of work around agriculture" (M-SSF-2). Educators spoke about school farms engaging students who might otherwise be marginal students. Simultaneously, they were adamant that school farm programming is not remedial, aimed at hard-to-discipline children and youth, or of limited curricular worth.

> There needs to be a real change in the way the schools and community see school farms. So, the farm's not where the naughty kids go who can't be in a classroom to learn how to dig a hole or build a fence, it's a place where genuine curriculum learning can take place. That it's essentially, "we've got a business here that kids can get some real-life learning from" (F-SSF-4).

The image of school farms as holding areas for young people with behavioural problems or learning difficulties was something that all school farm teachers worked hard to shift.

> I guess I saw my job as just raising the profile of agriculture.… I didn't ever want the school farm

> to be a place where they dump kids who couldn't handle a classroom … so it was all about raising the profile…, provide kids with quality training and also to make them employable (F-AEC 3).

Teachers worked to align programming on the farm with science, mathematics, social sciences, and language curricula. It is well understood in school farm communities that there is tremendous potential to link agricultural education programming with problems of community sustainability and the need for highly-skilled, well-educated modern agricultural workers.

> This is a rural community that relies on people understanding the concepts of agriculture to be sustainable as a community. We can't have our main school not only not doing it but doing an atrocious job (M-SSF-2).

Many stakeholders were conscious of myths and misinformation about agricultural work. Rather than promoting a nostalgic view of work on the farm, most school farm teachers actively supported richer understandings of the range of careers available in modern agriculture. Students choose to undertake the program knowing it involved hands-on farm work but at the same time appreciating that they would be exposed to other possibilities.

> It's opening kids' eyes if they want to go past the basic skills you know, to look into a really successful career in agronomy or anything like that.… Kids actually opt into the agricultural science class and choose it, it's one of those things that naturally kids gravitate to.… A lot of kids come from that practical farming background, they just like it (M-SSF-5).

The above reflections illustrate that programming is curriculum-driven, offered in a real-world environment. Nevertheless, school farms have survived only as what we call "bootstrapping" operations that are self-sustaining with no reliable, ongoing funding. Three composite stories are included below to illustrate the context in which these farm-types operate, the programs and activities students typically engage with, and the learning outcomes and challenges.

An Agricultural Education Center: Jersey District Farm School

Attached to the local high school, Jersey District School Farm is an agricultural learning center in the heart of a small farming community. The community is set within the rolling hills and rich soils of a fertile river valley. Jersey has undergone significant change in recent decades as manufacturing and the timber industry have downsized. Agriculture has become more specialized, mechanized, and globalized. Still, Jersey has the feel of an agricultural community with farms dotting the landscape, well-tended fields, and irrigation equipment and farm machines clearly visible.

There is obvious pride of place here and properties are generally well cared for. People know one another and routinely wave or nod at passing vehicles whether or not they know the driver. As this teacher indicates, the school farm is thought to reflect community pride.

> I would say that there's a really positive feel about the school farm, and I think that the community would generally say, "It's a wonderful learning environment, it's a wonderful space that we're doing good things, it's well run, it's well managed." And there's an enormous sense of pride you know, the presentation of the farm and what we present to the community when we go to shows (F-AEC-1).

The school retains a relatively stable population after having lost students over the past two decades. The farm is a conspicuous presence on the school campus because of its size and because its buildings "fit in" with farm buildings common in the community. The school farm boasts 20 hectares of prime soil, ideal for planting brassica crops, and for rotating potatoes and poppies. The farm has an array of animals, including sheep, cattle, pigs, alpacas, chickens, turkeys, geese, ducks, rabbits, and goats. There is an element of specialization in animal selection to ensure they serve a particular purpose, so breeds differ depending on whether they are needed for food, fiber production, or companionship. The farm has a horticultural area with hothouses, garden beds, and an orchard that produce a variety of vegetables and fruits.

Like all Tasmanian school farms today, Jersey District School farm is a "bootstrap" operation that functions on the energy and commitment of a dedicated teacher and community volunteers.

> We've got a farm manager; he's a volunteer. So, our farm basically is run solely by volunteers which we rely on because we just don't get any extra funding to run the farm. So we rely on that volunteering community support, you know with expertise, you know machinery, and donations (F-AEC-1).

The farm is largely self-funding, and the main source of income is a large forestry plantation, which backs onto the school property. Income is also generated through the commercial dairy and from produce. The farm is also sustained by the teacher's pursuit of grants and donations

mostly from within the community, many of which are in-kind contributions of labor, goods, and other necessary services. There is little or no profit once costs are covered, but the farms remain operational.

The school farm contains a commercial dairy operation that extends to include multiple other farming experiences. It is a multi-activity educational facility that provides students with a suite of agricultural experiences. These experiences are practical and authentic, and students handle and care for animals, prepare soil, plant crops, and harvest produce, as in a real-world working environment.

Working on the school farm, students both "get their hands dirty" and come to understand that consequential high-stakes tasks have to be completed because animal welfare is at stake. The experiential curriculum develops a grounded understanding of academic content as well as a sense of ownership and responsibility. This teacher points to the academics involved, stating that students

> ... need to understand databases and how to monitor productivity and have a good understanding of basic chemistry and physiology, but they also need to be able to tell if a cow's got mastitis and actually be able to man-handle it to fix the problem, stick the needle in; you know, you can't teach kids how to inject using oranges. You can start that way but at the end of the day, they need to know how to administer a subcutaneous vaccine and there's no way other than actually shoving it in something several times till you get it right (F-AEC-3).

The facility offers optional agricultural programs to secondary school students, a farm studies program to primary school students in grades 3-6, and basic vocational qualifications to secondary school students.

One important part of community volunteerism is membership on the school's Farm Board that oversees and advises the teacher responsible for programming on the farm and the principal.

> We've got very strong community support. We have a Hampshire breeder who works very closely with [the farm manager] in the running of our Suffolk Stud and has really imparted a lot of knowledge for showing sheep and the genetics. We have a Farm Committee so, they're all farmers in the area plus other interested people form our Farm Committee to help, and advise, and oversee our farm. [The farm manager] is amazing; he can ring somebody who's not even on our Farm Committee and say, "Look, can you give us this or advise us on that," and they'll come and help if they can. I didn't mention that [a local company] also supplies us with agronomic advice free of charge. Now that helps that one of their agronomists is a parent at our school so that is sort of one of the ways parents get involved (F-AEC-2).

The Farm Board helps make decisions that are required on any farm from year to year on the basis of price projections, current holdings, the availability of workers, and the educational value of various activities. Jersey School is considering the inclusion of students on the Farm Board to provide them with experience in management and design as well as other aspects of agriculture.

A Specialized Small Farm Operation: Suffolk School Farm

Suffolk School Farm is located inland from the nearest regional center. The school population is relatively stable at around 400 students from kindergarten to grade 10, most of whom travel by bus from farms within a 20-kilometer radius of the school. The school is integral to the community. Local residents describe the school farm as a meeting place for meaningful activity, where relationships are built and where children, parents, and grandparents connect, share stories, and often to work on authentic agricultural projects.

> I guess community connections is the key part, a lot of the community have a real strong sense of keeping the farm going and that means that often members of the community who you wouldn't otherwise see, feel comfortable in that setting, to be involved whereas they wouldn't be if they had to come over here into the classroom setting or the school setting. But they're more than willing to help out if they can be involved in that way or donate things, or just offer their knowledge as well … and build a common goal for the whole community if you know what I mean. If we start talking about farms, everyone's all of a sudden on board, you know so this is what we're going to do for the school farm, you just go down the street and people say, yeah I'll get involved in that sort of thing (M-SSF-4).

A recent government proposal to close a number of small schools around the state, including Suffolk, was met with fierce resistance from the broader Hampshire Mountains community, who successfully rallied against it. In the view of many citizens, this resistance has effectively served to keep the community alive.

The school is small compared to those in regional centers as is its farm. Despite its size, the school offers agricultural studies as an option for all secondary students and a weekly garden program for primary students. The farm is primarily a sheep stud operation that breeds, raises,

and sells rams. Secondary activities include a poultry micro-enterprise and a garden program. All profit is reinvested.

Suffolk is currently exploring options to extend its breeding program through genetic improvement. However, the immediate priority is to repair buildings and fences and purchase new equipment. As it is, the farm survives largely on community donations of feed, supplies, and volunteers' time and knowledge. The agricultural studies teacher volunteers considerable time to the school, and succession planning is an issue, as is the size of the operation itself. The farm is a bootstrapping operation that is effectively run on teacher commitment and energy, community volunteer labor, income from the farms itself, and donations.

> It's sort of the chicken or the egg sort of thing, we know we're limited to the size because of money and how big we are, but that also limits the ability we're able to repair things. Ideally I'd like brand new fences for the whole thing, but you've got to do it one job at a time. Yes, staff and money are the most problems (M-SSF-4).

Secondary students start with the basics of care through to handling, drenching, tagging, weighing, shearing, and transporting the sheep into pens, paddocks and onto trailers. A number of the students also participate in sheep and wool handling competitions and play a part in planning these events. Students also do work experience on local farms or with agricultural businesses in the community. To insure safety and proper animal care, a farm manager oversees all operations, and the agricultural studies teacher is on the farm with the students at all times. Due to safety concerns, the students are sometimes "limited peripheral participants" (Wenger, 1999) who are given partial responsibility until they are deemed both competent and responsible.

The poultry operation allows students to raise chickens and sell eggs to a local store. Primary-aged students tend the garden, and each class has its own patch; the high school students do some planting and harvesting alongside younger students as well. The produce is also used in the school canteen and cooking programs. "Basically through what we grow in the garden we cater for the canteen and the kids use in cooking.… There's quite a lot of produce that comes out of here" (M-SSF-2).

The students at Suffolk are involved in the design of farm spaces and infrastructure and complete much of the work needed to deliver on these plans. They build structures, pens, or fences and prepare the garden areas and holding stalls. The students solve real-world problems and undertake activities that require cooperation, planning, and communication. Mathematics and science are often taught here, alongside the transferable skills. In addition to preparing students with curricular knowledge, the school farm prepares students with various life skills that are valued by their elders. The teacher sees this curriculum integration as a way to involve parents and community members in the school in meaningful ways.

> It's real-world project-based learning so you can get excellent curriculum learning from the farm, quite scientific.… So you can't do that without a farm, it's purposeful, it's needed, it's real world; it's not some false, you know, like a pretend maths problem. They have to work it out, they have to do it and get it right, and if they don't then it's the learning that comes with that (F-SSF-4).

A School Garden: Alexander High School

Alexander High is located in a small coastal fishing village. Many community members work on salmon and oyster farms, while others work inland on dairy farms or have positions at a local meat processing operation. There are employment opportunities in the nearby wineries that surround the village. Industry restructuring has changed things, but the community has developed an economy that blends established and emerging primary industries. There is tourism potential in the community, but the general feeling is that it has not been realised as yet. Still, there is a sense that because of low levels of educational attainment, poor senior secondary retention rates, and what is considered to be a "culture" which is unsupportive of education, the community could be more economically and socially vibrant than it is currently.

Alexander High School is a secondary education facility offering agricultural studies as an optional subject for all students. The school boasts an extensive market garden and orchard. The focus of the agricultural studies course is horticultural and growing fruit and vegetables for sustainable living. Students are encouraged to consider health and nutrition as well as how to be creative and efficient with resources. Despite the sustainable living focus, nutrition, animal welfare, and ethics are also woven into the learning as students.

> Try different foods, preparing some healthy foods, we look at that side of it, but also I really like the animal welfare, animal care, ethical treatment side of it. I have focused in the classroom a little bit with them on that, like factory farming vs. organic farming, all that sort of stuff, not to say it should be this way or that way ... letting them think for themselves about what they're buying when they go shopping.… It doesn't have to be about big industry stuff, it's also about hobby farming or being resourceful and doing your own thing, you know if you want to make a shed or a yard or a compound at home (M-SG-6).

Apart from half a dozen chicken and two turkeys, there are no other animals at Alexander, and the school struggles to secure the funding for personnel to adequately care for these animals. The agricultural studies students are also exposed to additional learning through industry excursions, work experience, and by doing online classes.

The open garden section is approximately the size of six tennis courts, housing 30 beds constructed with wooden railway sleepers or timber offcuts donated by a teacher. The beds are two meters wide by 15 meters long and contain multiple varieties of tomatoes, corn, spinach, broccoli, beans, carrots, and peas, as well as many other herbs and vegetables. In addition, there are two hothouses that are 15 meters long and five meters wide, as well as three green houses that are six meters long and four meters wide, filled with pots containing anything from seedlings to fully fledged plants. There is also an orchard with 20 fruit trees, including apples, pears, peaches, plums, nectarines, and lemons. The garden contains a section of grape vines, some olive trees, and a small enclosure for raspberries and strawberries.

The teacher facilitates the agricultural studies option and has a keen interest in healthy living through producing and eating fresh foods. Passionate about teaching the students to look after themselves, his greatest concern is the lack of support those who work with school farms.

> If this was to work, if an agricultural subject was to work well in a high school, then you would need to be a specialist teacher with … the time to actually hands-on go and do that.… I'm not an expert in this area at all, I'm just sort of picking this up but … you could go potentially a lot deeper in the science of farming and agriculture (M-SG-1).

Like many school farm teachers, he has experienced farm work but considers himself to be largely self-taught when it comes to preparing soils, planting, feeding, pruning, and harvesting. He sees the farm as an important piece of the school infrastructure, though. It is a laboratory in with students can experience curriculum in an authentic experiential setting.

Importantly, the produce from the market garden supplies the school canteen and is used in school cooking classes.

> This term is the first time we've had any produce … so we did a heap of cooking classes which was really good so we used tomatoes, a lot of the fruit from down there, we preserved zucchinis, they had some corn in there and strawberries so we did a different thing each week and tried to use up a heap of the produce, so that's that (M-SG-6).

> I think our main priority is getting that enterprise happening so that we can keep the kitchen stocked and the canteen stocked, the idea would be that eventually we would be providing a sustainable food source for the school properly, be cool to see (M-SG-3).

In this way, the farm benefits the school by subsidizing healthy options at the canteen, and by exposing the students to unprocessed food that they nurtured and watched grow. Any excess produce is then provided at no cost to students and to needy members of the community. A small "store" behind the school's market garden is set up for students and for local people. Some local citizens volunteer their time in the garden as a way of "giving back," and this is welcomed at Alexander as a way of increasing community-school engagement and cooperation.

"What We're About Out Here": Embodied Curriculum, Consequences, Caring, and Community

The school farms in this study are authentic, real-world learning environments where students are recognized and given the opportunity to manage and design the learning space under the guidance of teachers and community members. Unlike many school activities, these farms illustrate what Shelton (2005) calls "consequential learning" where real stakes are in play in the educational experience. Shelton's point is that much of what goes on in school contains few real-world consequences for students. This argument mirrors that of Dewey's pragmatist critique of education (Dewey, 1997; Dewey & Jackson, 1990). In the epoch of the development of Tasmania's school farms, Dewey argued that education ought to operate as authentically as possible and that the idea that schooling is practice for some future life is deeply problematic. Indeed, the development of school farms and farm schools in Tasmania emerged from the influence of pragmatism in education and a realization that embodied experience is both important for enhancing student engagement and for preparing a workforce. Thus, the school farm was a way to introduce science and contemporary agricultural techniques and technologies to rural youth in ways that built upon local funds of knowledge (Gonzalez, Moll, & Amanti, 2005). Today this approach is understood by school farm teachers as good, inclusive educational practice that integrates local knowledge and material cultural practices with wider scale curriculum expectations.

An important hook in the school farm "laboratory" is authenticity, which assumes real stakes. On the school farms we investigated, there are consequences if the job is not done carefully. Students have responsibilities, they have

problems to solve, and they are acutely aware that they are not playing a video game. One teacher put it this way:

> Each of the students come down here [the school farm], because I don't know so much but I'm trying to give them a work ethic when they come here…. They need to focus on this, drop everything else, this is your workplace, I'm teaching you a work ethic and when you're down here, you work. I don't care what your job is but you do it to the best of your ability … rain, hail or shine, you're down here doing what you have to do because they're [animals] dependent on you (F-SSF-1).

If the animals are not cared for they can get sick, suffer, and/or die. If the plants are not tended, they will not flourish. The school farm introduces relevance and a sense of the compulsion to care, an ethic which Noddings (2003, 2005) argues is crucial to citizenship, democracy, social cohesion, and even to global sustainability. In certain respects, the global education reform movement (dubbed GERM by Sahlberg [2011, 2015]) represents pressure in educational systems to move toward decontextualized, and thus, comparative measures of educational performance (Lingard, Martino, Rezai-Rashti, & Sellar, 2015). National, international, regional, and local league tables and other types of standardized performance comparisons can disembed curriculum from place as teachers tend to adopt decontextualized practices and "teach to the test." The challenge is to develop ways of working which draw upon the authenticity provided by educational sites like the school farm and embed this learning in contemporary curricula. Such an approach has potential for powerful, academically rigorous "productive" pedagogies (Lingard, Hayes, & Mills, 2003) that are authentically and deeply connected to local funds of intergenerational experience and knowledge.

The resilience of Tasmania's school farms reflects the importance of the connection between rural social spaces (Green, 2013; Reid et al., 2001) and school. The farms are working sites that maintain and increase authentic community connections and engagement. Locally, these school farms are regarded as hands-on learning platforms that generate pride, and, it must be said, feelings of nostalgia because they also represent historic farming practices and lifeways more than modern agriculture.

The farms also illustrate embodied experience and what Malafouris (2013) calls "material engagement" or the crucial integration of the mind and the physical world. The facilities provide students the opportunity to work with real tools and living things and to be immersed in the outdoors, counteracting what Louv (2006) calls "nature deficit disorder" or the increasing separation of modern children from natural environments of all kinds.

> It's different to school work, it's hands-on, it's practical, it's interesting, the kids will come and look at fish, they'll look at the sheep and the pigs, they'll even maybe try touching them if they're brave enough to, it's that engagement that you don't always get in a classroom (M-SG-1).

We also find in this research that school farm teachers return to the importance of both emotion and the embodied experience of the material world that Abram (1997) calls the "spell of the sensuous" founded on the direct experience of material and sensory stimulation.

> I think what we've tried to do with our school planning is always bring it back to student engagement, so what's going to make this kid as engaged as we possibly can? And we do have quite a lot of sort of needs in a particular area so that was one thing why our sensory garden came through, because we have a lot of children that respond to that sort of stimulation (F-SG-5).

Tasmania's school farms are working examples of meaningful community engagement that draw on what Gonzalez et al. (2005) call "funds of knowledge" or the working intellectual capital available beyond the school walls. Like the place-based/sensitive education tradition (Greenwood & Smith, 2007; Grunewald, 2003; Theobald, 1997), Gonzalez et al. highlight how knowledge itself is hierarchically organized in curricula in ways that the intelligence of working class, minority, second language learners, and other marginalized groups is not incorporated well into school learning (see Crawford, 2010; Rose, 2005). In the Australian context, the idea of funds of knowledge has been taken up recently by a number of scholars who focus on rural education issues (White, 2015; Zipin, Sellar, Brennan, & Gale, 2015) and argue for the inclusion of community-sensitive pedagogies that incorporate and value what ordinary citizens know. Rather than critique allegedly low aspirations of rural families, such pedagogies seek to understand and relate curriculum to the experiences and knowledge forms that all communities contain (Corbett, 2016; Zipin, 2009).

> It's all Farm Board-based so if we, or I, see something that I think we need then we have a meeting where we go in and I request things, discuss it…. I actually find it's a great experience for me being a younger person to learn from those older community members because they give me a wealth of knowledge on things I haven't even considered through all the experience that they've had (F-SSF-2).

In the school farms depicted here, teachers are well aware that a hands-on experience with farm work is insufficient in contemporary school settings. Thus, we found them working to ensure that the official curriculum was well "mapped" onto school farm activities. Teachers spoke to deeper-level curriculum linkages around personal development and employability skills. Our research also supports the capacity of school farms to provide for student engagement and awareness of sustainability and scientific curriculum and to indicate how it is possible through agriculture to lift engagement and academic achievement (Carten, 2015; Jenkins, 2014; Staight, 2016).

> The main purpose is engagement, student engagement, getting them interested in the hands-on application of science with a view that hopefully some of our students will come into science, ag-based science through college and then through even university or apprenticeships or traineeships whatever pathways they might choose, it opens up horizons and then take and see it's not a closed circle, they can take different avenues (F-SG-2).

The school farms represent what Thomson (2002) calls the unique "thisness" of particular communities, or the particular configuration of place, history, culture, and knowledge that is difficult to standardize, compare and measure

.

> I think sometimes it's hard to, you know, hard for people to get, wrap their head around that (the value of the school farm), because it doesn't fit nicely into any sort of forecasting or measuring or any stats kind of stuff, but it's that real sense of identity that's connected to a place that you live in I think (F-SG-5).

> The school without putting too a fine a point on it, is the community, really out here. I mean, I don't believe we could run the farm without strong community support. And I think the wider community, the ones not involved, you know who don't have grand-kids here, see the farm as, you know, being very important to what happens as being part of this community. You know, this is what we're about out here sort of thing, this is what we do, this is where our history is, this is what our links are so they see that as being important (M-SSF-4).

Today, agriculture is a growth industry in the state, there is a current skills shortage in the sector, and considerable concern exists around educational achievement and retention (Bryan, 2014; Blucher, 2014; Cranston et al., 2014; Davy, 2016; Education & Training Committee, 2012; Hanson, 2013). What our methodological approach allowed us to see, focusing on the common themes/issues and the nuances of particular sites, is that the farms themselves are unique community institutions which share a common foundation which is an assemblage of people, animals, and inanimate objects in the known actor networks (Latour, 2007) that farms represent.

Whether or not school farms as they are presently constituted address persistent problems of educational retention is beyond the scope of this study. At present, few school farms programs provide pathways that actually respond to the workforce needs of the industry. Whether they can or should, or how they would need to change to do so are also open questions at this stage. What they do provide is a community-valued environment that represents a farm. They also provide, as some educators indicate, crucial experiential links to the source of food and fiber which is central to sustainability and to the development of ecological sensibilities in students.

We further suggest that renewed strategic attention to agricultural education in Tasmania's rural schools built around a network of well-resourced school farms, building on established human and physical infrastructure, might both enhance student and community engagement and improve measurable educational outcomes. While this article was under review, in November of 2016, the Tasmanian state Department of Education released an agricultural education framework which will, for the first time, offer curriculum coordination across the state, including the introduction of university preparatory agricultural science offerings at high school level. How Tasmania's resilient school farms will figure in this emerging vision is a story that is yet to unfold.

Conclusion

Ultimately, this research returns us to the educational significance of embodied practice (Bourdieu, 1992; Green, 2015), experience (Dewey & Jackson, 1990), emergence (Green, 2015; Somerville, 2007), improvisation (Corbett, Vibert, & Green, 2016), place (Greenwood & Smith, 2007; Malpas, 2016) and the experience of the material (Fenwick, Edwards, & Sawchuk, 2011; Malafouris, 2013). This conception is multifaceted, but it is in practice that we make and remake the world. It is what provides substance for reflection and action to project forward possible futures. In many Tasmanian communities, the school farm continues to reflect the materiality represented in place, the embodied nature of social practice, and the educational potential of an authentic connection between rural schooling and "what we're about out here." As one rural educator put it:

References

Abram, D. (1997). *The spell of the sensuous: Perception and language in a more-than-human world.* New York, NY: Vintage.

Barnett, G. (2014). *Hagley School Farm* [Press release]. Retrieved from Premier of Tasmania Web site: http://www.premier.tas.gov.au/releases/hagley_farm_school

Blucher, A. (2014). Far north west Tasmanian agricultural college, Agritas, attempting to smash the "mud and manure" perception of dairy farm labour work. *Australian Broadcasting Corporation*. Retrieved from http://www.abc.net.au/news/2014-11-25/agritas/5917056

Bourdieu, P. (1992). *The logic of practice*. Stanford: Stanford University Press.

Brady, T. J. (2013). *The rural school experiment: Creating a Queensland yeoman*. (Unpublished doctoral dissertation). Queensland University of Technology, Brisbane, Australia. Retrieved from http://eprints.qut.edu.au/60802/

Brett, P. (2013). "An event of no small importance": the inspection of Tasmanian schools in the 1920s and 1930s. *Tasmanian Historical Research Association: Papers and Proceedings*, *60*(3), 158-174.

Bryan, E. (2014). Young Tasmanians swap town for country to join booming dairy industry. *Australian Broadcasting Corporation*. Retrieved from http://www.abc.net.au/news/2014-08-12/young-tasmanians-go-from-town-to-country-to-join-dairy-farms/5665998

Carten, S. (2015). *Farming school grounds*. Retrieved from Farm to Cafeteria Canada Web site: http://www.farmtocafeteriacanada.ca/2015/05/farming-school-grounds/

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.

Clarke, A. E. (2003). Situational analyses: Grounded theory mapping after the postmodern turn. *Symbolic Interaction*, *26*, 553-576. doi:10.1525/si.2003.26.4.553

Corbett, M. (2001). A protracted struggle: Rural resistance and normalization in Canadian educational history. *Historical Studies in Education/Revue D'histoire de L'éducation*, *13*(1), 19–48.

Corbett, M. (2016). Rural Futures: Development, Aspirations, Mobilities, Place, and Education. *Peabody Journal of Education*, *91*(2), 270–282.

Corbett, M., Vibert, A., & Green, M. (2016). *Improvising the curriculum: Negotiating risky literacies in cautious schools*. New York, NY: Routledge.

Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Los Angeles, CA: Sage.

Cranston, N., Watson, J., Allen, J., Smith, C., Wight, S., Roberts, W., & Kameniar, B. (2014). *Factors impact on student retention beyond year 10 in rural, regional and disadvantaged communities in Tasmania—A wicked problem*. Retrieved from University of Tasmania Web site: http://www.utas.edu.au/__data/assets/pdf_file/0005/749579/RETENTION_REPORT_OCT_2014.pdf

Crawford, M. B. (2010). *Shop class as soulcraft: An inquiry into the value of work* (Reprint edition). New York, NY: Penguin.

Cubberley, E. P. (1922). *Rural life and education: A study of the rural-school problem as a phase of the rural-life problem*. Boston, MA: Houghton Mifflin.

Dadson, M. (2014, February 27). Agricultural centre plan for Hagley. *Launceston Examiner*. Retrieved from http://www.examiner.com.au/story/2118706/agricultural-centre-plan-for-hagley/

Davy, A. (2016, March 29). School farm leads to employability. *Rural Weekly*. Retrieved from http://www.ruralweekly.com.au/news/school-farm-leads-to-employability/2978575/

Dewey, J. (1997). *Experience and education: An introduction to the philosophy of education*. New York, NY: Free Press.

Dewey, J., & Jackson, P. W. (1990). *The school and society and the child and the curriculum*. Chicago, IL: University Of Chicago Press.

Education & Training Committee. (2012). *Inquiry into agricultural education and training in Victoria* (Parliamentary Paper No.196, Session 2010-2012). Retrieved from Parliament of Victoria Web site: http://www.parliament.vic.gov.au/etc/inquiries/inquiry/276

Fenwick, T., & Edwards, R. (2010). *Actor-network theory in education*. Milton Park, Abingdon, Oxon ; New York: Routledge.

Fenwick, T., Edwards, R., & Sawchuk, P. (2011). *Emerging Approaches to Educational Research: Tracing the Socio-Material* (1 edition). Milton Park, Abingdon, Oxon ; New York: Routledge.

Gallasch, R. (2013, June 5). Gate shuts on farm schools. *Launceston Examiner*. Retrieved from http://www.examiner.com.au/story/1553315/gate-shuts-on-farm-schools/

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, IL: Aldine.

Gonzalez, N., Moll, L. C., & Amanti, C. (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms.* New York, NY: Routledge.

Grant, R. (2015, July 3). Tasmania's agricultural productivity rising at almost triple the national rate. *Australian*

Broadcasting Corporation. Retrieved from http://www.abc.net.au/news/2015-07-02/tas-ag-policy/6592838

Green, B. (2013). Literacy, ruralty, education: A partial mapping. In B. Green & M. Corbett (Eds.), *Rethinking rural literacies: Transnational perspectives* (pp. 17-34). New York, NY: Palgrave Macmillan.

Green, B. (2015). Research, practice, emergence; or, emergent methodologies in cultural inquiry and educational research. *Fusion*, 1-12. Retrieved from http://www.fusion-journal.com/issue/007-fusion-mask-performance-performativity-and-communication/research-practice-emergence-or-emergent-methodologies-in-cultural-inquiry-and-educational-research/

Greenwood, D., & Smith, G. A. (Eds.). (2007). *Place-based education in the global age: Local diversity* (1st ed.). New York, NY: Routledge.

Grunewald, D. (2003). Foundations of place: A multidisciplinary framework for place-conscious education. *American Educational Research Journal*, *40*, 619-654. doi:10.3102/00028312040003619

Halsey, R. J. (2011). The establishment of area schools in South Australia, 1941-1947. *History of Education Review*, *40*(2), 127-141. doi:10.1108/08198691111177217

Hanson, R. (2013, August 13). Job opportunities on the farm. *Tasmanian Country*, p. 7. Retrieved from http://tascountry.realviewtechnologies.com/?iid=80357&xml=TAS_Country

Hughes, P., & Parker, H. T. (Eds.). (1942). *The Tasmanian Area School*. Hobart, Australia: Department of Education.

Jenkins, M. (2014, March 12). Crops to classrooms: How school farms are growing student engagement. *The Guardian*. Retrieved from http://www.theguardian.com/teacher-network/teacher-blog/2014/mar/12/school-farms-engaging-students-curriculum-sustainability

Keppel, A. (1962). The myth of agrarianism in rural educational reform, 1890-1914. *History of Education Quarterly*, *2*(2), 100-112. doi:10.2307/367105

Latour, B. (2007). *Reassembling the Social: An Introduction to Actor-Network-Theory*. New York: Oxford University Press, USA.

Lingard, B., Hayes, D., & Mills, M. (2003). Teachers and productive pedagogies: contextualising, conceptualising, utilising. *Pedagogy, Culture & Society*, *11*(3), 399–424.

Lingard, B., Martino, W., Rezai-Rashti, G., & Sellar, S. (2015). *Globalizing educational accountabilities*. New York, NY: Routledge.

Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.

Malafouris, L. (2013). *How things shape the mind: A theory of material engagement.* Cambridge, MA: MIT Press.

Malpas, J. (2016). Placing understanding/understanding place. *Sophia*, 1-13. doi:10.1007/s11841-016-0546-9

Maslin, J. S. (1948). *Hagley: The story of a tasmanian area school*. Melbourne, Australia: Georgian House.

Mortimer, O. M. (1993). The Tasmanian area schools. In R. C. Petersen & G. W. Rodwell (Eds.), *Essays in the history of rural education in Australia and New Zealand* (pp. x-y). Darwin, Australia: William Mitchell.

Neale, S. (2013, June 12). Plan to sell school farms comes under fire. *The Australian*. Available from http://www.theaustralian.com.au/national-affairs/education/plan-to-sell-school-farms-comes-under-fire/story-fn59nlz9-1226662111395

Noddings, N. (2003). *Caring: A feminine approach to ethics and moral education*. Berkeley: University of California Press.

Noddings, N. (2005). *Educating citizens for global awareness*. New York, NY: Teachers College Press.

Paine, M. (2013, November 8). School farm sell-off. *Tasmanian Country*, p. 6. Retrieved from http://tascountry.realviewtechnologies.com/?iid=83865&startpage=page0000006#folio=6

Reid, J., Green, B., Cooper, M., Hastings, W., Lock, G., & White, S. (2010). Regenerating Rural Social Space? Teacher Education for Rural-regional Sustainability. *Australian Journal of Education*, *54*, 262-276. doi: 10.1177/000494411005400304

Rockliff, J. (2014). A win for farm school and for common-sense [Press release]. Retrieved from Premier of Tasmania Web site: http://www.premier.tas.gov.au/releases/a_win_for_farm_school_and_for_common-sense

Rose, M. (2005). *The mind at work: Valuing the intelligence of the American worker*. New York, NY: Penguin.

Sahlberg, P. (2011). *Finnish lessons: What can the world learn from educational change in Finland?* New York, NY: Teachers College Press.

Sahlberg, P. (2015). *Finnish lessons 2.0: What can the world learn from educational change in Finland?* New York, NY: Teachers College Press.

Sayre, L., & Clark, S. (2011). *Fields of learning: The student farm movement in North America.* Lexington: University Press of Kentucky.

Shelton, J. (2005). *Consequential learning: A public approach to better schools*. Montgomery, AL: New South.

Somerville, M. (2007). Postmodern emergence. *International Journal of Qualitative Studies in Education*, *20*, 225-243. doi:10.1080/09518390601159750

Staight, K. (2016, March 11). Farm studies [Television series episode]. In B. Hawke (Producer), *Landline*.

Retrieved from Australian Broadcasting Corporation Web site: http://www.abc.net.au/landline/content/2015/s4397362.htm

Theobald, P. (1997). *Teaching the commons: Place, pride, and the renewal of community.* Boulder, CO: Westview.

Thomson, P. (2002). *Schooling the rustbelt kids: Making the difference in changing times.* Crows Nest, Australia: Allen & Unwin.

Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity* (1st ed.). Cambridge, United Kingdom: Cambridge University Press.

White, S. (2015). Extending the knowledge base for (rural) teacher educators. *Australian and International Journal of Rural Education*, *25*(3), 50-61.

Zipin, L. (2009). Dark funds of knowledge, deep funds of pedagogy: Exploring boundaries between lifeworlds and schools. *Discourse: Studies in the Cultural Politics of Education*, *30*, 317-331.doi: 10.1080/01596300903037044

Zipin, L., Sellar, S., Brennan, M., & Gale, T. (2015). Educating for futures in marginalized regions: A sociological framework for rethinking and researching aspirations. *Educational Philosophy and Theory*, *47*, 227-246. doi:10.1080/00131857.2013.839376