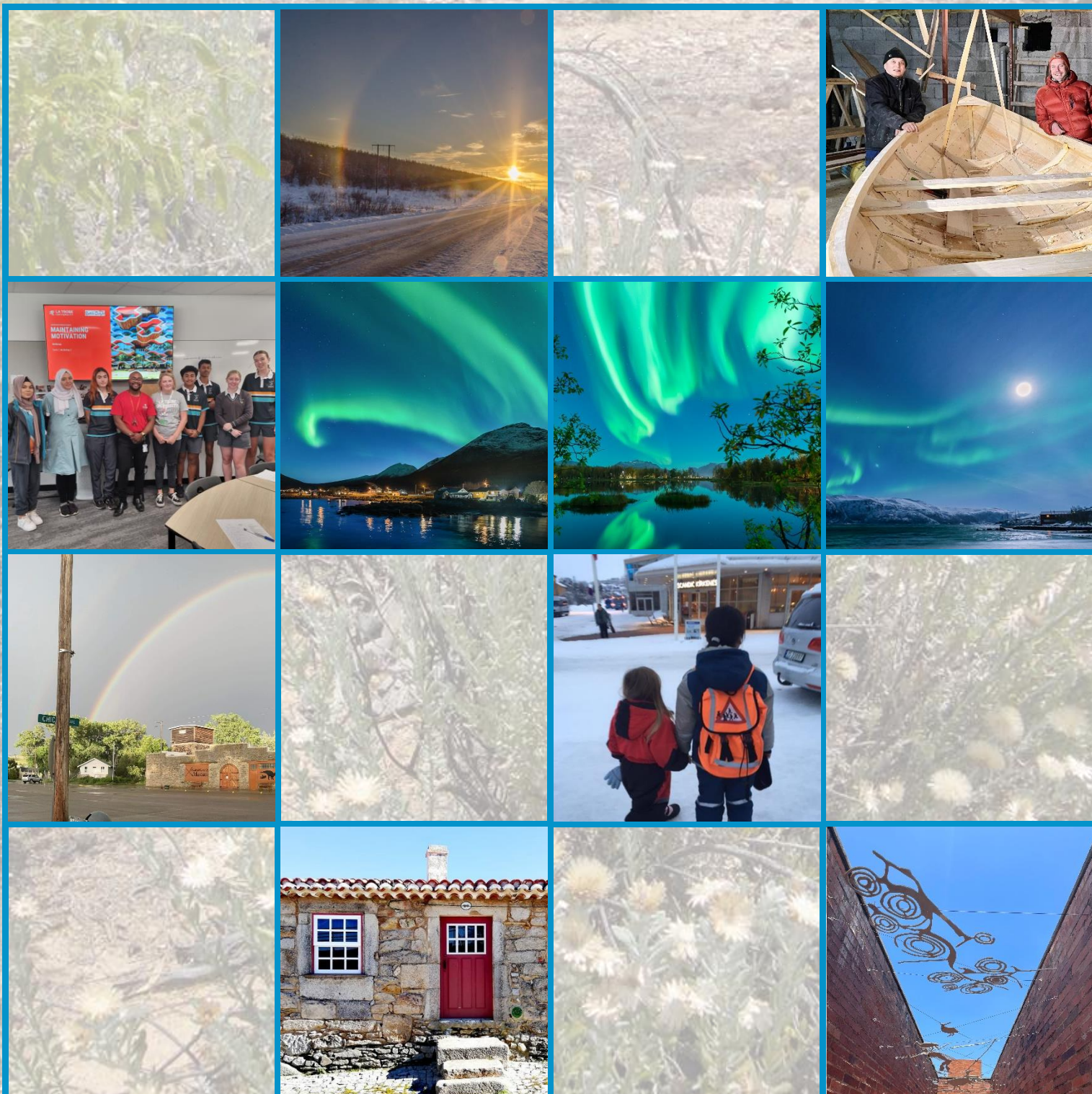


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Australian and International Journal of Rural Education

Rural Knowledges and Curriculum: International Perspectives

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Editorial

In this special issue of the *Australian and International Journal of Rural Education*, international scholars consider how rural knowledges are – or are not – embedded in their local educational systems. They draw on their work, research, and their lived-experiences in rural education to explore the opportunities and challenges of enacting place-conscious curriculum and pedagogies.

The origins of this special issue lie in a panel discussion held online during the COVID-19 pandemic and hosted by the European Educational Research Association (EERA) Network 14 in March 2022. EERA Network 14, one of the 34 networks of the European Educational Research Association, provides a forum for the development of research-informed knowledge in the field of Education, with a specific interest in the relations between communities, families, and schools. The panel exchanged views on how to build community-school relationships in rural areas, with a particular focus on curriculum and its enactment. The panel discussion can be found at universityofst-andrews.padlet.org/laurencelasselle/BuildingCommunitySchoolRelationships.

This special issue gathers papers that further explore the ideas from the discussion panellists and new contributions sparked by it. Our collection of international scholars from Sweden, Norway, Portugal, the United States, and Australia share insights into what is being done within their educational or cultural institutions, as well as their education systems, to strengthen relationships between these institutions and rural communities. With many education systems and policymakers continuing to concentrate on a type of ‘equity’ that values metrocentric norms and goals (Bæck, 2016; Beach et al., 2019; Green, 2013; Passy & Ovenden-Hope, 2020; Paulgaard, 2017; Roberts, 2014; Roberts & Green, 2011) to the detriment of rural knowledges and people, our scholars argue that place-consciousness is needed to improve not only educational outcomes for rural youth, but also for the sustainability of the communities themselves.

The first article, *Rural Education and Migration: A Study of the 2015 Reception of Young Refugees in Sweden*, reminds us of the tragedy of many who fled when war broke out in Syria in 2011. A number of them arrived in Sweden and were dispatched by the authorities unevenly across the country by which smaller municipalities received proportionally larger numbers than others. Elisabet Öhrn, Dennis Beach, Monica Johansson, Maria Rönnlund, and Per-Åke Rosvall explored how schools received these new refugees and how their reception influenced teaching. Their analysis points out that if “some changes in forms of teaching became permanent as they were considered beneficial to non-migrant students, there were very few signs of changes in the content of teaching”.

The second and third articles enable us to encounter the rich cultural heritage of the Sámi, who reside in Northern parts of Norway, Sweden, Finland, and the Kola peninsula of Russia. To begin with, Anne Birgitte Fyhn and Ylva Jannok Nutti show us how local rural mathematics curricula could be created from the Sámi culture. Specifically, they analyse three traditional activities “*with respect to the framework cultural symmetry, which was developed in research in Māori mathematics education*”. By doing so, they highlight how the Sámi traditional measuring of length, *ruvden* (traditional braiding) and the coastal fishermen’s method of navigation embed each the Sámi values of *máhttit* (knowing something as bodily knowledge) and *diehtit* (knowing about something) that should be the basis of a culture-based mathematics curriculum and pedagogy. Gry Paulgaard and Merete Saus give us a vivid portrait of rural Northern Norway, Finnmark, and the impacts of the enactment of the national curriculum in the region. From their experiences as local persons and long-time social scientists, they question the ‘equity’ narrative by revealing its inadequacy to reflect the broad diversity of the pupils’ lives and places. Their “*call for a rural education curriculum that is contextualised and can encompass diverse diversity*” is profound and will resonate with many of us.

The fourth article continues the debate surrounding the application of a national core curriculum in rural schools and shifts to the context of Portugal. Sofia Marques da Silva critically discusses how rural schools in border regions and communities “*develop collaborative strategies to promote the integration of local knowledge into the curriculum and education practices in general*”. However, she concludes that in practice “*although schools recognise the national policy of curriculum flexibility as an opportunity to incorporate local knowledge they do not fully benefit from this opportunity.*”

The final article takes us across the Atlantic Ocean and invites us to Ekalaka, Montana in the United States of America. Sabre Moore, Angela Weikart, Jayne Downey and Sharon Carroll detail the place-conscious approach to education adopted by community leaders during the height of the COVID-19 pandemic. They document why and how local history and knowledge were the basis of a museum exhibit and a K-12 curriculum about pandemics and vaccines. They argue that these “*contributed to [strengthen] cross-community connections and vitality [during a time] of division and fear amplified by the pandemic*”.

The Rural Connections piece, written by Belinda d’Angelo and Cherie Dyde, fits nicely within our series of place-conscious articles. It gives us the opportunity to learn more about a unique and successful Regional Higher Education Pathways program delivered by La Trobe University (Australia) in schools with low socioeconomic measures across the Albury-Wodonga and Shepparton regions since 2017 and 2019 respectively. The program not only guides and supports Year 12 students to develop their skills and confidence to become independent learners, but also aims to increase further education attainment in regional areas to boost the economic outcomes of local communities.

The final piece of this special issue is the review of the book *Rural Transitions to Higher Education in South Africa: Decolonial Perspectives* by Timmis et al. (2020), written by Dipane Hlalele. The book gathers works issued from a project investigating the learning journeys of students from rural areas of post-apartheid South Africa. The book’s authors adopt a decoloniality lens and highlight how these students can be successful in their university journeys.

To summarise, all contributing authors explore some of the challenges and opportunities around embedding local, rural knowledges in their curricular jurisdictions, with a recognition that each place has unique characteristics. They elaborate on the extent to which the differing contexts (social, cultural, geographical, etc.) of ‘rural’ influence the role of schools – namely through its curriculum as a socio-educational hub (Bagley & Hillyard, 2014). It is in this sense that they all examine how different types/classifications/context of rural influence (re)connections within

their communities and tease out key understandings from across the variety of contexts (Hargreaves et al., 2009).

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Rural Education and Migration: A Study of the 2015 Reception of Young Refugees in Sweden

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Abstract

In the autumn of 2015 a large number of mainly Syrian refugees arrived in Sweden. They were unevenly distributed geographically by the authorities and smaller municipalities received proportionally larger numbers than others. The schools became central in the local reception processes. They faced difficulties but also possibilities, both pedagogical, organizational and in relation to social issues. Based on participant observation and interviews with staff in six rural schools in different rural areas from an ethnographic study, in this paper we explore experiences about how schools received the new refugees and how reception influenced teaching. The analyses indicate some changes in forms of teaching (e.g. sensitivity to language differences, more explicit structuring of tasks) that became permanent as they were considered beneficial to non-migrant students as well. In contrast, there were very few signs of changes in the content of teaching, which appears to have largely remained largely the same as before the refugees came.

Keywords: *refugees, teaching, local conditions, ethnography*

Introduction

War broke out in Syria in 2011 with a subsequent tidal scale escalation of war born diaspora as families fled the fighting and related atrocities. Many of these families included children. There were also refugee children traveling without their parents, sometimes with another relative or a neighbour, and sometimes unaccompanied. They usually fled to neighbouring countries such as Turkey and Lebanon, but many also travelled (often under hazardous conditions) to other nations, many on them in Europe, such as Greece, Italy, France, Germany and Sweden (UNHRC,

<https://www.unhcr.org/news/stories/2015/12/56ec1ebde/2015-year-europes-refugee-crisis.html>).

The number of refugees peaked in 2015, putting enormous pressure on the receiving countries, many of which had different ways of accommodating refugees and including their children in the educational system. Access to infant, primary, secondary and post-secondary education varied across countries, as did decisions as to whether to educate the new students in ordinary classes or separately from others in special reception classes, before integrating them with children from the host-nation's population.

Recipients of the largest numbers of refugees and asylum seekers were Germany followed by Sweden, France and the Russian Federation (Rosvall, 2017). Thus, Sweden was one of the countries in Europe that had the most generous policy for accepting refugees, particularly towards young children and unaccompanied minors. However, the reception posed as a major challenge for the nation, and particularly for municipalities, including many sparsely populated rural areas, that received proportionally larger numbers of refugees than other parts of the country (Skolinspektionen, 2016). The reception put a lot of stress on the local schools, as they were vital for the reception of young refugee's integration and feelings of safety. As pointed out in previous research (e.g., Hek, 2005), schools are central meeting points in young people's everyday lives, and institutions that convey national knowledge and understandings. This also was evident in the Swedish reception, as pointed out by Nilsson and Bunar (2016). It affected many parts of society, but no other institution was given as much responsibility as schools were.

Research Background

Sweden was not the only European country to allocate a significant proportion of the 2015 asylum seekers to rural regions. This was also the case in Germany, a fact said to have furthered an interest for areas that are otherwise typically less focused on in migrant research than urban ones (Glorius et al., 2021). However, research on rural migrants and especially on the mere reception and how it varies with different conditions in rural areas is sparse (ibid).

One significant feature for the reception and education of the new refugees relates to what kind of schools they are arriving to and what kind of curriculum they offer (Crul et al., 2019). Our previous analyses point to rural school curriculum packaging in some cases relating more openly and distinctly to the local context than in others (Öhrn & Beach, 2019). There were differences between settings, with local contextualising in teaching appearing especially in sparsely populated areas, which showed a greater representation and appreciation of the local place in classroom interactions, school interior displays and teaching content. Also, there was a voiced appreciation among young people of social cohesion in their place typically phrased as the advantages of 'Everyone knows everyone'. This condition generally appeared in the descriptions from the ethnographic cases to form a foundation for solidarity and social cohesion among locals. It is important however not to overgeneralise or overemphasise these points (Beach & Öhrn, 2021). The features of strong localism appear only in some cases and never at the expense of teaching official knowledge and national values through the formal curriculum.

Rural integration can be considered in relation to what Shucksmith et al. (2009) argue to be a conceptual dichotomy in rural research, between what they term pastoralism (representing rural idylls to be cherished by stressing discourses of everyone knows everyone and close relations between individuals) and pre-modernism (emphasising constraints and resistance to change in rural life). Also discussed by for instance Halfacree (1995), Leyshon (2008) and Rye (2006), pastoralism derives from concepts of the organisation of common grazing-land. Shucksmith's definition however highlights the organisation of community when respecting an open common access natural assets and a 'community spirit'. This kind of spirit might further the reception and inclusion of new community members (Johansson, 2019) and a less ethnically residential segregation compared to urban areas (Forsberg et al., 2012). But it might also be that the lack of shared history with new arrivers and their lack of localised capital (Corbett, 2007; Moilanen, 2012)

may pose as a hindrance to reception and inclusion when there is a strong element of local cultural conservatism.

The conceptual dichotomy identified by Shucksmith et al. (2009) and discussed also by others such as Halfacree (1995) and Leyshon (2008), is interesting in relation to how rural areas during the refugee wave were affected both by EU and national legislation, not the least when people experienced themselves to be on the receiving-end of European and national policies beyond their control, and that lacked understanding of rural conditions (Rosvall et al., 2022). The experience of being on the receiving end might encourage or support negative views of migrant placements. However, municipalities with small educational institutions also have more inter- and intraprofessional exchanges (Rosvall, 2022), so effects might be positive in intimate pastoral spaces where closeness between institutions and individuals could tighten local solidarity further and aid two-way cultural adaptations. Taylor and Kaur Sidhu (2012) point to how the worldwide rise in numbers of refugees and asylum seekers requires that practices of institutions charged with their resettlement are identified and analysed so schools may be able to make better contributions to successful refugee reception of young and resettlement. They identify barriers to inclusion confronting young refugees and examples of how to develop professional practices to meet their needs through and in models of good practice in educational institutions through inclusive schooling (Arar et al., 2019). Professional leadership for social justice in multicultural contexts plays an important role in orchestrating and promoting sound professional and intra-professional practices and collaboration (García-Carmona et al., 2021; Khalifa, Gooden & Davis, 2016; Shields, 2010).

Rural schools and communities obviously have different histories and respond to different conditions. Such differences most probably also have implications for the reception of young migrants generally (Arar et al., 2019; Taylor & Kaur Sidhu, 2012), as well as for the organisation of their education (García-Carmona et al., 2021). Previous Swedish research reports of two main forms of teaching organisation for migrants (with some local variations); separate preparatory classes (in Swedish: *förberedelseklass*), and regular Swedish-speaking ones (Nilsson & Bunar, 2016). Regular classes potentially offer a better chance of integration with Swedish-speaking youth, whereas preparatory classes have been said to offer better chances for learning content, but also to risk furthering isolation from other students. Bunar (2017, p. 7) reports of newly arrived students expressing a strong desire to be part of mainstream education and included “in a real class”. He emphasises the need to view these students as equal to others, not as “temporary others” (Bunar 2017, p. 15). In line with this, research should look for and analyse also the positive options or outcome associated with receiving migrant students. This is also our aim with the present article, where we discuss the organisation and implications of the reception of refugees in 2015-2016 by drawing on ethnographic research from six schools in various rural municipalities in Sweden using the following research questions:

- How was teaching organised for refugee students and on what grounds?
- Did forms and content of teaching change with/after the reception of refugees?
- What posed as central challenges and resources with the reception of refugee students?

Theoretical Framework

The project is a theoretically informed ethnography (Willis & Trondman, 2000) framed within a materialist theory of culture drawing on Massey’s (1994/2013) ideas about the importance of socio-spatial and material practices, for the historical and contemporary processes of interconnection between different kinds of place and space and the people in them. The theory in this way furthers an interest in the relations between various material and social conditions of a place, and its relations to the outside world, including in our case ways of organising schools and education for the reception of new young refugees. The theory has guided how we have formed our questions and shaped our analyses when we try to understand and develop critical insights

into (and explanations about) the expressions and positions taken by participants in relation to their roles in these processes. Our questions therefore include ones addressing how people try to create professional and intra-professional practices and collaboration in the reception of the new young refugees, and how they try to induct them into majority language, history and culture (Taylor & Kaur Sidhu, 2012). Other international research discussing these matters includes work by Khalifa et al. (2016) and Shields (2010).

Method

The article draws on research from six schools in different rural areas in Sweden, studied in the four-year project *Education and integration of newly arrived migrants in rural area* (Funded by Swedish Research Council 2019-2022, VR 2018-03970). The schools and municipalities selected for the projects were chosen to represent variations regarding different types of rural setting, including both de/industrial towns, small villages and sparsely populated areas in northern and southern Sweden. They included schools and local populations from mountain and forested areas situated inland or by the sea-, lake- and riverside.

The project was designed to investigate the scope of different reception and teaching strategies and practices in schools and municipalities. It focussed on experiences of various forms of organising teaching, and changes in teaching content during the reception process (including representations of 'us', 'the place' etc), as well as central challenges and resources associated with the reception. The data consists of classroom and school observations, and interviews with school staff (primarily teachers) and municipal employees who handled migration issues. There were in all 45 interviews spread across the six different communities and 41 days of participant observation, mainly from 2019 and 2020. The project also includes a second part, which further explores local experiences of the reception and integration process through interviews with school and community staff in 15 additional rural municipalities, to be presented in forthcoming texts.

We have conducted research in the selected schools previously, in 2015-2016 when the wave of Syrian refugees peaked, with this helping us to contextualise the current analysis in relation to how the schools adopted different strategies toward the new arrivals. Even the previous project, *Rural youth – education, place and participation* (funded by the Swedish Research Council 2014-2018, VR 2013-2142), was an ethnography with classroom observations, field conversations and formal interviews with students and staff at the schools, supplemented with observations in the local neighbourhood (see Öhrn & Beach (2019) for details). These data provide a backdrop to the analyses in the text.

What Happened in School When the Refugees Arrived?

The refugees in 2015 were distributed by the authorities to places with access to refugee camps, vacant apartments or premises for temporary accommodation, but with rural communities receiving proportionally larger numbers (Skolinspektionen, 2016). There was some surprise in this. People in the municipalities and schools we visited typically expressed they had felt unprepared for the arrival and had been forced to improvise and develop plans and knowledge as they went along. A special needs teacher said:

We were supposed to get information from the National Agency... but they didn't have time, so we had to reinvent the wheel. There ... wasn't material [and] so we had to figure out as we went along... When there were this many, what you had reasoned about before,... there was no routine, we lacked routines. ... Forty two they were in the preparation class. It was tough for them... and for teachers too, when it comes to students who have neither subject knowledge nor language skills. It didn't turn out well... This was autumn 2015. (Teacher, Inland)

The number of refugees was of course a challenge in itself and the diversity of the group was another. They varied quite considerably with respect to previous formal education and language skills in English according to teachers and some had recently suffered significant traumatic experiences. Teachers and headteachers generally described students who they said had little prior education as posing the biggest challenge. Some of the issues, such as the lack of teachers (and sometimes also study counsellors and interpreters) with adequate language competence, were seen as more difficult in rural schools than in large urban ones, where there are typically more personnel who master various languages. However, at the same time as there were challenges, generally teachers in reception schools spoke about the arrival of a significant number of new pupils very positively, as providing a chance for development and new opportunities from a now growing local population. The refugee students' eagerness to go to school and learn was also spoken about with warmth and as much appreciated. The situation was challenging and brought about needs to re-think and re-organise teaching, and the pressed time-schedule and uncertainties about how many new students would arrive brought difficulties. Yet the teachers describe their all-round experiences of and encounters with the new population as positive.

Organisation of Teaching

The reception and teaching approaches seemed to differ quite significantly between schools and regions in the study. The national policy regulating local organisational models was scant, corresponding mainly to regulations about assessment and providing education within a month. However, in January 2016 the Swedish Government via the Agency of Education legislated some changes restricting the definition of new arrival to a defined maximum period of four years. A new organisational form for education reception for new arrivals was also introduced.

The terminology used was *preparatory classes* (which is also the concept used in this text). Regulations stipulated that placements there should stretch over no more than two years maximum (<https://www.skolverket.se/regler-och-ansvar/ansvar-i-skolfragor/nyanlandas-ratt-till-stod>), and that wherever possible students should obtain at least some teaching in *regular classes*, as segregation for extended periods often results in early school leaving and non-attendance (Crul et al., 2019). There was however no strict stipulation concerning how many hours and in which subject integration should occur. The authorities left it to local municipalities to take local conditions into consideration and to, in collaboration with teachers, decide on this matter. The regulations made it possible to transfer students to regular classes at any time during any academic year and transfer was supposed to relate most to independent assessments of student development and needs. Teachers described some difficulties that they had experienced:

We had ... little knowledge then... Now we know that it is very easy to get simultaneous interpretation. We didn't really know that at the time and... we didn't have the resources for the students to have the opportunity for the support they needed. (Swedish 2 - second language - teacher, River)

According to the interviews, the initially chosen forms of teaching depended on local resources, rather than considerations regarding pedagogical theory and specific knowledge of the challenges of integrating young refugees into school and society. According to the comments of teachers and headteachers, they generally did not have this kind of specialist professional knowledge. Recent reforms in initial teacher education have tended to hollow out these types of components (Beach & Bagley, 2012, 2013) and practical considerations were foremost anyway at this time according to staff. The special preparatory groups demanded new spaces and more qualified staff. Integration in ordinary classes also called for more staff and, when classes grew too big, also more rooms in which to re-organise smaller classes and new schedules. Consequently, the number of arrivals and the local assets were mainly considered as crucial and headteachers attempted – and sometimes succeeded – to handle the lack of staff by calling on retired teachers, as in Inland school, to manage the preparatory classes:

Initially we had two retired people who took a group... One... has worked as a teacher here before... So she came down and started working here, and then we had a teacher who had been on sick leave ...but who stepped in... She had decided to retire, but said “of course I have to help...” (Headteacher, Inland)

An already existing organisation for teaching of young migrants also proved important for the organisation of teaching for the refugees. A teacher explained about the initial organisation:

Then we had reception in two schools, one for younger and one older. We had a preparation class for each but then came this wave of new arrivals. We managed to deal with it beyond expectations. We had to open up new classes and found a location. First for the younger students... So we had activities in two classrooms... Later on we had the whole group together but we varied a little depending on the subject and prior knowledge. (Teacher, Sea)

Teachers and headteachers described the teaching organisation in preparatory classes and regular ones as more or less flexible. As a result, students could for instance spend the main part of their days in a preparatory group and join regular classes at certain times and in certain subjects. Also, there were individual considerations related to students' age, previous education, feelings of safety, previous traumas, etc. The preparatory classes were typically situated quite close by the ordinary classes, usually in the same building or in an adjacent one, not in a separate area or school. Consequently, the students in preparatory classes were not isolated from other students and the associated risk of normalising a kind of otherness may have been reduced by this (Nilsson & Bunar, 2016). Teachers also considered this close proximity to facilitate for students when being transferred to regular classes from preparatory ones, as the settings were not foreign to them.

The initial organisation then turned out to be tentative and flexible. It changed to adjust to (changes in) contexts. One headmaster described the process as a constant, ongoing adjustment to cope with the changes in staffing as well as inflow of students:

After a year and a half... we got it all in order, when we got a new assistant principal... who had worked in SFL (Swedish as a Foreign Language) basically all her professional life... She sharpened things up and changed and improved them significantly. ... When she came into the picture there were clearer routines and a better structure. (Swedish 2 - second language - teacher, River)

In addition to coping with changes in the stock of students and teachers, there were other features during the process that called for organisational adjustments. For instance, a headmaster in Mountain School told us that they had started with a rather fast transfer of refugee students to ordinary classes, but teachers had considered this a problem, and had felt that they were talking over the students' heads. So, they had changed to organise the newcomers in preparatory classes. This had lasted until the number of arrivals fell, then the school went back to a quick transfer to ordinary classes. It was the number of new students that was decisive according to informants.

When admitting students into ordinary classes teachers and headteachers operated as if some parts of the curriculum were more suitable for this. Subjects that were considered less dependent on Swedish were consequently seen as easier for the newly arrived refugees to cope with and became sites for the required integration expressed in new central policy. Especially practical-aesthetical subjects and sports (and sometimes the natural sciences) were more often taught in regular classes, either as a first step of moving into such classes or as a kind of integration while being taught mainly in preparatory classes. However, teachers expressed often that this had been more problematic than anticipated, as these subjects were not as independent of Swedish mastery as first assumed. For instance at Inland and Sea Schools students were rather quickly transferred to regular classes in practical subjects, but this did not always work out well:

The idea of sending them to the practical subjects... was that there you can see how to do things, even if you don't understand what is being said. You can see it. And of course you can, but the hard part... was to get them to understand the spirit of an exercise, for example. That we train one thing and then, maybe use it then similarly in a different context... It was just lost, they could be good in sports, for example, but with problems in games they had never done before... Also, most boys were used to sports, but the girls weren't... The guys played football, it was almost the only thing... they wanted to do, but when they were involved in something else, it became frustrating explaining rules to someone who doesn't know the language... So, it was really difficult, and then it doesn't matter that you can see how you do it. The same with teaching about injury risks. They have to understand it. (PE Teacher, Inland)

Content and Forms of Teaching

Our earlier project publications highlighted some local rural contextualisation of the official national curriculum, but also that the communication and examination of the quintessentially official curriculum content remained as the main aim (Öhrn & Beach, 2019). Rural schools operated in this sense as urban schools in rural places, rather than as schools that valorised local values and content as of great value. However, staff regularly described that they introduced various changes in the forms of teaching as the refugees arrived that also affected local students who were already attending the school. This included provision of distinct information at the introduction and closing of lessons. Examples given to us related to using bullet points on the whiteboard specifying content and goals of the lesson and what students were to practice on in homework. Teachers also said they had begun to sum up important goals and points of learning at the end of the lesson. Providing illustrative support for word comprehension and spelling 'difficult' words on the white board were other features, along with the listing of synonyms and supporting verbal explanations with pictures.

The new innovations and the ways staff motivated them, related in other words to enhancing the formal curriculum content by scaffolding learning and being more effective in communication. They were presented in a very pragmatic way and without recourse to an established foundation of educational theoretical knowledge from for instance research in multilingual learning environments or on translingual cross-cultural learning studies. Though the changes had links to courses that teachers joined run by or on behalf of the Swedish National Agency for Education, their design was for pragmatic/practical local development work, where teachers acted and observed each other's teaching and jointly discussed the observations from the perspective of successful praxis without attempting to link to scientific knowledge about theories of learning:

We went on three training courses, the literacy lift, grading and assessment, and a course from the Special Education School Authority that everyone participated in... And then we went to each other's classes and watched the beginning and end of them, and then got together and talked about it. There was a completely different openness... But you also have a little bit of a problem with that, being able to talk, like that. There's a lot that's changed and even an attitude towards being open. (Swedish 2 - second language - teacher, Coastal)

Although the number of refugee students had sharply decreased in all of the observed schools at the time of the interviews, several of the changes teachers had said they had introduced had also prevailed. Teachers claimed in line with this to be more sensitive to language differences, and to think about varying their language (use more synonyms for instance), to use pictures to support explanations, and to structure tasks/lessons more explicitly (for instance by writing them down on the white board). This was generally helpful for all students (including Swedish-born ones) who experience some kind of difficulties (language wise or otherwise) or need a clear structuring.

... [everyone realized] yes but this is also good for the S2 students, so what we learn about language disorders, autism and all that stuff, it's also good for the S2 students. They kept up with it and... could see gains. (Swedish 2 - second language - teacher, Coastal)

Some teachers also commented that following on the arrival of the refugees and the subsequent changes in teaching, language became more of a responsibility for teachers in general and less exclusively for 'special'/language/Swedish as second language-teachers only. Still, some wished for even more awareness of the importance of language among teachers in general. This is an important point in relation to the contexts of learning in the present study. Research has shown over many decades now a close relationship between language and learning and how changes in students' (and above all developing/ young students') language systems change their ways of thinking (Halliday, 1986; Vygotskij, 1986). Also known is that there is a division between everyday language and school language (Halliday & Martin, 1993; Bailey, 2007) and that as children learn subject-specific language in school, their linguistic resources expand (Viberg, 1996).

The importance of teachers in complex linguistic and developmental circumstances who are knowledgeable about these circumstances and the demands of teaching and learning in them has moreover been known for decades (Daniels & Lee, 1989). Yet the second language perspective is largely excluded generally in teacher education (Wedin & Rosén, 2022), both relating to the aspect of translanguaging (Paulsrud & Zilliacus, 2018) and the need for a multilingual perspective (Haddix 2008; Rodriguez-Mojica et al. 2019; Li et al. 2021). This may damage the learning opportunities recognised for transnational second language learners and the capabilities of teachers and schools to support their learning and integration.

It's not just S2 teachers who are supposed to work wonders... the whole school has to take responsibility and we did... But maybe not with the kind of impact for them going out in the classes. And that teachers can translate this theoretical way of relating to teaching... It is clear when teachers have very many different tasks to be applied. So, it's hard and it is difficult to collaborate, plan so that they can adapt to all students' difficulties and needs. And this became very apparent when the new arrivals... went out to the classes... (Swedish 2 - second language - teacher, Sea)

The schools typically developed their forms of teaching, but the changes of content appear to be small. Teachers reported of some sensitivity towards different national holidays, traditions etc. in teaching. There were also occasional mentions of awareness that some competences as swimming, skiing and bicycling cannot be taken to be generic the way they often were in the past and that changes in activities such as open days needed to be made concerning celebrations and holidays:

Some things are, somehow, untouchable. We celebrate Lucia with pomp and circumstance in this place and we end the school year with great pomp and circumstance... It was actually fun for them to see the dressing up and things... and we've covered everything in terms of food... with consideration for who's going to be involved, for example... Maybe these are students who have never done some things... We've come up with the idea in middle school that we're going out skiing or something but we have to think, wait a minute "how do we need to think here". In the swimming pool too. (Special Ed Teacher, Inland)

Taken together, the interviews gave the impression of sensitivity towards individual differences in student's academic backgrounds, but changes in curriculum packaging were relatively few in scale, and relatively normative in relation to the communication of official knowledge. The aim was to create conditions from which new refugees could be schooled in the conventional sense in relation to official knowledge, rather than empowered and educated as transnational individuals in Sweden as a complex multi-cultural country where many different first languages are spoken (Eliaso Magnusson, 2020). It seems little notice was given to these features directly. Knowledge and preparation time in teacher education might be lacking, but there were some references

given to efforts at adapting content to accord with the new students' history and home country and culture.

I had couple of Muslim students and when questions came up about events in the world, I asked if they could give their take on them or describe how the event was described where they came from. Later, it emerged during mentoring, that they felt singled out and associated with fundamentalist perspectives and events. (Social Science Teacher, River)

After this, the teacher hesitated to refer to experiences of the migrated students and to include content and information from regions where they came from. However, he found this to bring about other problematics, as Swedish History and Social Science textbooks have a Western oriented narrative that would benefit from being put in perspective.

Most striking as regards the content is perhaps the apparently unchanged presentations of the local/regional school and its surroundings. Presentations of 'us' and 'the place' are described in much the same way as when we visited the schools before the refugees came. As previously, schools in sparsely populated areas used more explicitly contextual content in relation to their historic and present surroundings. Examples included paintings with local motives, pictures by previous students, objects from nature and local handicrafts, etc (Öhrn & Beach, 2019). The refugee students arriving in and then leaving schools seemed to have made little difference to these features:

There are now 93 students at the school, but during the refugee wave there were 164! It looks like normal now... Possibly there is something more to notice about cultural activities on the bulletin board ... but from what I see, there is no trace of the large number of students with a refugee background that previously existed at the school. (Fieldnotes Forest)

Material representations in the school buildings of the local place and its inhabitants had thus not changed. Neither had discursive representations. The discourse was still "everyone knows everyone" (in Swedish: "alla känner alla") - yet the refugees were obviously at risk of being excluded from this group of 'everybody'.

Challenges for Teaching During and After the Reception of Refugees

Two points need to be emphasised as particularly problematic according to informants. One of them concerns the problems created by the limited time for preparation and organising the reception of the refugees and the consequences of downscaling the reception project when they were moved on. The other relates to changes in views about migration, refugees and integration across the reception and integration period.

Lack of Support, Preparation Time and Downsizing Effects

The initial reception of the refugees in some municipalities posed rather extensive challenges. The authorities were typically considered to have been very late in informing municipalities and in providing sufficient help and guidance. Courses from the National Agency for Education were considered helpful for introducing and developing teaching methods, but often came late, even after the students' arrival, when staff was already fully occupied with their new charges. New rules and guidelines were a problem too as they introduced more work for the schools:

When the National Agency new directives came... we'd had new arrivals before, so it wasn't new... But on the other hand, it definitely generated a great deal of stress for staff doing these surveys that had to be done within two months. [...] We sent several staff on a course, I also took a course that the Agency had. (Headteacher, Coastal)

The economic support provided by the state to local municipalities lagged (as also pointed out by later state reports, e.g., SOU 2017, p. 12), but municipalities were eventually given full cost

recovery. Consequently, the financial coverage *during the reception* did not stand out as a major problem. Instead, the downsizing *after* the refugees left or were moved to other places posed a primary concern. However, it might also be that the downsizing appeared particularly pressing at the time of our interviews, when most refugees had left, and the aftermath posed as the most urgent issue for the municipalities to cope with. The local parties had worked hard to organise for a growing body of refugee families and students, and their leaving also required work and time to re-organise. This is not a quick procedure. Dismissing staff and to terminating agreements cannot be immediately effected. It takes time:

Under the circumstances the municipality handled things well... but it's not easy to lay off rented properties at short notice to shed costs... Same thing with staff. Up to six to nine months... as we have notice periods and things like that. The new arrivals were moved but the municipality still has the costs to shed. (Head of New Arrivals Office, Mountain Municipal Council)

A chief education authority officer in Sea Municipality said that they “almost panicked” when the number of refugees decreased. As a poor rural municipality, they depend on various state grants—in this respect as others—and the withdrawal caused grave problems. As the headmaster at Sea School said, “*This isn't a wealthy authority. We don't have that much money!*”

Changing Views on Migration, Refugees, and Integration

The staff interviews pointed to the encounter with eager and hard-working students as very rewarding aspects of the reception. Teachers in all schools talked about this feature and were very appreciative of students who they expressed as seeming to enjoy school a lot:

On the stairwell, I met a teacher... He said that when they had many students was fun, although he added too that it may be that he had forgotten the hard part. It was fun to have students who liked going to school he said and remembered how when the students got to draw and tell what they did during the Christmas holidays one of them had drawn someone half-lying on the bed—just waiting to go back to school. (Field notes, Forest)

In addition to points like those above, staff regularly mentioned positive experiences of the reception with respect to how much they had learnt as teachers. Some also said that they hoped that in the event of a new stream of arrivals “*they could take on as many as possible*” (Teacher, Forest). Furthermore, there were expressions of strong concern for the refugee students with whom they had now lost contact, and how they and their families would manage.

We had someone we wanted to go to a tenth year of school and there I remember this was a stressor for staff, because you are, ehh, you become deeply touched by human destinies... Difficult not to be touched but still needing to try not to fall into that trap. (Headteacher, Mountain)

Concern about the future lot of students and their families emerged to various degrees and in various ways in the schools, but generally related both to students’ chances of managing school in a new country, with traumatic histories, and without knowing the language and curriculum. It acknowledged their position as refugees and whether they might (have to) leave the local place, or worse, the country. As for the latter one teacher said:

Just during this year, we've said goodbye to three students. This is OK if you know that they are going to another Swedish municipality. You can have SMS contact, etc. But when they are actually going out of the country. Then it's horrible. I understand that not everyone can stay. But it is not reasonable that the processes take so much time for the students who are waiting for ‘their turn’... It's cruel. (Teacher, Sea)

Considering how the teachers commented on the study interest and ambition expressed of the students, they experienced the realisation of their meagre chances of success as very stressful.

They said that despite all the hard work from the students, and regardless of their individual capabilities and desires, most of them would not be able to meet the requirements of the formal curriculum well enough to pass their courses. Communicating this risk of failure to students and their parents was a further source of tension.

They were really good maybe in the school where they come from, and then they come to us and we say that it will be a really long time maybe before they get grades because this subject is one they have not studied before. Girls who haven't studied the same subjects as boys and such is another problem... It's been quite a challenge to describe the school system and explain it. (Special Ed Teacher, Inland)

Something we mentioned previously (namely the hollowing out of theoretical and academic content from teacher education, and moving teacher preparation back toward a teacher training paradigm (Beach & Bagley, 2013)) may be relevant in relation to the above extract. The latter makes it clear how teachers are able to recognise a systemic abuse of their students but have no ideas at all about what to do about this mistreatment. In other words, they:

- Knew there was a problem and how it appeared
- Could and did talk about the problem with each other and in interviews with us
- Had no course of professional action to overcome the problem.

The students' failing to "make their grades" became a simple inevitability in the expressions from the teachers, and a mere fact of practice rather than a challenge they could actually do something about as professionals. Teacher education had not provided opportunities to discuss professionally how students in complex linguistic contexts and translingual learning actually learn, and what this meant for how to assess them justly and equally in relation to others. This challenge remained outside their professional repertoire.

Closing Remarks

The starting point for the project reported on in this article was how rural communities in various locations handled the educational reception of large groups of refugees. The municipalities and their schools had different resources available, little time to prepare for the reception, and received very few guidelines. This may reflect the attitudes of central political authorities toward national peripheries and the individuals who formed the new diaspora (Crul et al., 2019). However, the preparation of teachers in Swedish teacher education appears to be another problem, if schools are to be able to make successful contributions to young migrant reception and resettlement along the lines of Arar et al. (2019), Taylor and Kaur Sidhu (2012) and others (such as e.g. García-Carmona et al., 2021; Khalifa et al., 2016; Shields, 2010). Research based scientific professional content knowledge has been stripped out of teacher education programmes according to Beach and Bagley (2012, 2013) and this may have contributed to schools being unable to respond adequately to the demands of providing an empowering education for new refugees and unable to understand that this is neither their fault nor that of their charges (Eliaso Magnusson, 2020). Teachers and headteachers showed great sympathy, charity, and concern for the plight of the new refugee students and they also became very impressed by their study commitment and desire to learn. Yet they were still terrorised by the knowledge that they were effectively unable to help them do so sufficiently well "to make the grade".

The different models for organising teaching in schools came to depend on local resources and ideas rather than pedagogical theory and research based professional knowledge. The idea that some school subjects are better suited than others for rapidly integrating bi-lingual students, is an example. It allowed larger groups but was based on a fallacy about the easiness of practical learning compared to academic and a lack of knowledge about cross-cultural bilingual learning and learners. It was an example of how forms of teaching were said by teachers to have changed in some respects, after the reception of the refugees in 2015, but this kind of change in form

aside, as regards teaching content, neither observations nor interviews indicated that it had changed. Curriculum content and discourses of the local place and its members (the who-we-are or 'us') had remained largely the same. Some beneficial changes in instruction were said to have remained even after the refugee students left, due to their value for all students.

As we write this, the number of refugee students from 2015 has sharply decreased in all the observed schools. This downsizing for some schools and municipality agents appeared to present almost greater challenges than the reception and integration did. It helped shed otherwise inevitably unbearable economic costs but was difficult to handle for municipalities with small financial resources. Accordingly, there were several examples of strong local critique toward the authorities for neglecting the economic and demographic problems they created.

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Intangible Cultural Heritage as a Resource for a Sámi Mathematics Curriculum

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Abstract

Northern Norway's population comprises many different cultural groups. According to the Norwegian Education Act, education must give students insight into and a firm foundation in history and culture. This paper aims to present a proposal for how to start working with the creation of local rural mathematics curricula for which Sámi culture in particular, and Northern Norwegian culture in general, is the basis and foundation. It examines three activities that are examples of intangible cultural heritage from different non-urban Northern Norwegian cultures: i) Sámi traditional measuring, ii) fishermen's traditional navigation at sea and iii) *ruvden* (a Sámi way of braiding). The activities are analysed with respect to the framework cultural symmetry, which was developed in research in Māori mathematics education. The analysis shows that the three activities are of great significance to local cultural reasoning to such an extent that they should be included in local rural mathematics education. Each of the three activities provides opportunities for developing a culture-based mathematics teaching that values the language and culture in which the activities are embedded. We conclude that cultural symmetry seems to function as a tool for developing a Sámi mathematics curriculum.

Keywords: *measuring, navigation, braiding, Indigenous, mathematics education, Sámi languages*

Introduction

When Norway gained its Constitution in 1814, Northern Norway was a geographically and culturally rural area. The population comprised the Indigenous Sámi, the Qven minority, and Norwegians. Most people lived on smallholdings in combination with fisheries, and in addition the reindeer herding families moved around with their herds. The area was rich in resources, and people in many of the areas had to pay taxes to more than one country before the borders became clear in 1791 (Aarseth, 1989). Rokkan (1995) pointed out that for hundreds of years, privileged traders (Norwegian: '*nessekonger*') had bought people's products, decided their credit, and thereby controlled their lives. During the 20th century, Norway as a national state moved towards a stronger concentration of 'elite' arenas in the capital Oslo area in the south. Rokkan claimed Northern Norway to be a polarised periphery. Hellevik (2010) points out that the centre-periphery polarities in Norway also include cultural polarities between an urban, internationally oriented elite and a locally oriented rural population. In 1972, Northern Norway gained a university, but north-south centre-periphery polarities still exist. The Coastal Rebellion (*Kystopprøret*, 2023) was established in 2017 with the message that the resources should belong

to the people, and that the fish in the ocean has to cause activity in Norway instead of abroad. The Sámi parliament in Norway was established in 1989. In February 2023, there was a breakdown of negotiations between the Sámi parliament and the Norwegian government regarding consultations about the new Education Act (Sámediggi, 2023). This breakdown shows that cultural center-periphery polarities still exist.

The Sámi are an Indigenous people of the Arctic who inhabit northern parts of Norway, Sweden and Finland, and the Kola peninsula of Russia. Sápmi is the name of the area where the Sámi historically live. Traditional Sámi livelihoods are reindeer herding and combinations of smallholdings and fisheries. *Meahcceealdhus* (hunting, fishing and gathering) and *duodji* (Sámi handicraft) have strong traditions. In Sámi traditional knowledge, the term *knowledge* means knowledge as a process, not just as the outcome of a process. The Sámi people and their culture have had very limited space in Norwegian schooling. The Sámi curriculum was established in 1995 (Ministry of Education, Research and Church Affairs, 1997). It is based on Sámi culture and values, which are peripheral to the culture and values of the decision makers at the Ministry of Education. From our perspective, this was a rural curriculum, with one exception: The mathematics curriculum was a mere translation of the national curriculum text. The reason for the exception is most likely the idea of mathematics being considered cultureless. This idea is engraved in people's views about the nature of mathematics, due to its long history (Meaney, Trinick, et al., 2022). Despite the Sámi curriculum, Keskitalo (2009) points out that the Sámi school system in its present state in Norway is based on the ideas of the national Norwegian school system.

To recognise and reinforce living cultural heritage, Norway ratified the Convention for the Safeguarding of the Intangible Cultural Heritage (The United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020) in 2007, with a special commitment towards the Sámi people. In the Convention, the phrase 'intangible cultural heritage' means practices, representations, expressions, knowledge and skills—as well as the instruments, objects, artefacts and cultural spaces associated with them—that communities, groups and, in some cases, individuals recognise as part of their cultural heritage. The aim of our article is to provide examples of how to contribute to safeguarding Sámi intangible cultural heritage as well as intangible cultural heritage of the coastal Northern Norway.

Centre-periphery tensions influence the teaching of mathematics, as well as other subjects. For instance, Fyhn and Nystad's (2013) study of one national mathematics exam found that more than one sixth of the exam's first part concerned contexts that are absent in the north. Contexts and activities must be taught with due regard for the culture and the language in which they are embedded. This is not always the case when examples from the local rural culture are introduced into school mathematics. If culture is reduced to just a tool for teaching mathematics, there is a risk that the well-meaning mathematics teacher contributes to misrecognition of culture, instead of the opposite. The research question is: How may illumination of tensions between intangible cultural heritage from the north and Western mathematics contribute to a future Sámi mathematics curriculum?

The framework of cultural symmetry (Trinick et al., 2016; Meaney, Trinick et al., 2022) values intangible cultural heritage in mathematics education and serves as a tool to prevent situations where culture is reduced to just a tool for teaching mathematics. The framework deals with tensions between intangible cultural heritage and school mathematics. We show how cultural symmetry can serve as a tool for creating a Sámi mathematics curriculum. We analyse mathematical reasoning that is embedded in three different activities that belong to Sámi culture. The reason for the choice of activities is that we know them from own previous research: Jannok Nutti's (2007, 2010, 2013) study of Sámi traditional measuring of length, Fyhn et al.'s (2014, 2015, 2017) study of *ruvden*, a Sámi braiding, and Fyhn and Robertsen's (2020) study of a fisherman's traditional navigation.

The first author, Anne, grew up in Tromsø when it was a small rural town with no traffic lights, no TVs, and no university. Her grandfathers were fishermen who later became sailors. Her father taught her how to find and use a straight course while rowing a boat, before she learned any foreign language at school. Anne has cooperated with Sámi researchers and mathematics teachers since 2005 and she holds a professor II position at the Sámi University of Applied Sciences. The second author, Ylva, is a Sámi researcher and former Sámi primary school teacher, and since 2015 she has been associate professor for the Sámi teacher training programme at the Sámi University of Applied Sciences. She lives with her reindeer-herding family in the home village of Johkamohkki in the Swedish part of Sápmi. From 2010 to 2014, Anne and Ylva worked together with a Sámi lower secondary school on a research project about Sámi culture and mathematics.

Background

Norway's ratification of the Intangible Cultural Heritage Convention (UNESCO, 2020) supports the work towards including intangible cultural heritage in a future Sámi mathematics curriculum.

Northern Norway's Coastal Cultural Heritage

The fish in the ocean is the most important reason for permanent settlement in small communities along Northern Norway's coast. Edvardsen (1984/2011) studied schools and livelihoods in a Northern Norwegian coastal society in the last part of the 19th century, after Norway was freed from the Danish colonialists. He describes how the school fought against the coastal culture and its way of living; it was not the children of the coast who needed to be educated, but the culture itself.

The mission of the educational system is to mold one subculture to fit the specifications of another subculture. The manners and breeding of the upper classes are the source of the teacher lectern's general education: the uncultivated is to be cultivated, the primitive civilized. Norway is "a work in progress" that has to be made into one country. (Edvardsen, 1984/2011, p. 118)

Edvardsen points out that local people's scepticism towards school and schooling was the wise and sensible individuals' resistance. The school encountered a way of living that was rich in knowledge that differed from the school's knowledge, but the schoolteachers did not consider the population's knowledge to be 'knowledge'. Edvardsen furthermore claims that the Sámi population were exposed to double Norwegianization, because their language, as well as their culture, needed 'cultivation'. Trinick and Heaton (2020) describe a similar 'cultivation' in Aotearoa/New Zealand, where the function of the curriculum at that time was to assimilate and 'civilise' the Māori population. English language and cultural hegemony were used to build a nation state.

According to Maurstad (2010), small boats with one or two fishermen constituted the backbone of Norway's coastal societies. People rowed or sailed these boats. The small traditional boat 'spisse', is about to go out of use in the Sea-Sámi areas. The Sea-Sámi organisation Mearrasiida pass on knowledge about the construction of 'spisse' to ensure that such boats remain an important part of Sea-Sámi culture (Mearrasiida, 2019; Hætta Karlsen et al., 2023).

The Sámi's Need for a Sámi Mathematics Curriculum

The first Sámi curriculum claimed that teaching should provide basic cultural knowledge and include local culture and cultural heritage (Ministry of Education, Research and Church Affairs, 1997). Hirvonen and Keskitalo's (2004) evaluation of the 1997 curriculum revealed a need for a curriculum change in which Sámi culture would become the basis and premise for teaching, rather than just an appendix. Jannok Nutti (2010, 2013) studied Sámi mathematics teachers' work about including local Sámi culture in their teaching. She conducted her study in the Swedish part of Sápmi. As in Norway, there is no Sámi mathematics curriculum. Teachers themselves must adapt

their teaching to the local culture, and as a result, usually no Sámi culture-based mathematics teaching takes place. She also found that the teachers' newly developed knowledge about ethnomathematics as a field of research seemed to enhance their work with Indigenous culture-based mathematics teaching.

The Core Curriculum (Ministry of Education and Research, 2017) claims that the Sámi school must ensure that pupils receive education and training based on Sámi values and language. Norway gained new curricula for all subjects in 2019. The Ministry of Education and Research (2018) stated beforehand that the new curricula from 2020 should include Sámi issues in all subjects. It turned out to be no Sámi content in the mathematics curriculum, because “... *mathematics is a universal language, independent of culture*” (Ministry of Education and Research, as cited in Fyhn (2020), author's translation).

Indigenous Mathematics Curricula outside Scandinavia

In the 1990s, New Zealand's Minister of Education agreed to the development of Māori medium curricula, and Pāngarau (mathematics) was one among three learning areas to be developed (Stewart et al., 2017). In 2007-8 this curriculum was redeveloped. The writers started from a different position compared with the original development, because most of them had been involved in the previous curriculum. In 2013, even the development and implementation of curricula of the more highly politicised Māori-medium sectors was funded by the state (Trinick & Heaton, 2020). The development of Māori-medium mathematics curricula actually represents a contrast to the Sámi mathematics curriculum in Norway, where the Ministry claims that mathematics is a universal language independent of culture. This also means that the Māori are approximately 25-30 years ahead of the Sámi when it comes to mathematics curriculum development. According to Trinick and May (2013) the development and modernisation of the Māori mathematics register has also resulted in discussions about standardisation versus dialect loyalty. As for the Sámi mathematics register, the 1990 mathematics dictionary has been renewed only once (Nystad et al., 2002), and there is a need for an improved version of it.

Math in a Cultural Context: Lessons Learned from Yup'ik Eskimo Elders (MCC) is a supplemental mathematics curriculum that is based on the traditional wisdom and practices of the Yup'ik people of southwest Alaska (Lipka et al., 2010). A group of elders, teachers and researchers cooperated on developing curriculum modules. MCC focuses on relations between pedagogy, mathematics and culture. The modules are published in English, the language of instruction is not considered.

Cultural Symmetry

Traditionally, the Māori were renowned for their navigational expertise, being able to navigate using traditional techniques across vast distances in the Pacific Ocean (Trinick et al., 2016; Barton, 2008). Meaney, Fyhn, et al. (2022) cite 'Peter', who is Indigenous,

Our people navigated across vast tracts of the Pacific Ocean without a sextant, without a compass, but they had the knowledge and their materials and tools to do that. But that was not the Western view of maths, so that was not considered mathematical knowledge. (p. 556)

Based on their work on the revitalisation of Māori cultural practices in mathematics education, Trinick et al. (2016) and Meaney, Trinick, et al. (2022) developed the three-step approach called 'cultural symmetry'.

Even if Indigenous students do gain mathematical insights from interacting with familiar cultural practices, there is a risk that the intrinsic value of the cultural artefact is devalued if it is reduced to a tool for transmitting mathematical ideas. The idea of cultural symmetry is to prevent this risk. The framework differs from other approaches to culture-based mathematics teaching in the

sense that cultural knowledge and language must be recognised and valued before any mathematics is introduced; intangible cultural heritage is highlighted and valued.

Step 1 in cultural symmetry is for the cultural knowledge and language to be identified and acknowledged as valuable. Regarding concepts of spatial orientation, it is important for the students to understand that location and direction are not just about finding one's way, since this also concerns cultural practices related to the landscape; as practices that are developed over a long period of time. Step 2 concerns examining the cultural practices and discussing them from a range of perspectives. Regarding location and direction, the Māori used a variety of spatial frameworks abstracted from landmark-based systems for their orientation. These references were derived from a mix of different phenomena, including the actions of the sun and the wind, and geographical land formations. Regarding the north-east-south-west orientation, they found that the hegemony of Western mathematics made it challenging for both teachers and learners to consider other means of orientation. Step 3 involves considering how mathematics can add value to cultural artefacts and practices, without detracting from the cultural understanding. This means discussing the origins and frameworks that underpin cultural knowledge in Western mathematics, as well as traditional Māori practices, and discussing the advantages and drawbacks of both. Functional use of cultural symmetry to analyse our three different examples of intangible cultural heritage may suggest how this framework can constitute the basis for a Sámi mathematics curriculum.

Analysis: Relations between Cultural Activities and Mathematics

Research on Indigenous Issues needs to be carried out in a way that is respectful and ethically sound from an Indigenous perspective (Louis, 2007). The three cultural activities in our study are presented from Indigenous and rural perspectives. Our study aims at showing how these activities can add value to Sámi mathematics education. For the activities bodily measuring and sea navigation, we also have included what we could find of available literature that present Sámi voices. However, there is not much literature about these issues. Ryd (2007/2022) and Birkely (1994) describe bodily measuring of snow depth. Ryd has interviewed the Sámi reindeer herder Rassa about snow, and the Sámi skier Birkely has studied the history of ski use from a Sámi perspective. The Sámi boat builders Hansen and Stødle present how they use traditional measuring in their work (Hætta Karlsen et al., 2023). The Sámi handicrafters Guttorm and Labba (2008) and Dunfjeld et al. (2018) explain how bodily measuring is used in Sámi handicraft *duodji* (south Sámi: *duedtie*). The Sámi boat builder Hansen (2021) describes Sea-Sámi landscape navigation at sea.

We chose cultural symmetry as the tool for our analysis because the framework is designed to prevent the risk of devaluation of the culture. Our paper focuses on Sámi intangible cultural heritage. However, there are not watertight bulkheads between Sea-Sámi culture and Northern Norwegian coastal culture. Different cultures may have activities in common; being different does not mean that nothing is shared. New Year is for instance celebrated in many different cultures. The 6th century historian Prokopios denoted the Sámi as '*Skriithifinoi*', which means 'skiing Sámis' in Early Norwegian language (Birkely, 1994). The verb '*skrida*' means to go skiing. Nowadays, skiing is declared as Norwegian culture, but it is definitely Sámi culture, too. Coastal fishery in small boats belongs to Northern Norwegian culture, but it also belongs to Sea-Sámi culture.

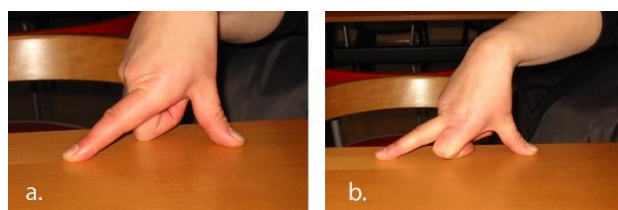
We argue that the chosen activities are of such considerable importance that they should be considered for inclusion in a future Sámi mathematics curriculum. Since all three activities belong to intangible cultural heritage, they obviously have value. Acknowledgement of value is included in cultural symmetry's first step.

Activity 1: Sámi Traditional Measuring of Length

The first published text about Sámi mathematics was Nystad's (2002) book chapter about geometry and traditional Sámi measuring. Some years later, Jannok Nutti (2007) published a study of reindeer herders and *duojars*' Sámi mathematical reasoning. A *duojar* is a skilled individual who works with Sámi handicraft, *duodji*. Jannok Nutti describes how the herders and *duojárs* use traditional Sámi measuring, counting, and estimation of large numbers in their everyday work. She analyses interviews with skilled individuals who practice two different culture-dependent activities.

We delimit our study to focus mainly on the traditional measure *goartil* (short for *čuvdegoartil*/pointing finger *goartil*), which is the distance from the thumb tip to the pointing finger's tip, as shown in Figure 1a. To measure by *goartil* is called *goartilastit*, which directly translated into English means to *goartil*-measure. This relation between noun and verb is a Sámi way of speaking that is not found in the Norwegian and Swedish (nor English) languages. *Goartil* is widely used for measuring snow depth. This is important for reindeer herders, because six *goartil* is the maximum snow depth a reindeer can dig through to find food (Jannok Nutti, 2007). To measure snow depth, reindeer herders traditionally turn a ski pole upside down and push it through the snow, to the ground. Next, they mark or check where on the pole the snow surface is, before pulling the pole back up again. Then they can *goartilastit* the length of the ski pole that was below the snow surface. Nowadays, the herders use snow scooters instead of skis, but they bring their hands and a pole with them. *Goartil* is also used in Sea-Sámi boat building (Hætta Karlsen et al., 2023) and in leather sewing and *gákti* (a traditional Sámi garment) sewing (Guttorm & Labba, 2008). The use of *goartil* and other measurements have survived the introduction of the SI system. We interpret this to mean these measurements are useful, and thus have value.

Figure 1a: The Sámi Measure of *Goartil* (*čuvdegoartil*) and Figure 1b: *Gaskasuorbmagoartil* (Long finger *goartil*). Photos: Kristine Nystad. Reprinted from “Geometri og tradisjonelle måleenheter” (p. 94), by K. Nystad (2002). Reprinted with permission.



Step 2 in cultural symmetry concerns different perspectives of *goartilastit* and *goartil*. One more *goartil* measure is *gaskasuorbmagoartil*, which is the distance from the thumb tip to the long finger's tip (Guttorm & Labba, 2008; Nielsen, 1979), as shown in Figure 1b. This measure is a bit longer than a (*čuvde*)*goartil* and is used when sewing *gákti* for men (Fyhn, Eira & Sriraman, 2011). Nielsen (1979) distinguishes between *goartil* and *čuvdegoartil*; he explains *goartil* as a quarter of an ell. This is similar to Ryd's (2007/2022) explanation of a 'kvarter', *goartta*. Based on interviews with the Lule Sámi reindeer herder Johan Rassa, Ryd explains that Rassa measures snow depth by 'kvarter'. A supporting photo shows Rassa measuring snow depth by *čuvdegoartil*, similar to the North Sámi reindeer herders in Jannok Nutti's (2007) study. Ryd adds that “[w]hen the ‘kvarter’ is not measured by folding rule but by fingers [as in Figure 1a], it is a bit longer, maybe 18-19 cm” (p. 22, author's translation). One reason why Ryd has two different explanations of this measuring unit might be due to the influence of the Swedish language. However, it could also be that the *goartil* unit was used in two ways, depending on the context. Birkely (1994) refers to the skilled Sámi skier Apmut Ahrman, who knew some Swedish language. Ahrman measured snow depth by 'kvarter' when he referred from the 1884 ski race in Johkamohkki (maybe the longest ski race ever). Birkely interprets Ahrman to use the *čuvdegoartil* measure shown in Figure 1a. Dunfjeld et al. (2018) present three different South Sámi words for *goartil*: *vuepsie*, *vuemsie* and *voemse*, while a quarter of an ell is called *goerhte* or *goerhtere* in South Sámi.

The measure of *salla* (fathom) is often used to measure depths in lakes and in the ocean, and for the length of a *suohpan*, lasso. Wool frieze fabric was traditionally measured in *salla*. Usually, a *suohpan* is somewhere between 10-15 *salla*, depending on its use (Fyhn & Nystad, 2021). *Suohpan* length is related to body size. For that purpose, it is useful to have an individual *salla* measure. The International System of Units (SI system) belongs to Western mathematics, while *goartil*, *salla* and traditional use of these measures belong to the Sámi intangible cultural heritage. Nielsen (1979) only refers to a standardised use of *goartil* and not to the individual *goartil* measure. The SI system is taking over more and more and even some *duodji* books of today use metre and centimetre instead of *goartil* and *salla*.

The use of individual body measurements is used by other Indigenous peoples, too. Lipka et al. (2013) describe how the Yup'ik people in Alaska use body-related, non-standardised measuring units. Their point is that the ratio between individuals' footlength and other body parts, such as arm's length, is the same. Yup'ik elders use body-proportional measuring as a generative solution to solve everyday problems. The aim is to use a proportional measure and not a universal unit of measuring like the metre.

In Step 3, we refer to Jannok Nutti's (2010) description of how primary school students experienced the transition from their own personal *goartil* as an individual unit of measurement to the grown-up reindeer herder's standardised *goartil* as a tool for measuring snow depth. The individual unit of measurement was intuitive to grasp and work with for the children. The transition from individual to standardised units for measuring would most likely also contribute to an understanding of mathematics for non-Sámi primary schoolchildren.

Activity 2: Ruvden – A Sámi Braiding

The lower secondary school in Guovdageaidnu/Kautokeino participated in a research project about the round-shaped Sámi braiding, *ruvden*, and how to perform the braiding procedure. The project developed a short video that starts with two schoolgirls presenting what *ruvden* is, what *ruvden* cords are used for and how to perform the braiding (Fyhn et al., 2014). This is directly related to Step 1, identification of knowledge. The verb *ruvdet* means to braid *ruvden* cords. The word *ruvden* is used for braiding with 4, 8, 12 or 16 threads. So, the generalization of the term *ruvden* becomes apparent, as *ruvdet* with different numbers of threads follows the same procedure (Fyhn et al., 2017). The use of colours tells a story about the individual who wears the cord: gender, marital status and family belonging, so rules for the use of colours are embedded in the culture. Yellow yarn is for instance less used in the Norwegian part of Sápmi, while being quite common on the Swedish and Finnish sides. Ancient Sámi worshipped the sun like a God. According to Dunfjeld (2001/2007), the missionaries considered yellow to be a sinful colour, because it symbolised the sun. This caused the yellow colour to almost disappear from South Sámi clothes. Shoe bands were the only items that kept the yellow tradition. The strongest among the elders were the only individuals who maintained the tradition with the yellow colour in other parts of their clothes.

At the first meeting between mathematics teachers and researchers, two teachers presented their approaches to the *ruvden* procedure (Fyhn et al., 2017). One was a narrative that describes rules of behaviour when you visit your neighbour's *lávvu* (a traditional Sámi dwelling), while the second was a detailed and stepwise description of how to move the threads. The two different approaches caused a move to Step 2. The teachers discussed the braiding from different perspectives. They found the narrative approach easier to remember, but maybe rather childish for lower secondary students (Fyhn et al., 2015). Jannok Nutti presented a third approach from her schoolwork; analytical drawings of how the threads move. Her presentation included *ruvden* with 4, 8, 12 and 16 threads. The teachers met at workshops, where the discussions considered how to express the braiding procedure through mathematics and why the number of threads had to be divisible by four to get a round-shaped cord.

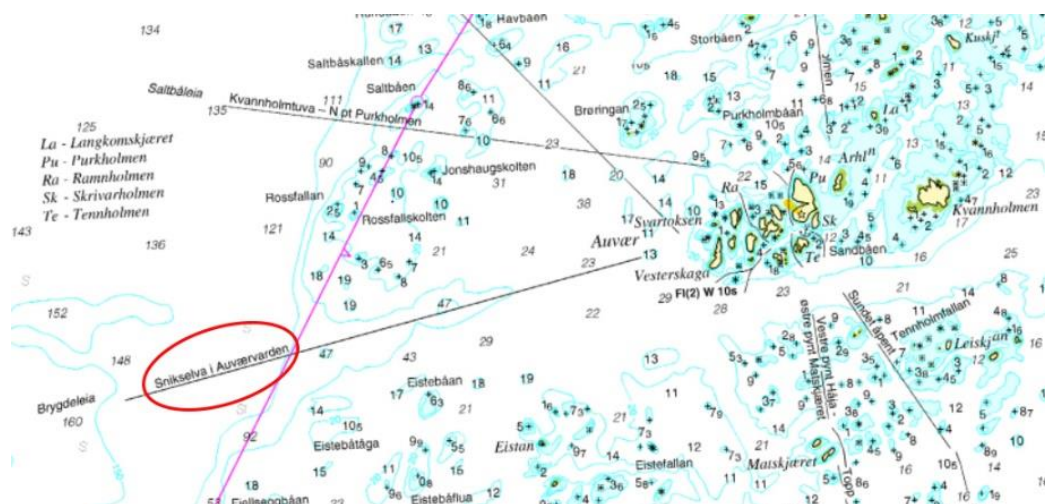
Step 3 was clearly apparent when one of the teachers conducted a teaching unit about *ruvden* in his class (Fyhn et al., 2015). The students started out by braiding with different numbers of threads, to investigate which number of threads would give a round-shaped cord. They found that the number of threads had to be divisible by four. In the language of Western mathematics, the generalisation of the *ruvden* procedure may be described as an example of an algorithm. This indicates that *ruvden* may function as basis for teaching about programming. At the workshops, teachers identified the moves of each thread in the braiding procedure. Each step included a move past a given number of other threads, which was presented as an algebraic expression (Fyhn et al., 2017). Teachers and researchers expected beforehand that the transition from numbers to letter symbols would cause the most challenges for the students, but this was easy for them to grasp. The students' challenge was grasping the content of compound expressions with letters and number symbols. The emergence of programming as part of the national mathematics curriculum (Ministry of Education and Research, 2019) opens up more possibilities, because for those who are familiar with the *ruvden* procedure, the algebraic expression of it can add value to students' grasp of algorithmic reasoning.

A closer look at what happens in Step 2 made the researchers see that while the research project focused on the braiding procedure, the girls who participated in the video focused on the different cords you could make (Fyhn et al., 2017). This presentation of different possibilities revealed mathematical reasoning that was categorized as enumeration, sorting and organising elements in a set. This is combinatorics and not algebra. It turned out that, with access to yarn in four distinct colours, you can *ruvde* 31 different cords with four threads. As pointed out by Fyhn and Steinfjell (2023), there is no need to calculate this exact number, but the enumeration per se is useful to gain an overview of different possibilities.

Activity 3: Coastal Fishermen's Navigation

The coastal fishermen's traditional navigation at sea is related to knowledge of the tides and the local landscape both above and below sea level. Fyhn and Robertsen (2020) analyse the fisherman Håkon's navigation practice. He is the skipper on a 12.16-metre-long fishing vessel. He represents the oldest generation of active coastal fishermen, and the last generation that learned navigation without technological artefacts such as GPS and marine chart plotters.

Figure 2: Part of Sea Map from Håkon's Local Area. Screenshot from Norgeskart.no



When people travel by car or bus, they follow a road. A *lei* (shipping lane) at sea is like a *road* on dry land. Figure 2 shows the *leis* named Saltbåleia and Brygdeleia. Brygdeleia is presented as 'Snikselva i Auværsvarden' (Sniks creek in Auvær's cairn), marked with a circle on the map. To find

Brygdeleia when you arrive at these islands landwards, you follow a sightline through the island of Auvær's cairn, which ends up in the waterfall from the Snikselva creek (this creek is far behind to the right and not included on the map). A sightline like this one is called *méd*. *Méds* are important navigation tools for fishermen's work at sea, to find fishing spots and to use safe shipping lanes. Sea-Sámi words for *méd* are *vihtá* and *mearka* (Meron, 2023). According to Hansen (2021), *mearka* is used nowadays, while *vihtá* is an old term. The importance of language in *méds/mearkkat* come to surface in the use of local names. The fishing spots are often intertwined with a rich cultural history where you need to know mountains, rivers and valleys, and even small hilltops and plains in order to orient yourself (Maurstad, 2010). Hansen (2021) provides some examples of *mearkkat* in Sámi language, for instance, *Guovdesuolu luovvana Jágánis* (The Guovdesuolu island is loosened from the island Jágána). Sámi language and coastal Northern Norwegian dialects express *méds/mearkkat* by less words than the language of Western mathematics does.

Fyhn and Robertsen (2020) reveal that lexical descriptions of *méd* are usually presented in the language of Western mathematics, as variations of the theme that a *méd* is a straight line that is given by two points. Pais (2011) and Meaney, Trinick, et al. (2022) warn against this, that traditional knowledge of a phenomenon is interpreted and expressed in the language of Western mathematics. Lexica and Wikipedia contribute to devaluing the traditional knowledge by omitting the traditional way of putting *méd/mearka* into language. The precision of fishermen's navigation by *méds/mearkkat* shows that this precision does not depend on Western mathematics' language.

When Håkon follows Brygdeleia in Figure 2 on his way home from fishing banks in the ocean, he does not need to include any mathematical terminology such as 'point' or 'straight line' to understand exactly where he is. As long as his eyes are OK and the weather is clear, he can find his way using *méds*. The value of *méd* is obvious, because it is an important part of the fishermen's life insurance.

Step 2 is about examining fishermen's navigation competences and their practice from other perspectives. The lexica descriptions that use the language of Western mathematics solely refer to the phenomenon of *méd/mearka* and not to the cultural practices. Håkon uses modern technology in his everyday work at sea because it is functional. When asked, Håkon tells a true story from when the electricity stopped working on his boat out at sea on a dark winter's day. Then he uses his watch, a compass and knowledge of the tides to navigate his boat all the way to the shipyard in Tromsø more than 40 kilometres away, through uncertain waters and in complete darkness. The fishermen's challenge is to face what they have to do on the day the chart plotter and GPS stop working.

Step 3 concerns how Euclidean geometry might add value without detracting from the fishermen's cultural knowledge about navigation. The knowledge that two straight lines intersect at one and only one point is part of Euclidean geometry. This knowledge is so central to the coastal fishermen that it is expressed through the concept of '*tverrméd*' (*across méd*, our translation), *doaresmearka* in Sámi. Håkon explains this as *méding* in two directions (*å méde to veier*, our translation). Knowledge of *tverrméd/doaresmearka* is necessary for the fisherman's ability to navigate at sea in demanding conditions and for precise localisation of fishing spots. Hansen (2021) provides examples of fishing spots, presented by one *mearka* in the direction of inward/outward the fjord, and another *mearka* in crosswise direction.

Discussion

The analysis of three different cultural activities with respect to cultural symmetry shows clear tensions between Western mathematics and two of the activities, measuring and navigation. We have shown how Sámi traditional measuring is replaced by the SI system and coastal fishermen's navigation language is replaced by the language of Euclidean geometry. Because GPS systems

and chart plotters are replacing landscape navigation, many local place names will be out of use. Place names, which are intangible cultural heritage, vanish if they are not in use (Pedersen, 1991). Sámi and coastal Northern Norwegian belong to different language groups, but their expressions of *méds/mearkkat* are shorter than the standardised formal Norwegian's. Norwegian lexicographical literature explains *méd/mearka* in the language of Western mathematics but does not refer how these are expressed in the fishermen's language (Fyhn & Robertsen, 2020).

Guttorm (2011) distinguishes between two Sámi concepts of knowing, *máhhtit* (knowing something as bodily knowledge) and *diehtit* (knowing about something). *Máhhtit* and *diehtit* are mostly connected with practical and theoretical knowledge, respectively, but there are not sharp borders between them. Regarding bodily measuring and landscape navigation, our study shows that the *máhhtit* part (the ability to perform the action) is less in use nowadays, because the *diehtit* part (to know something) is replaced by Western mathematics. The braiding *ruvden* and the *ruvden* procedure are not influenced similarly by Western mathematics, because the *máhhtit* part is *duodji* with less visible mathematics content.

D'Ambrosio (1999) introduces the term *ethnomathematics*. He points out that each culture has developed its own ways, styles and techniques for performing and responding to the search for explanations, understanding and learning. Bishop (1988) presents six fundamental activities which, he argues, are universal in that they appear to be carried out by every cultural group ever studied. These activities: counting, measuring, playing, locating, designing, and explaining, are necessary and sufficient for the development of mathematical knowledge. From Bishop's perspective, the three activities in our study show examples of mathematical ideas: bodily units of measuring, generalisation of a braiding procedure, and use of the landscape in sea navigation. Like other ideas, these are human constructions, created within a cultural context with a history. Opposed to the cultural symmetry framework by Meaney, Trinick et al. (2022), Bishop back in 1988 did not consider language as crucial for his six basic activities. Language and relations between language and cultural practice is important for the three activities in our study, because it is through language mathematical thinking is expressed and described. The use of Sámi language for expressing bodily measuring, and Sámi as well as Norwegian fishermen's landscape navigation, reveals a way of thinking that differs from how Western mathematics is expressed in Norwegian. This is one important reason why a future Sámi mathematics curriculum should be written in Sámi language instead of being translated from Norwegian as the situation is today.

Future Sámi Mathematics Curriculum

Step 2 in Cultural symmetry highlights the cultural practice, this is what Guttorm (2011) explains as the *máhhtit* aspect of cultural knowledge. *Máhhtit* measuring using individual bodily measures is relevant for early years in primary school and so is *diehtit* the transition from individual to standardised *goartil* and *salla* measures. *Máhhtit* navigation by *mearka/méd* is an activity that is relevant for geometry in the second half of primary school, in Sámi schools and in other schools in the North. Fyhn and Robertsen's (2020) study of the fisherman Håkon's language showed that he uses verbs and refers to activity, which is similar to the *máhhtit* aspect of landscape navigation.

The results from our study show that it is relevant to distinguish between the *máhhtit* and *diehtit* aspects of cultural knowledge in a future Sámi mathematics curriculum. In addition, valuing students' *máhhtit* in mathematics education opens for a new perspective of mathematics education.

In Fyhn's (2015) study, the teacher who conducted *ruvden* in his mathematics class claimed that he would cooperate with a *duodji* teacher if he were to repeat the project. His students needed to *máhhtit* the braiding before they could elaborate on the *diehtit* part of knowledge. *Máhhtit* the *ruvden* procedure with a different number of threads includes knowledge of generalisation, which in turn can be used as a basis for students' approach to algorithms (Fyhn et al., 2017). *Diehtit* *ruvden* is relevant for algebra and combinatorics in Sámi mathematics education.

Juuso (2022) analysed the Ministry of Education's (2015) national report on renewal of school subjects from her Sámi perspective. She elaborates on how and why a Sámi mathematics curriculum needs to be based on Sámi interpretations of competence, whereby Sámi values come to the surface. Fyhn, Hætta Siri and Juuso (2023) investigated possible North Sámi translations of the curriculum sentence that describes what the curriculum interprets 'algebra' to mean. Given the difficulties encountered in that process, they concluded that a curriculum originally written in a Sámi language would probably be less time-consuming to create and easier to understand. They also concluded that a Sámi mathematics curriculum based on Sámi culture, reasoning and values would probably require fewer resources than continuing the established tradition of merely translating national curriculum texts from Norwegian to the Sámi languages. A Sámi mathematics curriculum would have to include suggestions for local adaptations, because Sámi culture is not homogeneous and the different Sámi languages express things differently.

Intangible Cultural Heritage in a Future National Mathematics Curriculum

The context-less national mathematics curriculum contrasts with the Core Curriculum (Ministry of Education and Research, 2017), about identity and cultural diversity: *"School shall give pupils historical and cultural insight that will give them a good foundation in their lives and help each pupil to preserve and develop her or his identity in an inclusive and diverse environment"* (pp. 5-6). The 1997 curriculum (Ministry of Education, Research and Church Affairs, 1997) introduced thematic and project work as a new way of working. Evaluation of this reform revealed that many of the issues in the Core Curriculum were approached through thematic and project work. The students learned, among other things, to cooperate, to be flexible, to search for information, to be independent, and to adapt to new requirements and new conditions (Rønning, 2004). Teachers reported that mathematics was usually excluded from thematic and project work, because mathematics has high status, a fixed structure, and a strong progression. Rønning's findings together with the ingrained idea of mathematics as a culture-free subject (Meaney, Trinick, et al. 2022; Fyhn, 2020) indicate that if rural culture from the north should be included in the national mathematics curriculum, politicians must change their attitude towards mathematics as a subject. However, Sámi traditional measuring might be included in early years of primary school because of the *máhhtit* part. To start with each child's individual bodily measures and proceed to standardised measures, is in line with how mathematics is taught. As long as national tests and national exams strongly influence the way mathematics is taught, there is reason to believe that no Sámi intangible cultural heritage will be included in secondary school mathematics.

Conclusion

Our study focuses on three examples of intangible cultural heritage that are embedded in Sámi culture. Landscape navigation at sea, bodily units of measuring and traditional braiding are activities that can serve as a basis for a Sámi mathematics curriculum. Our study shows that *máhhtit* and *diehtit* as two aspects of knowledge needs to be highlighted in a future Sámi mathematics curriculum. Cultural tensions between the government and the Sámi as well as tensions between Northern Norwegian coastal societies and the 'elites' nearby the capital Oslo, needs consideration in order to achieve a Sámi mathematics curriculum. Awareness of these tensions show that Sámi measuring and sea navigation are being gradually replaced by Western mathematics (the Sámi are not to decide the content of their mathematics education). Other countries have their own intangible cultural heritages that might be more successfully included in mathematics curricula. The Māori have 30 years' experience with mathematics curricula. Research in Māori mathematics education has resulted in the development of cultural symmetry. Our study shows how cultural symmetry together with a focus on *máhhtit* and *diehtit* as two aspects of knowledge can serve as a functional tool to create a Sámi mathematics curriculum in Norway. Future studies can provide better insight into how a focus on *máhhtit* and *diehtit* as two aspects of mathematical knowledge can contribute to a Sámi mathematics curriculum.

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Diverse Diversity: Contradictions and Challenges in Norwegian Rural Education

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Abstract

The authors of this paper share a common background from the Northern Norway region, a rural county and the largest and least populated county of Norway. The region is characterised by high out-migration, lower educational levels, and higher drop-out rates from secondary education than in other regions of Norway. Limited educational provision makes it necessary for many young people in rural areas to leave home to take a secondary education. Large geographical distances make it difficult to commute on a daily basis. Historically, this area has been the most culturally diverse in Norway, as the domicile of the Sámi Indigenous people and the national minority, the Kven, and the Norwegian ethnic group. This Arctic region is characterised by the encounter with three ethnicities, and traditional industries such as fishing, farming and herding, combined with modern industry and knowledge-intensive enterprises.

Despite this multi-ethnic and geographically diverse society, the schools are still struggling with the unit-oriented curriculum, ignoring the diversity among the pupils. When the multi-ethnic society is not embedded in the education system, nor given in the adolescents' hometown, the education system will be exogenous and will appear foreign. In this paper, we use available public statistics and a literature review, inspired by autoethnographic methodology—whereby authors use their experiences as a person and a long-time researcher in a field to describe, analyse and understand the phenomenon—to argue for a local- and contextual oriented schools to make meaningful and practical improvements to rural education.

Keywords: Rural education, Northern Norway, education system, diversity, universalistic curriculum, drop-out

Introduction

The authors of this paper share a background from the northernmost, largest and least populated rural region in Norway, Finnmark. This region is the home of the Sámi (an Indigenous people of the Arctic), the Kven (a traditionally Finnish speaking national minority in the north of Norway) and the Norwegian population. These three ethnic groups share the territory, but each has their own language, identity and cultural history. Historically, this area has been the most culturally diverse in Norway. The presence of diversity, Indigenous people, national minorities and the Norwegian majority has always been noticeable here, and most recently the diverse population of this northern region has been increased by immigrants from different countries around the world. Immigrants have moved to Northern Norway from multiple countries, due to work and education opportunities, and as refugees escaping wars, oppression and conflicts. The proximity to other

countries, such as Finland, Sweden and Russia, has also led to border crossing by young people, especially from Russia. In demographic terms, the region is thereby diverse when it comes to ethnicity, language, culture, social and economic development, and citizenship.

Finnmark is situated above the Arctic circle. The territorial scale is equivalent to Denmark, but the population density is very low, and below 76,000 inhabitants, compared to Denmark with almost 6 million inhabitants. While people in many other parts of Europe can commute on an everyday basis for education or work, this is not an option for many people in Finnmark. One of the most striking differences between this region and rural areas in the rest of Europe is the harsh climate and the relatively small population who are spread across vast territories and great distances (Löfgren, 2000). Large geographical distances and limited educational provision make it necessary for many young people in this area to leave home to undertake secondary education. Finnmark is also characterised by high out-migration, lower educational levels, and a higher rate of drop-out from secondary education than in other regions in Norway. The labour market consists of traditional industries such as fishing, farming and herding, combined with modern industry and knowledge-intensive enterprises, and occupations within the welfare sector.

In this paper, we will begin by reflecting on our own experiences as educational researchers with roots in these rural contexts, and then broaden this into a wider consideration – asking what we can learn from each other to make meaningful, practical improvements to rural education and communities.

Methodological Reflection

We use autoethnographic methodology whereby researchers use their experiences as persons and long-time researchers in a field to explore and analyse a phenomenon (Ellis et al., 2011). The strength of this approach is that it captures the broadness of the phenomenon and assembles different aspects of it in the discussion. This makes it valuable for policymaking and system alteration. The weakness is that the background to the discussion is less concentrated and transparent. It can be too self-centred (Walford, 2009). We are aware of this weakness and we have thus chosen to use publicly available statistical data to enhance the transparency of the knowledge foundation, open it to re-examination, and strengthen its validity. The tables and figures chosen also present high reliability, due to large sample sizes, and the quality of the public statistics is high. The state and the municipalities devote a lot of resources to managing and ensuring the quality of each of the report systems. Another advantage is that these are effective data collection methods, with a minimal environmental footprint or negative effect on informants.

Gry Paulgaard grew up in Honningsvåg at Margeøya, in the county of Finnmark. Geographically, this is at latitude 71 degrees north, on the same island as North Cape, the northernmost point of the European mainland. During her nine years at primary and lower secondary school, her school class had ten different teachers, with the majority coming from the southern part of Norway. Most of the local people working as teachers did not have formal teacher training. When she finished compulsory school, there was no upper secondary school in the area. She had to leave home at the age of 15 and attended upper secondary education (gymnasium) in Kirkenes, near the Russian border. The distance from Honningsvåg to Kirkenes is 502 km. Commuting on a daily basis was not possible. Even though moving away from home at this young age spurred feelings of freedom being away from parents, particularly in the first month, over time it became less and less appealing. After the first year, she left upper secondary education, as did her two cousins of the same age. Gry returned home to Honningsvåg and stayed there for one year, working as a shop assistant. This was quite unappealing in the long run, so at the age of 17, she moved to Tromsø (a central city in Northern Norway) and continued her upper secondary education there. In Honningsvåg, as in many other coastal communities, for generations the local labour market has offered young people an alternative to formal education (Corbett, 2007; Paulgaard, 2017).

Less than half of the pupils from her lower secondary school class continued to upper secondary school. Upper secondary education was not necessary to get a job. Today, this has changed, and education is far more important. The change in local opportunities in these rural areas has inspired much of her research. Her scholarly interests include the geography of education, the importance of the contextualisation of educational research, the globalisation and uneven development between centre and periphery. She is particularly keen to examine how young people growing up in northern areas live their lives and experience their opportunities for education and work, and the choices and the lack of choices they have.

Merete Saus grew up in Indre Billefjord, only 130 kilometres from Gry. While this might be viewed as a long distance in many parts of the world, we consider this to be equivalent to close neighbours in rural Finnmark. This is a village with a Sámi, Kven/Norwegian Finnish and Norwegian population. Most of the people of the village are a mix between all three language and ethnic groups. Her school story is similar to Gry's – changing teachers, with many staying for only one year, leaving the pupils with lots of replacements and upheaval. To attend upper secondary school, she had to move to Alta at the age of 16, two hours' drive from her hometown. Knowing that these years lay ahead made her direct her attention outwards, seeking arguments for leaving, not staying. Later, as a young student in Tromsø, she reflected on how the school's situation, and the lack of opportunity to attend upper secondary school, was indeed an infrastructure to guide her away from her rural home village. She wrote a student paper in her first year at university based on her experience from her home village and used her knowledge of the village to count the total number of adolescents between 16-25 who still lived there. From this she understood that the education system functioned as a driving force, pushing young people, and especially women, away from the village, never to return. Another epoch-making event for her was being young during the "Altacase". This is the name of a political process from 1968 to 1982 against the construction of a dam on the Alta River – the river between Kautokeino and Alta. The first plan for this project was to flood large areas of reindeer grazing land and the Sámi village of Máze. This gave rise to powerful resistance, based on Sámi rights, reindeer herding and environmental protection. The awareness of Sámi rights that this process nurtured came to guide her values and choice of research field, as it still does. These two experiences – how the education system created infrastructure that made her believe she wanted to escape from her hometown, and the negative attitude towards and treatment of the Sámi people and minorities, provided her formative background for the discussions in this paper.

Universalism in Education

Education is a main pillar of the Nordic welfare system, important for ensuring "*social justice by providing schooling of high and equal quality to all citizens regardless of social class, gender, ethnicity or geographical origin and location*" (Lundahl, 2016, p.4). This education model highly values equality, inclusion and all-embracing social community. Despite this, the educational systems in the Nordic countries, as well as other countries, are based on national standards for both curriculum and educational practice for pupils and students. Several scholars have criticised this centrally-governed education system, based on a high degree of unification, as downplaying the existence of differences (Seeberg, 2003; Stenseth, 2023).

In this paper, we focus on two forms of universalism: i) the metrocentric norms and goals of the curriculum and the educational system, and ii), the implicit expected completion timelines within an age-segregated social order (Lødding & Paulgaard, 2019; Vogt, 2018). Metrocentrism is when urban settings are seen as "*ubiquitous, globalised and undifferentiated*", based on urban standards, leaving out cultural, spatial and contextual differences disguised as "*equity*" (Cuervo & Wyn, 2012, p. 1; Farrugia, 2014). The implicit expected timelines within an age-segregated social order, and norms for rapid completion of education, mean that career paths are generalised, and the existence of diversity can be overlooked and devalued. The age-segregated social order also

universalises experiences based on structural distinctions, such as between education and work. Such distinctions are not applicable for many young people today, since they both work and go to school (Farrugia & Ravn, 2022). When norms for rapid completion of education are generalised as universal career paths, the existence of alternative learning arenas and qualification trajectories are overlooked.

Within such a frame of reference, people in the periphery are thus not coeval others, not actually different people with their own trajectories, history and future; they are just behind in their development. When differences between regions and places are read in terms of stages of advancement and backwardness, alternative stories about the production of poverty and inequality can be erased from this view. The picture is far more geographically complex:

What is at issue is not just openness and closure or the 'length' of the connections through which we, or financial capital, or whatever ... go about our business. What are at issue are the constantly-being-produced new geometries of power, the shifting geographies of power relations. (Massey, 2005, p. 85)

In this paper, we will demonstrate how both forms of universalism play an important role in the overall goals, structures and curriculum within the educational system. The universalisms disguise the importance of place and geography representing changeable and contingent conditions in people's lives, with the result that diversity might be overlooked and devalued. Here, we will point to an alternative story that shows the complexity existing in this rural area today.

Practice in Education

This paper relates the understanding of place to practice (Bourdieu, 1994; Massey, 2005; Simonsen, 2008). Simonsen (2008) describes how places can be seen as a specific articulation of social practices, and of social relations and materiality, as well as experiences, narratives and symbolic meanings. Our focus is to point out that the world of education and work manifests itself somewhat differently in different places. This implies that the opportunities for practice will vary according to where one is situated.

Practice not only reflects local relations congruent with locality in a physical sense. Some of the relations that constitute a place might be characterised by physical proximity at a local level, while others are based on far larger scales and connect the place to other places. Such a conceptualisation of place is highly dynamic, defining place as a specific conjunction of social practices and social relations which have been constructed over time, consolidated, decayed or renewed (Massey, 2005; Simonsen, 2008, p. 16). From such a perspective, it is also possible to understand how external processes and changes are present in local contexts (Massey, 2005; Wenger, 2008). One example might be how national school curricula might not always be in accordance with narratives transmitted through local history. Local narratives, as well as experience, can represent important 'local curricula' gained by growing up in particular areas (Paulgaard & Soleim, 2023).

Practice becomes a key concept in analyses of how place constitutes an important context for learning. According to Wenger's (2008) social theory of learning, practice must be understood as a learning process. In contrast to institutional teaching, social learning is not regarded as a separate activity, something one does when one does nothing else, or stops doing when one does something else. Social learning implies the converse – learning as an integral aspect of everyday life, taking place while one is busy doing other things. By placing learning in the context of social participation, the primary unit for analysis is neither the individual nor social institutions, nor pupils, schools or classrooms, but practice. Wenger (2008) focuses in particular on informal 'communities of practice' that people form as they pursue shared enterprises over time.

Participation in different kinds of practices in different fields, among classmates in the schoolyard or in a work team, is seen as both actions and forms of belonging. According to Wenger (2008), participation will not only shape what we do, but also who we are and how we interpret our practice and ourselves. The concept of participation *“refers not just to local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the practices of social communities and construction of identities in relation to these communities”* (Wenger, 2008, p. 4).

By putting emphasis on people’s everyday involvement and how they give meaning to their actions, practice is located in both time and place within specific historical, cultural and geographical conditions. In this respect, the social theory of learning corresponds to Bourdieu’s (1990) theory of practice and the concept of ‘habitus’, referring to how people’s dispositions are embodied and therefore territorially located. Social learning through different kinds of practice becomes a key feature of the constitution of habitus, i.e. a system of acquired dispositions functioning as classificatory and organising principles for action and evaluation (Bourdieu, 1994). As such, place of residence can be regarded as essential for the constitution of habitus through the ability of social learning within different kinds of practice.

By placing Bourdieu’s concept of ‘capital’ in a broader context, where there is an interplay with ‘habitus’ and ‘field’, it is possible to examine how social learning helps to develop habitus that corresponds with, or differs from, the capital inhabited in particular fields. Several educational sociologists have shown how a mismatch between working-class habitus and cultural capital within the field of formal education influences the educational outcome of pupils (Bourdieu, 1994; Corbett, 2007; Heggen et al., 2003). Success at school is thus explained by correspondence between habitus and the school’s cultural capital, for pupils with middle-class or upper-class backgrounds.

Lack of correspondence between habitus and capital within a particular field makes *“people feel ill at ease and seek to move – socially and spatially – so that their discomfort is relieved”* (Savage et al., 2005, p. 9). One example is the term ‘absence that is present’, developed by the Norwegian educational sociologist Edmund Edvardsen (1998) to address how pupils let their thoughts fly, representing a ‘mental escape’, caused by the lack of correspondence between the habitus of pupils and the social practices, knowledge and value systems in the field of formal education.

Due to improved transportation and communication systems, mass media and social media, opportunities for mobility between different fields of practice and places have increased, both mentally and physically. At the same time, research of youth in different rural areas of the world has documented how many young people are facing a more restricted set of opportunities and options, making them less mobile (Corbett, 2007). Uncertain employment conditions, high urban living expenses, and increasing demands for higher education as a key to labour markets and economic success, influence the opportunities for both geographical and upward social mobility for large numbers of rural young people today (Butler & Hamnett, 2007; Corbett, 2007). The increasing divide between rural and urban areas, and participation in communities of practice within various fields, may produce very different conditions for both learning and doing for people living in different types of places. While some people will face a world of opportunities, others may face a world of limitations.

In order to portray the diversity within the rural area in this northern and Arctic region, the paper is based on a phenomenology of practice that situates practical, embodied consciousness in the world, as an ‘interworld’ in which meaning and materiality are inseparable (Simonsen, 2012, p.15). This makes it possible to focus on the interdependency between cultural, social and material contexts for practice, in order to highlight the diverse diversity that cannot be captured within a one-dimensional narrative and approach.

The Education System in Norway

The education system in Norway comprises kindergarten to school-grade 13, with a legal right for children to attend all grades. This right is granted up to the age of 23, but the ordinary school programme runs from 6-19 years of age, with children moving up one grade each year.

Kindergarten is an integrated pre-school system from the age of 1-5, which is run as a day-care centre with a pedagogical framework and led by teachers with university-level pedagogical training. This pre-school system is optional, and families are given a cash-for-care subsidy if a parent chooses to home-care children aged 1-2 years. However, most parents choose pre-school from year 1, and 93.4 per cent of children aged 1-5 years attend pre-school. This is linked to the high employment level amongst women in this age group (see Table 1).

Up to grade 10 there is a uniform curriculum, with only slight variation between public and private schools. Although there are some private schools, 95.5 per cent of pupils attend public schools, so that close to all pupils have the same curriculum up to the age of 16 (Norwegian Directorate for Education and Training, 2023a). Grades 10-13 represent upper secondary school, with two parallel educational pathways: i) specialisation in general studies, and ii) vocational education programmes. They differ in terms of how much emphasis they place on theory and practice. The first pathway qualifies pupils for university and college and is theory- and discipline-oriented, while the second is oriented toward skilled work, such as health workers, electricians, childcare workers, hairdressers, and joiners. The vocational education programme is closely linked to the profession for which it qualifies. In Norway, there is a “young person’s right” (statutory right for young people) that grants young people up to the age of 24 the right to attend primary and lower secondary school, or equivalent education, as well as three years of upper secondary education and training (The Education Act, Section 3.1). The aim of this law is to prevent unemployment amongst young people.

At a societal level, education is described as one of the “touchstones by which different areas within nation-states compare their performance and their fitness to face the future” (Butler & Hamnett, 2007, p. 1162). At an individual level, education is understood as a form of protection when it comes to the individual risk of failing in the labour market, as formal education constitutes an asset in any labour market in our post-industrial societies. Education may also serve as a buffer against becoming dependent on welfare benefits.

Education is one of the fields in which geographical differences are evident in Norway. For centuries, there have been significant regional differences in young people’s educational careers. Education levels have been lower among populations in rural and coastal areas in the North than in other areas. Butler and Hamnett (2007) examined the geography of education in England. They pointed out that variations in educational provision and attainment are complex social phenomena which lie in the intersection of space, social structure, and social processes. Educational attainment is closely related to social class, ethnicity, and gender. These factors have a key impact on outcomes and are related to the geographical variations in structures of provision and eligibility rules, and to spatial variations in social composition via the segregation of different social groups (Paulgaard, 2017).

The school curricula are designed to give each pupil a school career that leads to qualification for future work or higher education. The curricula are also created to meet society’s need for properly qualified staff, distributed in harmony with society’s and the labour market’s needs and distribution. This is a double mandate for a school system that is governed by the state. It serves the pupils’ need for variety and choice to fulfil their aspirations and desires for their future working lives, and society’s need for a workforce evenly distributed in the local, regional, and national labour disciplines.

Education Quality and the Documentation System

The curriculum for knowledge promotion in primary and secondary education and training is uniform in Norway when it comes to core principles, value base and overall goals. These are formulated as rights for the pupil to achieve their life prospects and participate in society. However, schools' administration and organisation are driven by school tests, both national and international, on the one hand, and the needs of public and commercial industry and management for qualified workers (Heldal, 2018), on the other hand. Attention is not solely on pupils' needs and aspirations, but also on society's needs and aspirations. This has driven the Norwegian school system to develop a quality assurance system to monitor this dual aim.

The quality system is consistent, thorough and comprehensive. The quality criteria are based on centralised quality indicators, derived from education science, and from learning theory. There is no differentiation between school contexts, such as schools in urban or rural contexts, or schools with variation in Norwegian-speaking skills among the pupils. The quality assurance system is run annually, with different assessment systems, both national and international. International tests make it possible to compare the Norwegian school system with international results, both regarding the level of ability in a specific subject and how process and the quality of results develop over time (Olsen & Björnsson, 2018). The Pupil Survey is carried out every autumn for grades 7, 10 and 11, but the school can also choose to run it for every grade from grade 5 up to grade 13. The survey has questions for the pupils. It is mandatory for the schools to run the survey, so the response rate is high. The national survey is another national quality measurement, and is carried out in grades 5, 8 and 9. The purpose is to give the school information about basic skills in reading, numeracy and English, and the information serves as a foundation for formative assessment and quality betterment at all levels of the school system.

The quality and documentation systems used in the Norwegian education system are not only used for quality assessments, but also for targeted measures to enhance schools' quality. A subsidy arrangement has been implemented for direct action to support education programmes at all 13 grade levels to improve betterment processes. The 30 schools that receive the lowest score on multiple test and quality indicators become part of a counselling system. The schools in the Northern Norwegian region are more often enrolled in this counselling system, revealing that they systematically score lower on the national formative evaluations. As such, it is possible to point to regional variations in the differences when it comes to 'the geography of education' in Norway.

A Portrait of Rural Northern Norway and the Education System

Norway is a rich welfare state, with a strong state and municipalities that have authority over most aspects of people's lives, from childhood to old age. Healthcare and social services are free of charge, and there are a low number of private agencies. Furthermore, trust in the government's services is high, so that most people are trusting and non-critical users of these services. One consequence of both the enveloping welfare state and the trusting public is that the government can—and does—hold an abundance of statistics covering most of people's lives and doings. These are mostly accessible at an in-depth level, anonymised and prepared as online information for the public, local policy- and decision-makers, and even researchers.

Based on official statistics, we provide a portrait of Northern Norway and the education system in this diverse rural region. The overall question is how diversity manifests itself in this northernmost county and whether the education system is well-adapted to this rural region?

Geography

Norway is an outstretched country. The largest city, Oslo, is located in Central-Eastern Norway. Northern Norway mainly comprises rural areas and is the lowest-populated area, with around 76,000 inhabitants.

Figure 1: Map of Norway



Note: Map base: Kartverket (Creative Commons Attribution ShareAlike 3.0; <https://kartverket.no/en/on-land/kart/illustrasjonskart>).

Employment

Northern Norway, Western and Mid-Norway have many rural areas, while the South and West mostly have urban areas. Table 1 shows unemployment rates in Norway (Statistics Norway, 2023a).

Table 1: Unemployment Across Different Regions of Norway

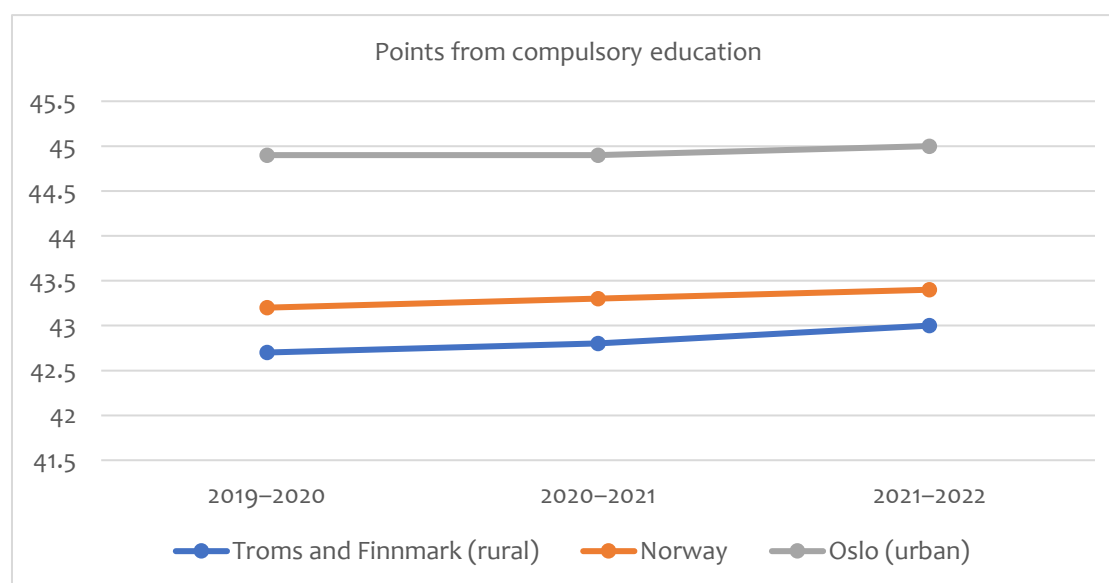
	Unemployment in 2022
Total in Norway	3.3%
East-Central Norway, including the capital, Oslo	4.0%
Inland Norway	3.2%
Southern Norway	3.7%
Western Norway	2.7%
Mid-Norway	2.4%
Northern Norway	2.6%

Overall, the unemployment rate in Norway is one of the lowest in the world (Horge, 2023). According to Table 1, unemployment is at its highest in the central region, with many urban areas, and at its lowest in parts of Norway with many rural areas.

Education

Figure 2 presents the comprehensive qualitative test system in Norwegian education programmes and how Northern Norway systematically scores low in these tests. It shows ‘compulsory education points in primary schools’, a test in Norway administrated by the Norwegian Directorate for Education and Training (2023a). This is a wide-ranging survey that aims to measure the quality of learning at schools in Norway).

Figure 2: Compulsory Education Points in Urban and Rural Regions in Norway



This data was collected from a register of final marks and exam results at student level and includes all pupils from public and private schools in Norway. It provides information about the pupils’ performance on completion of primary school. Higher scores suggest better learning quality. This figure suggests that pupils from schools in Northern Norway score lower marks compared with the national population.

Figure 3 reports four indicators of school quality from the Pupil Survey managed by the Norwegian Directorate for Education and Training (2023b). All pupils are invited to participate in this survey, and the response rate is 86%. The survey enquires into a wide range of factors. The purpose of the survey is to gauge pupils’ opinion of school in terms of learning, well-being and satisfaction. The results are used by the schools for improvement and quality assessments. The survey can be displayed at national, regional and school level and is open to the public in anonymised form. These indicators are measured and compared against all schools every year. Here, we display four of these factors. These four factors are all considered to be important aspects of the school environment in the Norwegian education system, including: pupils’ democracy and participation, formative assessment, support from teachers and well-being (Ogden, 2020).

Figure 3: Indicators of School Quality for Northern Norway and Norway

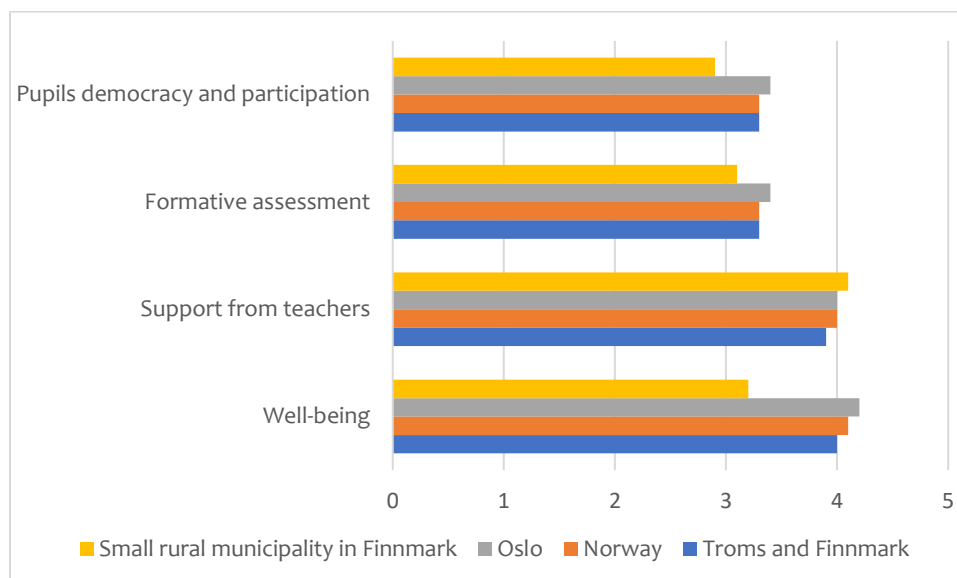
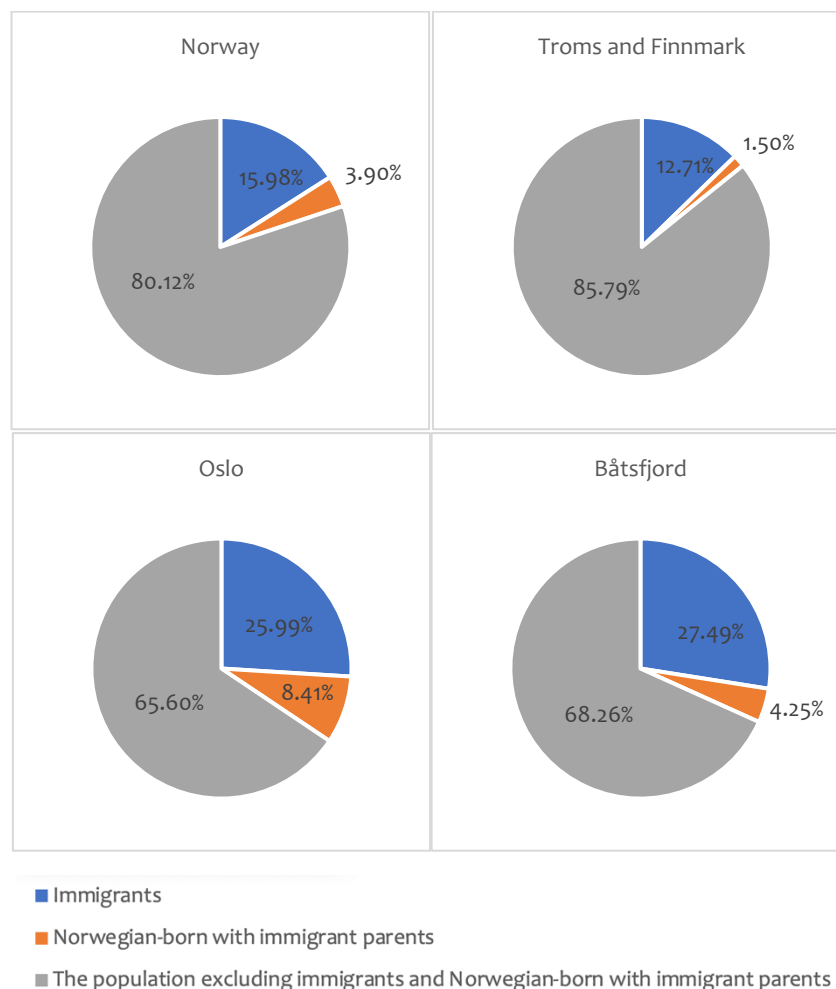


Figure 3 indicates the score by displaying the results from 1-5, where 1 is the most negative and 5 is the most positive. It shows that students in the northernmost county report lower for the same levels of school quality compared to the national level. The difference is not extensive, but does reveal lower scores and systematic differences between the end reports for pupils in Northern rural regions, compared with the national level. This means that the Northern-most schools both score lower than average on academic performance and well-being. Compared to a small municipality in Finnmark, however, the results are less uniform. Pupils in the school in the small rural municipality report low democracy and participation, formative assessment and well-being, but a high level of support from teachers. The low number is considered by the school authorities to be so low that they would probably implement some actions to improve quality. This profile is the case for many small, rural schools.

Immigration

Figure 4 shows that the northernmost counties also have higher numbers of people who have immigrated from other countries (Directorate of Integration and Diversity, 2023). It shows that Northern Norway has a lower migrant population than the rest of the country. The number of people with parents who immigrated is particularly low. The capital, Oslo, stands out from the rest, but we can see that even though the number of first-generation immigrants is lower in Northern Norway, it is closer to the rest of Norway. Furthermore, the trends indicate that immigration to Norway is increasing. In 2022, immigration to Norway increased by 2.4% (Statistic Norway 2023a). This trend also applies to Northern Norway, even though the population in this region is generally declining. Figure 4 demonstrates that even though Northern Norway does not have a high number of immigrants overall, some towns, such as Båtsfjord, have one of the highest levels of immigrants. This is because the fishing industry requires a supply of labour. This displays variation in the rural area.

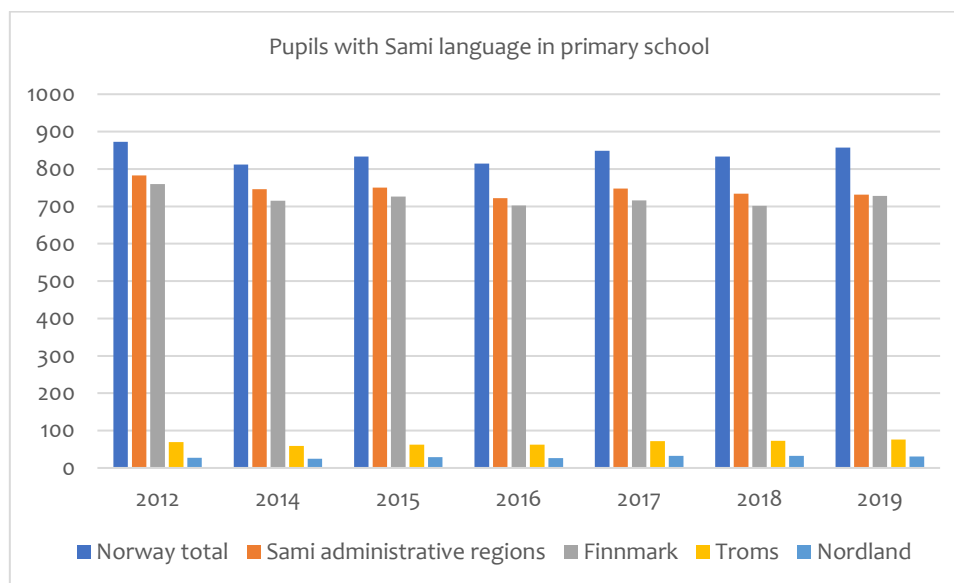
Figure 4: Population by Immigration Category



Ethnicity

Northern Norway is a region of people with diverse backgrounds in terms of culture, ethnicity, language and country of origin. Indigenous Sámi people, Kven/Norwegian Finnish, and the Norwegian population, together with immigrants, constitute a diverse region. It is difficult to define how many Sámi are living in Norway, because it is not permitted to register ethnicity in public registers (Pettersen, 2012), but it is common to estimate 50,000 Sámi living in Norway. Figure 5 offers an overview of the number of children using the Indigenous Sámi language as a learning language in the Norwegian school system (Statistics Norway, 2023b).

Figure 5: Pupils with Sámi Language as a Learning Language in Norwegian Schools



This figure demonstrates how diversity is manifested in the education system and that the Sámi language is an important aspect of education in the rural north, the region where most of the Sámi population live.

Sámi language and culture are included in education in Norway, both in the curricula and as an educational language. In the curriculum reform of the Norwegian school system in 2020, Sámi knowledge became even more integrated into the curricula. However, it is still far from well-integrated, and demographical inequality is still a challenge in the Norwegian education system. The drop-out rate for upper secondary school in the Sámi region of Norway is higher than in the rest of Norway, and is increasing (Sønstebo, 2021). Although most of the children with Sámi as their learning language live in the north, only a few Sámi children have Sámi language in school. Furthermore, the number of pupils with Sámi as a learning language declines rapidly from grade 1 to 10 (Vangberg, 2021).

This portrait is not exhaustive or complete, and supplementary descriptions could be added. However, we have outlined a portrait of a rural region that is not uniform nor one-dimensional, but rather diverse, encompassing complexity and multiplicity.

Discussion

Recognising Diverse Diversity in a Rural and Sparsely Populated Region

Even though Finnmark is a rural and sparsely populated area, like the rest of Norway this Arctic region has a relatively strong economy and the people enjoy a well-developed welfare service. Instead of high unemployment, local communities face a lack of qualified manpower, particularly within the health and education sector, and a lack of qualified doctors, nurses and teachers. Consequently, the region actively recruits employees internationally (Ministry of Local Government and Regional Development, 2020). Due to the Norwegian policy for refugees seeking asylum in Norway, many refugees are settled in rural areas in the Arctic north. Hence, the already diverse society has grown to be even more multifaceted and versatile during the last twenty years. Although immigration is lower than in other parts of Norway, 1 out of 10 people still have an immigrant background The Directorate of Integration and Diversity (2022). Combined with the cultural, ethnic and linguistic diversity due to the traditional presence of the Sámi Kven/Norwegian Finnish, and Norwegian populations, the region is highly multifaceted.

Despite this multi-ethnic and geographically diverse society, schools are still struggling with the traditional unit-oriented curriculum, which ignores the diversity among the pupils. The Norwegian education system is directed towards the pupils' individual education and also plays an important role in dispersion for the labour market.

For generations, the drop-out rates in Norway have been higher in Northern Norway, especially in Finnmark, than in the central areas of Southern Norway. The variations in educational careers between rural areas in Northern Norway and urban areas in Southern Norway have for generations reflected the opportunity structure in the labour market (Paulgaard, 2017). This is one example of how practice is related to the manifestation of the world of work and education, which is manifested somewhat differently in different places.

From this perspective, it is possible to claim that in the rural and sparsely populated region, drop-out from upper secondary schools has not always been merely a problem for the person themselves. As we have seen in the portrait of rural Northern Norway, this might not necessarily mean that the person does not gain access to work that gives stability, both economically and in terms of life conditions. This may show how many young people follow other qualification trajectories than one based on normative deadlines and distinctions between education and work. However, when metrocentric norms for rapid completion of education are applied universally, alternative pathways and trajectories can appear as unproductive, unimportant and even deviant and stigmatised.

Huge attention has been given to drop-out rates from Norwegian education, among both politicians and educationalists. Specialised public and private employers have also expressed concern about high drop-out rates because they need skilled and qualified labour to solve challenges in society. However, the sparsely populated Finnmark region does not have resources to run upper secondary schools in every village. In fact, there are only ten upper secondary schools in this region, eight Norwegians and two Sámi. Therefore, many adolescents aged 16-19 have to leave home and live in a dormitory, in order to attend school. One young man, aged 17, from this Northern region had to leave home to attend upper secondary school. He was interviewed in an earlier study (Paulgaard, 2017, p. 5), and described how he blamed himself for not adhering to the normative deadline within upper secondary school:

When you move from home to live on your own, you do not have parents who are there to push you and get you up in the morning and go to school every day, so often you just stay at home (...). I should have done better. It is my fault, no-one else to blame – you have to take responsibility for what you do. I did not put priority on school. I was simply unable to.

This young man blames himself for not observing the 'cultural age deadlines'. He recognises that he deviates from the growing demands of formal education, prescribed by the universal age norms and youth trajectories. In this case, the structure of upper secondary schools in this area results in unequal opportunities for those who have upper secondary education available in their home area, and for those who do not and have to move away from home. Yet in this case individual explanations are given for the unequal structure – he blames himself for not doing better at school. This illustrates how uneven and undiversified the school system is experienced to be by the young people of the rural North. It reflects the narratives they are told. Below, however, we will give a portrait of a diverse and versatile rural region that does not correspond to the one-track option that the young man in these interviews feels that they are left with.

For many of them, like the young man referred to in this citation, moving from home can be challenging. It is not only important to keep up with schoolwork, get good grades and manage time for studying, but also to take care of everyday tasks, such as making dinner, buying groceries, and finding time for leisure activities and housework. This is challenging for young people, and many find the demands difficult to meet.

In addition to living in a new place, for some students the move from a village in one part of the county means a move from one cultural environment to another. Sámi adolescents who move to attend a Norwegian upper secondary school can find themselves living alone in a town where the attitude towards the Sámi minority is less tolerant and more negative. This is a common experience to which one of the popular young Sámi artists has given a face (Batalden & Thomassen, 2019). This puts an extra strain on the pupils' school attendance. Based on a universalised framework that disguises important diversity among young people, this kind of experience and practice can be overlooked, devalued and stigmatised.

The challenges of 'dropping out' by leaving upper secondary education are solely treated as problematic, and the contrastive aspect is not taken into consideration. For example, dropping out of upper secondary school is merely treated as a challenge in the northernmost rural region of Norway, without considering that many of the adolescents who drop out from school might gain well-paid work in service, industry, fishing, or aqua- or agriculture, and some take further education at an older age.

Valuing Diversity in Ideology in the Educational System

The metrocentric approach is fundamental to how modern societies have been understood, both in social theory and in popular imagination (Farrugia, 2014). Place and location have been linked to the past stability of 'pre-modern societies', whereas the present situation, characterised by unfettered flow and mobility, annihilates the value and purpose of place. This notion has commanded an important position in theories of modernity and social change, where modernisation is described as a process of urbanisation in which rural ways of living give way to an urban modernity (Farrugia, 2014). The geographer Doreen Massey (2005) characterised such "*evolutionary assumptions' as the 'convening of contemporaneous geographical differences into temporal sequence', transforming the increasing inequality between different geographical areas into a story of 'catching up'*" (p. 82).

The core values of the Nordic education model are equality, inclusion and all-embracing social community (Lundahl, 2016). Despite these values and policies, the educational systems in the Nordic countries, as well as other countries, are based on national standards for both curriculum and educational practice for pupils and students. This corresponds with the two forms of universalism we addressed earlier in this paper: the metrocentric norms and goals of the curriculum, leaving out cultural, contextual differences disguised as 'equity', and the implicit deadlines within an age-segregated social order.

When norms for rapid completion of education apply because universally-oriented career paths are generalised, the existence of diversity can be overlooked and devalued. Critical discussions of values in education models and curricula are important to discover and open "*Invisible Fences*" (Gullestad, 2002), to create social justice for a diverse variety of rural youth, types of knowledge and career paths.

When the education system is not available in the adolescent's hometown and does not have an embedded multi-ethnic society, it will be exogenous and appear to be foreign. Despite society's diversity, the education system has not embedded this thoroughly in either the education system or the organisation of the system. Young people having to move, both in terms of place of residence and culturally, is not fully addressed in the quality assurance system used in the education system. Today's young people are still taking the same paths as the authors described for their own lives. Faced with the knowledge that they will have to move from their hometown to attend upper secondary school, it is logical that youth adapt their attitude to make sense of this. As a consequence, these pupils tend to adopt the idea that either their hometown is the wrong place, or the school is the wrong institution.

Conclusion

We conclude this paper with a call to include a rural perspective in the curriculum that recognises and values complexity and diversity in sparsely populated, yet vigorous societies.

We have reflected on our own experiences as educational researchers with origins in these rural contexts, and then broadened this into an overall consideration – asking what we can learn from each other to make meaningful, practical improvements to rural education. We have provided a portrait of a rural county in Northern Norway that has embedded diverse diversity, a place that cannot be described using a one-dimensional narrative. We argue for an understanding of rural regions that includes the variations. Being rural is not equivalent to being uniform, but can be a vibrant society with contrasts and juxtapositions. Furthermore, we argue in favour for education as a system that reflects the broad diversity of the pupils' lives and places. When the education system is centralised and universalistic, it must also include systems that allow the schools to contextualise the curricula. Instead, the Norwegian education system has developed an advanced arrangement, with national and international tests that do not take any contextual factors into account. The result is a circular argument whereby the schools receive low rankings based on universalistic, but unrealistic quality measures. Indeed, their students get low grades in schools that are universalistic and not contextualised. Since the schools get low rankings, they are supervised according to universalistic approaches. In this circle, the belief in universalistic approaches is unquestioned and upholds the circle, causing the school quality rankings to decline even further.

Based on this study we suggest a rural education perspective that takes location into account and emphasises the contextualisation of the curricula. The national curricula must accommodate and encompass the actual lives and multiple trajectories of pupils, and not be based on universalisms leaning on the linear understanding of one story, one world, everywhere. We will always argue against the principle of the same story everywhere and call for a rural education curriculum that is contextualised and can encompass diverse diversity.

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Local Knowledge Integrated in Learning Experiences: The Case of Schools and Communities from Rural Border Regions of the Mainland Portugal

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Abstract

Development, smartness, and equity are often defined through cosmopolitan perspectives. Schools and communities from rural regions in Portugal must develop additional measures to compensate for structural disadvantages. These measures often serve to achieve urban models and standards with which comparisons are made. This article explores rural schools and community leaders' strategies to integrate place-sensitive knowledge into their students' educational experiences. These place-based approaches are developed against the erosion of local knowledge and may contribute to broadening a perspective on development, keeping schooling still accountable to local contexts. This contribution grounds on a national-level study on young people growing up in border regions, their schools, and communities' resilient approaches, and draws on semi-structured interviews conducted with schools' head teachers (N=38) and policymakers from municipalities (N=36). The study took place in all 38 municipalities of Mainland Portugal that border Spain. Findings indicate that the majority of schools and municipalities cooperate to promote the best conditions for students' school success, developing strategies that acknowledge communities as a resource and as curriculum, while meeting national-level demands and students and families' expectations for high performance on national-level standardise exams. Other strategies include the incorporation of local knowledge into various learning experiences, in which students are co-creators and active participants and local-based subjects focus on local sustainability and development, environmental challenges, preserving traditions, heritages, and patrimony. These topics are often explored in the context of citizenship education, non-formal education activities promoted by schools or the community, or in purposeful and structured projects. Although schools from rural border regions recognise the national policy of curriculum flexibility as an opportunity to incorporate local knowledge they do not fully benefit from this opportunity.

Keywords: *rural schools and communities; place-based education; local knowledge; curricular flexibility*

Introduction

In Portugal, there is a saying that “*when a school closes, a village dies*”. Schools are a resource for the broader community and the territory, and they are a strategic context to discuss and solve social problems, acting as civic and cultural spaces with implications for local development, community purpose, and sense of belonging (Amiguinho, 2005; Budge, 2010; Schafft, 2016). Although rural schools have been shown to add social, cultural and economic value, and their disappearance may contribute to the decline of regions, a narrative of the role of education as a response to global needs has implications for the expectations of young people and families, and for educational practices that focus on preparation for standardised tests and devalue the role of schools in community development and well-being (Schafft, 2016). In this process, schools came

to be understood as detached from place, which Schafft describes as “*an educational system that is not only less ‘accountable’ to local places but, in many instances, one that further spurs rural youth out-migration*” (p. 138).

The devaluation of place is part of the contemporary narrative, especially of education policy, which usually refers to the needs of the global economy and the characteristics of the workforce to meet those needs, i.e., to be mobile, and which limits the purpose of schools to the preparation of a global workforce detached from place (Budge, 2010; Gruenewald, 2003a, 2003b; Peters, 2012). In this scenario, schools are understood as contexts in which students and families are treated as consumers, and a centralised curriculum serves the purpose of producing the most appropriate human capital (Schafft, 2016). The discussion about the value of integrating local/community-based knowledge, in this case very much related to rural knowledge, into the curriculum is relevant when schooling often focuses on academic skills where this knowledge and place sensitivity are undervalued (Shamah & MacTavish, 2009).

The use of the terms place and space deserves comment. In this paper we assume, as others have before us, that place matters (Massey, 1994). Given the debate about space and place, we assume that “*space without human actions and attachments has no significant meaning*” (Timalsina, 2021, p.178). We will use the concept of place as the result of lived experience, the interaction between people and space, cultures and practices impregnated with human meaning and significance (Tuan, 1975). Based on this understanding of place, we will discuss the value of place-based education that considers that place influences individuals’ interpretations and worldviews (Timalsina, 2021; Campbell, 2018).

This article examines rural schools and community leaders’ strategies to integrate local knowledge into their students’ educational experiences, teaching and learning practices, and curricula. This study involved semi-structured interviews with school leaders and policymakers from all 38 municipalities in mainland Portugal that border Spain. We want to address two objectives: first, how local knowledge is used for educational purposes; second, what kind of local knowledge is integrated into educational experiences and curricula. This analysis considers that since 2018 Portuguese schools have had the autonomy to develop up to 25% of the curriculum. This can be an opportunity to promote place-based education and knowledge that connects students to their communities and values their role as responsible citizens. We believe that these regions place additional demands on educational leaders who must be prepared to respond to the specificities of the context and the expectations of educational quality (Halsey & Drummond, 2014). If school and community leaders are conscious of place, they will be more sensitive in deliver policies and practices that address inequalities and promote quality education and youth development.

Curricular Flexibility and Integration: The Portuguese Regional Context

As part of a process of decentralisation of education, Portuguese schools and school clusters are granted autonomy to develop and implement 25% of curricula in the form of local and school-based curricula through Ordinance No 181/2019 of 11 July 2009, regulated by the Decree-Law No. 55/2018 Curricular Flexibility and Autonomy. While this differs from some other countries, such as Finland, where a local curriculum is designed around the national curriculum, which serves as a framework (Autti & Bæck, 2021; Vitikka et al., 2012), this education policy opens the possibility of integrating local knowledge into the core curriculum and achieving its goals and learning outcomes. These measures aim to add another layer of meaning to learning by fostering students’ connection to their living ecosystem and local specificities while learning. These goals have been the subject of debate among scholars who see these policies as promoting an inclusive school that can contextualise the standardised curriculum with schools’ priorities and redefine the role of the school as a place of decision-making (Leite & Fernandes, 2012). This instrument gives schools the opportunity to develop a project in which they can incorporate local

and site-specific content involving relevant stakeholders such as families, local associations, and municipalities. Schools and communities have the responsibility to independently design part of the curriculum, which is in line with the concept of curricular contextualisation:

[T]he use of curricular contextualisation is advocated together with the need to adapt curricular contents considering different practices, the development of teaching and learning strategies based on or developed from local, social, cultural, or individual aspects.
(Fernandes et al., 2013, p. 422)

Through this consideration of context in the teaching and learning of both the standardised and local curriculum, children and young people are expected to develop high-level competencies that benefit from contextualising knowledge. The development of these competencies considers the social, cultural and economic context in which schools and students are involved.

Although the implicit aim is to strengthen the autonomy of the school community—students, teachers and school leaders—the conditions for managing change and this new level of autonomy are different. Decentralising decision-making to schools can be difficult to manage if some conditions are not guaranteed. For example, the alignment between local priorities and national policy guidelines. A literature review by Jane Preston and colleagues (2014) on the common challenges rural school leaders face explored the difficulties of developing curricula and meeting the needs of the local community. Aware of the challenges of this education reform, the official programme at the State level offered special training for school leaders to provide them with strategies for designing and implementing the project and engaging various stakeholders, such as municipalities. Policymakers were aware of the crucial role of school leaders, a position that is consistent with the OECD (2018) report on the implementation of this policy in Portugal. The report highlights that “the success of this initiative may depend on a strong and efficient investment in teacher and leadership skills” (p. 22). Furthermore, if “schools will need to be designed so that changing is considered an ordinary activity” (Leithwood et al., 2003, p. 26), school leaders and teachers are key actors in planning future scenarios.

There are several challenges associated with this policy: Aligning examinations at the national level to the “development of new pedagogies and forms of assessment that promote active learning” (OECD, 2018, p. 33); negotiating and developing strategies for networking with the community and regional schools; and redesigning the school project and engaging different people from the school and the community for a common goal. In addition to these challenges, schools in vulnerable areas such as border regions and rural areas in mainland Portugal already face structural challenges. Less economically developed, more depopulated, with fewer educational, employment and recreational resources and opportunities, school leaders have several contextual factors in hand that are quickly channelled and felt in the school. Schools and their communities respond differently to these contextual factors. Implementing local curricula through the curricular flexibility agenda has been challenging because it requires changes at the management level of schools as well as knowledge about how to develop curricula to make learning experiences meaningful for students from diverse backgrounds and lifeworlds and to address local needs (Leite & Fernandes, 2012; Leite et al., 2018). Underlying the process of recontextualising and situating the curriculum allows schools and their teachers to take a leadership role. As considered by Leite and colleagues (2018, p. 437):

Teachers can have an active role in educational change by assuming their part as curriculum makers, namely by designing curriculum processes that are more in line with the characteristics of the contexts in which they teach and of the students being taught.

In this context, research has explored resistance to this form of work on curriculum integration. In the Australian context, for example, authors have pointed out that it is important for teachers to “reclaim their role as ‘curriculum workers’, beyond that of ‘curriculum deliverers’” (Mockler, 2018, p. 130). Although there are clear limitations to curriculum integration and its recontextualisation

(Leite et al., 2018; Mockler, 2018), particularly because there is a tension between the benefits of this integration and the requirements associated with national examination performance, this is seen as beneficial to students' development as citizens. This tends to be more evident in schools that are necessarily responsive to local needs, such as schools in rural areas and could explain why we find several indicators of place-based education that are part of school and community practices and go beyond the curricular flexibility contained in the 25% of the curriculum. Schools and communities aware of students' disadvantages, schools and municipalities, given their role in rural areas, have long developed strategies, sometimes as compensatory measures, to integrate local knowledge into the educational experiences of their children and young people. Although schools and communities are active players in this process, their ability to integrate local knowledge into learning may depend more on the culture of the context and the way it shapes teachers' agency than on individual agency alone (Priestley et al., 2015).

Theoretical Framework

Development, smartness, and equity are often defined through metrocentric perspectives (Beach et al., 2019). Typically, success is associated with indicators and competencies usually associated with an urban setting. Schools and communities from rural border regions in Portugal are often forced to develop additional measures to compensate for the structural disadvantages of these regions. In many cases, the measures serve to achieve urban models and standards with which comparisons are made. In this sense, schools in many contexts have lost connection with their local networks and constructed their relationship with valued knowledge (centralised curriculum) instead of local life and ecosystem (Corbett, 2007). In another paper, Corbett (2010) points out that the disconnect between the local and the global can lead to "*place-based tensions for rural students*" (p. 223).

The process of rural peripheralisation (Schafft, 2016) can lead to a devaluation of rural lifestyles and rural populations, and schools, as conscious or unconscious carriers of this message, can contribute to young people leaving rural areas and condemn these regions to greater depopulation. In addition, those who stay tend to be less educated and older, contributing to rural shrinkage (Brown & Schafft, 2011). Families willing to invest in their children's education may view local curricula based on local knowledge and learning with suspicion, as they do not prepare the young population for further education. Rural contexts are associated with places that one must eventually leave to pursue a better life, and leaving is not only an imperative but also a social distinction (Silva et al., 2021; Corbett, 2005, 2007, 2016; Corbett & Forsey, 2017). Although there were and are youth journeys influenced by this model (Corbett, 2007), there is evidence that schools and other local institutions value local knowledge and connections that equip young people with skills and place sensibilities that deserve attention. This is reflected in the willingness of young people to return after leaving school because of the quality of life in rural places (Silva et al., 2021).

Local knowledge (Ellen, 2002) refers to a collective, shared understanding that influences how individuals make interpretations and has been considered in community development and to inform grassroots intervention models (Wilson, 2015; Dawar & Farias Ferreira, 2021). In this sense, integrating a local meaning into the curriculum or learning experiences, without exoticising it, can promote student engagement in school.

Schools, especially rural schools, and their communities are not placeless; they value local education and its role in the sense of belonging and seek to reconcile local and global aspects in learning practices by doing what Corbett (2016) calls "*challenging the hegemony of the placeless and abstracted neoliberal vision of education's aims in late modernity*" (p. 270). These strategies of resistance to the devaluation of the interior and rural life can help broaden the development perspective and ensure schooling as still accountable to local contexts (Schafft, 2016). Schafft believes that if schools are a vehicle to produce a workforce that can respond to the globalised

and placeless market, then the education system is “less ‘accountable’ to local places” (p. 138) and contributes to young people not considering staying or returning. Similarly, the late choreography around rurality and digital nomadism seems to be another refreshment of neoliberal trends that capitalise on nostalgic views of rural regions and enhance the value of these regions by adding value through a globalised view and trendy cosmopolitan marketing of lifestyles.

By giving centrality to place, schools, especially rural schools, are less contexts that function as “factories producing human capital for export” (Schafft, 2016) and more contexts that are sensitive to local communities and local educational priorities while having to deal with a specific centralised mandate (Preston et al., 2014). As Hass and Nachtigal (1998) wrote in the late 1990s, “When schools are disconnected from specific places and life in communities, they cease to be public institutions, serving the public good” (p. 13). Moreover, schools that are place-conscious (Somerville, 2010) favour a portrayal of students not as passive recipients but as relevant actors in the development of their regions, which is in some ways a controversial assumption, as it places the responsibility for the survival of the region on those who stay or return.

The recognition that there is added value in cultivating permeability between schools and their local environments is not new, and we can go back as far as *The School and Society* by Dewey. In the late 1980s and 1990s, interest in the importance of place in education was evident in several contributions (Hass & Nachtigal, 1998; Nachtigal, 1997; Sobel, 1997). They were usually accompanied by a critique of an increasing neoliberal trend towards the standardisation of education, in general, and of the curriculum which heralded the danger of a disconnection between schools and their contexts.

Evidence of a growing interest in connecting education to place, locality and community, and the interest in connecting learning to the ecology of students, fundamental since the contributions of Paulo Freire (2004, 2014), has gained renewed attention during school closures due to the pandemic (Yemini et al., 2023). In the last two decades, the development of an approach to education that focuses on place has been referred to by some as place-based education (Smith, 2000; Smith & Sobel, 2010; Sobel, 1997, 2005, 2014). Others speak of a critical pedagogy of place-based education that corrects a romantic view of place and community (Gruenewald, 2003a; McNerney et al., 2011). This view results from a convergence of critical pedagogy and place-based education. Other contributions along the same lines refer to critical place-based pedagogy to address, for example, indigenous knowledge and place-based literacy (Somerville, 2007, 2010) or refer to community-based schooling (Smyth et al., 2008; Theobald & Curtiss, 2000). Common to all these perspectives is the value given to place, which translates into experiential, contextual and community-based learning (Yemini et al., 2023)

Authors such as Gruenewald (2003a, 2003b), Gruenewald and Smith (2008a), Hawkins (2014), Somerville (2010) and Soja (2000) have proposed a theoretical framework for place-based education and discussed how place-based education could keep pace with the global age by suggesting that more attention be paid to the relationship between schools and communities and the value of the local as a central factor in learning. Other literature has highlighted the value of community-based knowledge within a community-as-curriculum philosophy (Sharkey & Clavijo Olarte, 2012; Sharkey et al., 2016). Although there are also criticisms of local curricula, for example, when they fail to link place-based education to global issues, a discussion is taking place that highlights the paradoxical problem of a strong sense of locality amid global challenges (McNerney et al., 2011). As Margaret Somerville (2010, p. 331) suggests: “Place also functions as a bridge between the local and the global. Without an intimate knowledge of local places that we love there is no beginning point. Without a concept of the local, action is not possible.”

This perspective does not disregard the curriculum at the national level but understands the contexts in which the school, the students and their families are situated as funds of knowledge.

In this sense, place can be a framework for an integrated curriculum (Somerville, 2010). To include local knowledge as a resource of the curriculum in learning is to purposefully develop situated learning and provide an alternative to educational processes that are regularly “*isolated from the immediate context of community life*” (Gruenewald & Smith, 2008b, p. xiv). In this context, the concept of place-based knowledge (Corbett, 2007) seems useful to better understand how schools reconnect with place and foster an appreciation of experiences that are part of students' lives. Their knowledge can be the basis on which it is possible to build a meaningful relationship with the content of the standardised curriculum.

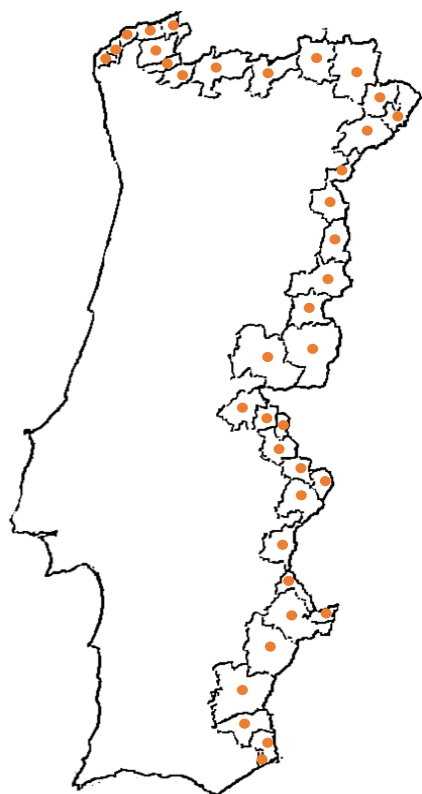
In close connection with place-based knowledge, place-based pedagogy has been discussed as the one better suited to connect local knowledge into a more meaningful curriculum (Sharkey et al., 2016; Smith, 2000; Smith & Sobel, 2010; Sobel, 2005). Learning cultures anchored in local contexts avoid standardisation of learning and knowledge, raising awareness among students to local phenomena and strengthening a sense of community and responsibility rather than abstract learning. Integrating local and rural knowledge into learning gives students the indication that there are connections between what they are learning and their lives and ecologies. Place, in this respect, is seen as a mediator of meaning-making, as Margaret Hawkins (2014) argues in her theory of ontologies of place in education. She explains that students' understanding of global connections is shaped by place and their situated experiences.

The Study

This article reports specifically on strategies for integrating local knowledge into students' educational experiences developed by schools and communities in thirty-eight rural border regions to address place-based inequalities. This study is part of a larger funded research project developed at the national level using a mixed methods research design (2018-2022): “*GROW:UP – Grow Up in Border Regions in Portugal: Young People, Educational Pathways and Agendas*”. The study was conducted in all Portuguese municipalities bordering Spain (n=38; Figure 1), mainly known for their economic, social, and educational constraints. The project's focus was to study the resilience of schools and communities to support young people and to study the sense of belonging to the school and community (Silva & Silva, 2022, Silva et al., 2022). Methodologically, the project included a survey of 3968 9th-12th grade young people growing up in border regions; interviews with school and community leaders (N=76) of those schools and municipalities covering all border regions contexts; case studies (n=5) with biographical interviews with youth (N=50); development of projects for their communities through participatory methods; focus group discussions with young people (N=10) and youth associations (N=5); and interviews with significant adults indicated by young people (N=5).

The approval to conduct the research was obtained by MIME (School Context Inquiry Monitoring - 0566300001) of the Ministry of Education.

Figure 1: Map of Portugal Indicating the Contexts of the Study (prepared by author)



The data presented and discussed in this article come from semi-structured interviews conducted with school leaders (N=38) and municipality leaders (N=37) who are responsible for education and youth policy at the municipality level. Thirty-eight school clusters were selected, one per municipality on the border with Spain, and all the head teachers were interviewed. As for the municipality leaders, we selected one policy maker (either for education or youth) per municipality and interviewed thirty- seven out of thirty-eight.

The interviews were conducted on site. This type of interview was used to gain better access to the knowledge, values, experiences, and respective meanings of the participants. Questions aimed to explore school and community leaders' perspectives on young people and educational pathways, youth cultures, policies and practices, and networking strategies between schools and communities for youth development. The analysis of the qualitative data was mainly thematic and supported by a software and involved the identification of emerging themes. The key themes facilitated the coding process. We specifically focused on one key theme: cooperation strategies among schools and communities to enhance education quality and, specifically, on two sub-themes (i) the integration of local-based knowledge into the curriculum and learning experience; (ii) local collaborative strategies for developing place-based education. Findings are based on the interpretation of this emergent sub-themes.

Findings

Community as a Resource: Cooperative Learning Experiences

Schools, especially in rural areas, are not detached from place. Although we are wary of defining rural areas as deviant through metronormative framing (Roberts & Downes, 2019), many problems and challenges are geographical, such as depopulation, population ageing, out-migration and the associated social and economic structural inequalities (Silva & Silva, 2018). In this context, municipalities and schools are central actors in the education system and are understood as cooperative actors, especially in rural areas with less infrastructure and public services. Understanding the community as a resource enhances teaching and learning practises

by incorporating new educational experiences developed in the community. The following case, which could be criticised for not being fully planned, is an example of how the boundaries between inner and outer school are challenged by the integration and awareness of out-of-school learning experiences in the curriculum.

Today we are going to participate in an activity that has to do with citizenship education. A few years ago, I would have said to a teacher: look, on Thursday, you must go with your class to the Cross-border auditorium because they will participate in an activity organised by the municipality. The teacher would normally say, "I cannot. I have a curriculum to follow. I have a curricular programme to follow. Today we say, "Listen, can you take your class?" and the answer is, "Okay, okay. How is it? Is it citizenship? All right, it's good to prepare it". The teacher I spoke to is a philosophy teacher, and she will incorporate what they will learn outside school into the philosophy curriculum. There is already flexibility in the teachers' way of thinking. Education is not just about the formal curriculum and already has a much wider scope. (School, South)

When schools purposefully promote community-oriented practices, i.e., with intended learning goals, they encourage academic experiences that can contribute to school success. Indeed, schools and communities in general are aware of the need to provide students with the best possible and most diverse educational experiences they can. At the same time, they strive to meet the requirements and outcomes. Schools seek to meet the expectations of students and their families for high performance on nationally standardised tests while incorporating local knowledge into diverse educational practices. An example of such practices are the strategies that schools develop with municipalities to create bonds with the region by developing place-based programmes. By doing this, they are shifting from an approach that ignores local knowledge to meet national and global educational mandates, that would negatively impact their regions, to place-based pedagogies that could contribute to local viability, development, and sustainability in the medium and long term. The following quote is an example of strategic investment by municipalities in different types of educational provision linked to place:

We [the municipality] make our activities plan together with the school and the vocational school where the children participate in activities that are organised and paid for by us, and we try to make sure that they are all related to our territory. There are activities with Casa das Artes [House of Arts] in the municipal library, different activities that we help them with. (Municipality, North)

We have a vocational school in the field of agriculture. It is a very well-equipped school, the Rural Development Vocational School. It is a school that has a number of students, not only from the municipality. Because of the potential that the Alqueva Dam brought for agricultural development, this school has benefited from this project. (Municipality, South)

These strategies are based on an awareness of place and an understanding that challenges and opportunities are spatially distributed and influence students' educational pathways. In contrast to the belief that schools in these places often contribute to a narrative that disconnects young people from their regions, we found efforts that encourage young people to study in other regions while fostering community ties that resist to rootlessness (Gruenewald & Smith, 2008a). The literature suggests that investing in place-based education and connecting learning to local experiences and knowledge brings benefits to students and communities (Clarke & O'Donoghue, 2017; Corbett, 2010; Gruenewald & Smith, 2008a).

Here, in the school, we organise Cultural Days every year. Now it's about the community bringing cultural activities to the school. In the beginning, we did the activities ourselves. Now we are at a moment where we want the community to bring activities to the school. (School, South)

Schools are aware of the benefits of investing in the development of place-based education, not only in terms of social and cultural competencies and psychological benefits and community engagement (Shamah & MacTavish, 2009) but also because they connect more positively to learning in school. Moreover, experiencing community as curriculum (Sharkey et al., 2016) enhance students understanding about how to approach real-life problems. The following excerpt shows students participating in community-based fieldwork to learn a specific topic:

In general, they are students who like the practical part a lot. So they are the ones who develop the projects. At the moment, for example, we are creating a model about fountains. They have chosen the theme of water and have researched fountains in parishes. And they have looked at how to build a mini water pump to make a closed circuit. So, they are the ones who will look for it. And because they do that, they manage to get into physics and chemistry classes and explain perfectly what was done and how it was done. And without realising it, they have learned exactly what the teacher wanted them to learn. That is the intention. (School, North)

By conducting small-scale research in their communities and by developing a practical project, teachers and students engage with the content of the curriculum by using local knowledge. Students are “intellectual resources for their community” (Gruenewald & Smith, 2008b, p. xvii) and contribute to curriculum development. This type of journey gives students the opportunity to change their relationships with their schools and their communities, but also places them in the role of knowledge producers and problem-solvers rather than just as consumers. Furthermore, this pedagogical strategy promotes critical thinking and autonomy and develops appreciation and recognition of their context.

Previous research has highlighted place-based education as a model that “integrates young people’s existing knowledge of place while promoting traditional academic skills” (Shamah & MacTavish, 2009, p. 3). Developing projects around community-based interests that incorporate local knowledge activates learning skills that enable students to relate differently to the national curriculum content. The following case refers to a project in which students learn about normal curriculum topics and how they are relevant to their living environment.

We have another project called “Sharing with Energy”, a project in partnership with EDP (Energies of Portugal company). We have here the Miranda do Douro dam. So, these projects deal with other issues, such as health, the environment and sustainability. (School, North)

These examples show how schools may create learning opportunities through deep, place-based projects using what is available in their ecosystem. Through a close connection to their local places, they learn about global challenges, but most importantly, students practise skills such as critical and analytical thinking in community-based projects:

We also have some environmental associations here, namely APEGA [Association for the Study and Protection of the Asinine Cattle] and the Aldeia (Village) Association, where we work on some environmental protection concepts... on the importance of the environment and environmental education and I think in that context we are to be congratulated. We have had some good contacts and partnerships here because the children are also receptive to this dynamic of partners not outside the school. For us, they are part of the school community (School, North)

Building partnerships with organisations interested in the region is another factor to consider in place-based education (Cohen & Rønning, 2022; Yemini et al., 2023). This strategy of developing links with community actors is beneficial for schools, students and local organisations. These can be recognised as co-educators and help integrate local knowledge into academically embedded

learning. Some of this work is developed with the help of local partners involved in initiatives that address local issues or promote rural life.

The associative structure is very important because it teaches the children how agricultural culture used to be, the work, the traditions, the dances, the songs, which I think is being lost nowadays. (Municipality, North)

This kind of experience is, in some ways, a discontinuity with traditional approaches to teaching and learning and the stable roles about who has the knowledge, how it is distributed and by whom. For this reason, teachers are preparing to change their position. On the other hand, as Yemini and colleagues (2023) see it, “the surrounding community, including businesses and public institutions, should also see itself as a partner in the learning process” (p. 4).

There are some activities, namely the local rural market, where the children and young people of the school make a description of the market of the last century, where they bring some local products from the vegetable garden, eggs, honey and prepare the space there with the support of the municipality and sell their products. They also have here the idea of local economy and the importance of local products. This activity is done with young people from the school, but it brings the young people into the community. (Municipality, South)

In contrast to what is described in the literature where schools implicitly devalue rural life and risk being an instrument of rural outmigration (Schafft, 2016), the majority of schools included in this study strategically promote a vision of the local as a place of knowledge and multiple resources. In this orientation, some schools do not seem to hesitate to use their position as vital organisations to promote local community development, either by involving their students in educational projects relevant to their communities or by investing in collaborative approaches with local partners.

Place-based Education Through Learning Cultural Commons

Cultural commons are legacies that result from cultural practices of daily life that have been renewed over generations that have benefited from them as non-monetised exchanges (Dentith & Root, 2012). These legacies include accumulated knowledge and information that are fundamental to community life and can relate to nature and agriculture, arts and crafts, language and health. Communities are repositories for this kind of local knowledge and its preservation is a matter of citizenship. Place-based education emphasises the importance of cultural commons (Yemini et al., 2023), which means that local communities are seen as custodians of cultural heritage, local memory and tradition, competencies, and skills.

We now also have cante alentejano [traditional singing], an activity we introduced this school year as part of the extracurricular areas, where we work with a choir group that goes into the schools to give lessons in this traditional singing. In addition, we have a project that has been running in the schools for the last ten years that has raised awareness of the cante among young people. A few years ago, young people had no interest in cante, it was an older people's thing; they were not attracted to this cultural expression, and today that has changed. We feel that this project has contributed to this change, so much so that we even have some young people who, after their experience, seek out the choral groups to join them (Municipality, South)

In this sense, the local is a mediator of meaning (Hawkins, 2014) and provides the context for engagement in significant learning but can also help to increase young people's participation. Some of these cases are based on intergenerational knowledge, which Bowers (2006) sees as a way of revitalising commons, be it nature or culture, that are shared and free from monetisation. Schools, through this valorisation of common local culture, are working against the “enclosure” of local knowledge. Active schools and communities, particularly municipalities, are crucial in exploring opportunities to integrate local knowledge (Autti & Bæck, 2021). In these contexts,

education and learning seem to be consistently associated with social practices and the culture of the local community that influence many decisions in the school context.

For example, we have a project that is about culture and society, and they are dealing with issues of our heritage; they are not going to deal with the heritage of Porto or Lisbon, are they? The fact that they have these projects makes them aware of our region. (School, North)

Valuing local knowledge can have an even wider impact, as these experiences can be a subsite of the overall learning experience (Budge, 2010). In this last case, engaging students in learning opportunities that promote the local can also have an impact on the preservation of traditions and cultural assets by mobilising cultural commons for educational experiences where students learn from their surroundings. Moreover, this has impact in strengthening school and local communities' ties.

They (the students) adhere very much to local traditions. In fact, there is a tradition, the parade of "comadres and compadres", which would have been completely lost without the involvement of the secondary school because most of the people you see are the young people of the secondary school. (Municipality, South)

Place-based learning strengthens young people's agency and promotes stronger community ties. Appreciating place can foster in young people a sense of responsibility towards their community rather than viewing it from a pejorative perspective. Encouraging young people to become aware of diversity of wisdoms and shared cultures contribute to a pedagogical understanding about differences.

As these schools are in border regions, there are often examples of place-based learning related to this proximity and common traditions and history. For example, topics related to Spain or life near the border are explored through joint projects with Spanish schools or are included in the curricula, as in the case of the Spanish language.

It is a healthy coexistence with Spain. We have a project called "Ponte nas Ondas" [Bridge over the Waves] that bridges the other side, with the schools on the other side of the Minho River. The border, as you know, does not exist. The crossing is practically automatic, and so there is a healthy coexistence, a sharing of many projects, namely this one, where the pupils pass on the oral heritage, the songs, the poems. So, it's about the intangible and the tangible heritage. If the school does not involve our students in passing on this heritage, it will end up dying. Therefore, I think it is one of our missions is to involve our students in passing on this rich heritage. (School, North)

Schools can indeed be "sites of change" (Cochran-Smith & Lytle, 2009, p. 27), connecting students to the reality in which they live in through educational projects that foster their critical perspectives regarding dominant narratives as rooted patterns of thinking (Dentith & Root, 2012). In this type of pedagogy, teacher preparation seems to be essential to "connect their classrooms to the students' worlds outside of schools" (Sharkey & Clavijo Olarte, 2012). Most of these examples show the relevance of teachers having local knowledge that facilitates the integration of place-based content. Teachers are at the privileged position of being experts on the contexts in which they work, and their willingness to understand school contexts enables them to contribute to social change and care for community culture.

Conclusions

The aim of this article was to contribute to research on rural schools and how they respond, together with communities, to the specific educational challenges that arise in rural areas. We specifically focused on *collaborative strategies to promote the integration of local knowledge* into the curriculum and educational practices in general. A main strategy is based on communities as a

resource and unfolds in different sub-strategies: exploring the curricular relevance of cultural and educational programs or activities developed by local organisations, either selectively or systematically; developing purposefully community-based practices aimed at connecting students to place and linking learning to local experiences. Students may be involved in projects with the community that address local and global challenges. In this case, collaborative approaches and partnership building with a variety of local organisations serve as resources and co-educators to provide students with additional educational opportunities. Another type of strategy relates to the appreciation of cultural commons through a variety of place-based educational approaches: Promoting opportunities for students to learn about the various expressions and wisdoms of communities; incorporating local knowledge into school-based projects, namely cross-border ones, aimed at enhancing heritage and cultural assets.

The findings point to the development of place-based and community-based education. These are often integrated into citizenship education, non-formal education activities promoted by schools or the community (such as municipalities and associations), or in the form of targeted and structured projects, such as cross-border projects. Although schools from rural border regions recognise the national policy of curriculum flexibility as an opportunity to promote local knowledge and the relevance of linking learning to students' experiences and lifeworlds, they do not fully benefit from this opportunity. The consideration of local knowledge and place-based approaches seems to run parallel to national framework curricula and test-based accountability measures. Nonetheless, there are examples of pedagogies of place that facilitate students' appropriation of the national curriculum. The development and implementation of place-based curricula benefit from teachers and school leaders' deep understanding of school context to better integrate local topics into the national curriculum.

The findings suggest that place-based education is developed and delivered through the participation of teachers, students, and other stakeholders in the co-creation of knowledge, demonstrating that education is a larger community effort (Gruenewald & Smith, 2008a). This pedagogic approach fosters networks between organisations for educational purposes and creates community-level commitment. In addition, most of these collective initiatives involve collaboration between different types of professionals, such as civil servants and teachers, which is an important feature, particularly in teachers' professional development (Desimone, 2009).

Rural schools are not detached from place (Corbett, 2007; Shamah & MacTavish, 2009) and have developed practices to integrate local knowledge or develop place-based learning even before this became an education policy. School and community leaders are aware that situated approaches can be more successful compared to standardised approaches. However, local knowledge is heterogeneous, and each context has its specificities that need to be considered.

The National Core Curriculum plays an important role in ensuring access to educational opportunities by providing a common body of knowledge to students from diverse backgrounds, but contextualising the curriculum is fundamental for students growing up in rural areas. Places are profoundly pedagogical (Budge, 2010; Gruenewald, 2003a, 2003b). They are not only a context in which experiences take place but also a mediator of those experiences (Smyth et al., 2008). In this sense, we can assume that these efforts to develop place-based educational opportunities and value local knowledge are forms of what some authors call pragmatic resistance (Mette et al., 2019).

Educating children and young people for a global world does not mean disconnecting from local contexts and local life. Linking local knowledge and the national curriculum poses many challenges for schools as they try to prepare their students for national standardised examinations while at the same time teaching them place-based meanings that give students different skills and competencies. While this is less measurable and less valuable for accessing higher education, it could benefit them in other ways by making connections to other areas of

knowledge and promoting ecological worldviews that better equip these young people to solve future problems.

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Elevating Local Knowledge in Curriculum, Conversation, and Community: Creating Connections Across Rural Montana

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Abstract

In a time of fraying community and interpersonal relationships, rural school and community leaders are in search of research-based approaches to strengthen connections and sustain relationships among their students and community members. This article reports the findings from two studies (Moore, 2023; Weikert, 2022) documenting how and why, during the height of the pandemic, rural leaders from a community museum and local school came together to use local history and knowledge to design a museum exhibit and a K-12 curriculum about the pandemic and vaccines. The article describes the museum's place-conscious development process of the exhibit titled, *Shots Felt Round the World: Dr. Maurice Hilleman and the Montana Origins of the Fight Against Pandemics* to invite visitors to view the COVID-19 pandemic and vaccine development through local histories of infectious disease and healthcare. The article also describes how a curriculum for students in kindergarten through 12th grade (K-12) titled, *Hilleman & Vaccines: Connecting Culture to Scientific Curiosity* was created in tandem with the exhibition by the museum's Teacher Advisory Council to connect students to local history and knowledge to promote student learning through the integration of math, science, history, and critical thinking. Findings reveal that while the subject of vaccines is politically charged, the emphasis on local history and knowledge allowed both museum and K-12 audiences to find common ground, learn about the subject through a local lens, and strengthen school and community-school connections. The article concludes with recommendations for how rural schools and communities can use local knowledge to contribute to cross-community connections and vitality.

Key Words: *rural school, community, museum, place-conscious curriculum*

Introduction

In the midst of today's complex, fragmenting, pandemic-ravaged world, community leaders around the globe are seeking meaningful ways to engage youth, strengthen education, build

connections, and grow their communities. Starting in October 2020, in response to the unfolding pandemic, community members of one rural town in Montana set out to do just that – to employ a place-conscious approach to education in order to strengthen relationships between the school and community.

This article brings together findings from two recent dissertation studies (Moore, 2023; Weikert, 2022), situated in the rural Montana community of Ekalaka. Together these studies document the process of how and why, during the height of the pandemic, rural leaders from a community museum and local school came together to use local history and knowledge to design a museum exhibit and a curriculum for students in kindergarten through twelfth grades (K-12) about the pandemic and vaccines. Moore's (2023) research examined the process by which a rural county museum, as a local anchor institution operating within rural social space (Reid et al., 2010), contributed to community vitality through the development of a place-conscious exhibit. Weikert's (2022) instrumental case study investigated the motivating reasons why stakeholders established and sustained a partnership to design and implement the K-12 curriculum associated with the museum exhibit. Together, these two rural community-centered studies from Montana offer key insights regarding how elevating local knowledge in curriculum, conversation and community can help to strengthen rural school and community connections.

In the Context of a Global Pandemic

At the time of these studies, communities around the world had been living through the COVID-19 pandemic for two years, persevering through challenges as local and state governments and school boards made decisions on health mandates and social policies. A report from the United States National Rural Health Association (2022) found that during this time, rural residents felt overwhelmed by information and misinformation about COVID-19 vaccines and often this became their reason for either not getting vaccinated (26%) or for not having their children vaccinated (31%). Overall, 71% of respondents indicated that their healthcare provider was the most trusted source of COVID-19 vaccination information and 14% indicated they wanted more information but did not have a trusted source to ask (National Rural Health Association, 2022). However, estimates indicate there is a severe shortage of rural health professionals (Hennessy, 2018). This means that people living in rural areas have a greater difficulty accessing basic services and health information, resulting in a decreased level of health literacy (Hennessy, 2018).

Due to the successful control and near-elimination of once dreaded infectious diseases, combined with public scepticism of health professionals, policymakers, and the pharmaceutical industry, the rate of United States parental refusal of vaccines has increased (Tulchinsky, 2018, p. 455). In these circumstances, experts suggest that in order to build vaccine confidence and increase vaccination rates amidst this shortage of healthcare professionals, public and private sectors must work together (Orenstein, 2019).

While access to quality medical care, rural museums, and rural schools may seem worlds apart, in recent decades, museums have demonstrated the ability to contribute to education and healthcare by connecting stories of past diseases to present topics of health and wellness (Camic & Chatterjee, 2013). Thus, the local museum in Ekalaka, Carter County Museum, set out to develop an exhibition and K-12 curriculum which utilized a place-conscious approach (Azano et al., 2021) to invite community members to view the COVID-19 pandemic and vaccine development through local histories of infectious disease and healthcare. The museum sought to focus on a clear connection to the biography of Dr. Maurice Hilleman who was born and raised in the region and became the most prolific vaccine scientist of the 20th century (Moore, 2023). Through the development of this two-part educational approach rooted in place, the Carter County Museum sought to position itself as a supportive partner in fostering a sense of connection and community (Gray & Graham, 2007).

Background Literature

Place-Conscious Education, Community Anchors, and Institutional Leadership

Place-conscious education (Greenwood, 2013) recognizes that connecting curriculum to place can elevate individuals' understandings of, and connections with, the local community, the global context, and help reveal the roles power and privilege play in teaching and learning. In this regard, rural contexts can be rich environments for place-conscious education. A curriculum which includes local history, knowledge, and expertise – and includes projects rooted in place – can enrich both teaching and learning (Azano et al., 2021). For example, Avery (2013) describes how the ideas of local ecological knowledge (Olsson & Folke, 2001) and Indigenous human ecological knowledge (Kassam, 2009) are important aspects of local rural knowledge and argues that by recognizing local rural knowledge as a valid way of knowing, learners can connect personal experiences to global concepts in science and other subject areas. Furthermore, findings from science education research suggest that the selection of pedagogical strategies which value and use local rural knowledge have the potential to enhance students' access, engagement, and achievement in science (Avery, 2013).

Experts recommend the use of connections to place as a way to increase students' academic achievement, promote stronger connections to their community, expand their appreciation for the natural world, and foster a heightened commitment to serving as active, contributing citizens (e.g., Sobel, 2013). These experts also recommend the development of partnerships as an important way to engage students in real-world projects in the local environment and the community (Sobel, 2013). In this way, partnerships between schools and their communities “*promote the education of children, the well-being of families, and the vitality of communities*” (Casto, 2016, p. 139). A place-conscious approach to education, which is grounded in community partnerships and connects students to a local version of a global issue, can help students recognize their potential to tackle local issues, including those related to health and safety, as part of the world community (Vander Ark et al., 2020).

Museums, and small museums in particular, have the potential to educate in powerful ways, and help students develop close connections to their community (Davis, 2007). With collections and programs of small museums often focused on place, “*members of the community come to know and cherish the place in which they live*” (Gray & Graham, 2007, p. 311). With this understanding, museums function as community anchor institutions because they hold objects and histories that shape the community's identities (Davis, 2007) and safeguard memories for future generations. These histories can help to create “*a web of understanding between people and the environment, between people and their neighbors, between people and their history*” (Davis, 2007, p. 70).

Leading researchers in the United States have called for museums to bridge the cultural sector with the experiences and the needs of its communities and audiences during the COVID-19 pandemic and beyond (Cohen, 2021). Experts have also identified aspects of individual well-being which can be addressed through well-designed museum experiences (Falk, 2022).

Theoretical Framework

This article looks at the findings from two studies which used the communities of practice framework as a lens to understand partnerships and collaborations. Wenger (1998) describes three criteria for membership in communities of practice: mutual engagement, a joint enterprise, and a shared repertoire of resources. In communities of practice, members share a mutual interest in a domain and a desire to engage in shared activities and discussions, often informally defined and negotiated. Through these relationships, a community of practice develops a repertoire of resources, words, ways of doing things, or common experiences of the group. In this understanding, communities are not necessarily related to one's geographical location or place. Instead, this framework describes how people interact and learn together. The

communities of practice concept has influenced theory and practice in many domains and offers a theoretical framework to understand the systems that support relationships in local communities and partnerships (Wenger, et al., 2011).

The communities of practice framework has been used by researchers and practitioners working in public school systems in the United States to better understand peer-to-peer professional development activities (Wenger, et al., 2011). This framework has also informed educational research outside of the classroom, including museum education, to understand how museum educators and teachers develop and sustain partnerships despite perceived barriers (e.g., Kisiel, 2016; Tytler et al., 2016). Furthermore, practitioners continue to add to the application of the communities of practice framework, offering best practices for communities of practice including the need for both individuals and the collective to benefit from communities of practice activities and fostering a sense of belonging and achievement within the members (Kastens & Manduca, 2018). In the two studies brought together in this article, communities of practice provided a framework to understand how and why rural leaders from a community museum and the local school came together to achieve a mutual goal; this article's findings provide further examples of thriving communities of practice.

Research Context

K-12 Public Education in the United States

In the United States, individual states provide general supervision over their public school systems, including curriculum and compulsory attendance. Students in Montana are required to attend school from age 7 to 16, with the public school system providing free education to all students ages 5-19. Like other states, Montana's Board of Public Education adopts general standards, called *Content and Performance Standards*, and Montana's Office of Public Instruction is tasked with implementing those standards. Local school boards then adopt a K-12 curriculum that defines how each standard will be met and implemented in kindergarten (ages 5-6) through twelfth grade (ages 17-19) regarding the activities, lessons, local assessments, and pacing. Although Montana's *Content and Performance Standards* seem quite specific, they do allow for place-conscious instruction within the Standards. The Standards define 'what' is to be taught, and the teacher in the classroom is very much in charge of the 'how'.

A Rural Community: Ekalaka, Montana, United States

The two studies reported in this article were situated in Montana, which is the fourth largest state in United States, yet is the third least populated by density, with an average of only 6.86 people per square mile (2.65 per square kilometre) (United States Census Bureau, 2020b). With just seven cities over 10,000 residents, and only one with more than 100,000 (United States Census Bureau, 2020c), Montana is known for its vast, rolling landscapes dotted by small towns and long distances in between population centers. The state has more rural schools (74%) and more small rural school districts (94.7%) than any other state, with one in three Montana public school students (N=48,200) enrolled in a rural school district (Showalter et al., 2019, p. 119).

The rural community at the heart of these two studies is Ekalaka (pop. 395) which is located in the southeastern corner of Montana and is an example of one of Montana's thriving rural communities. The town is situated in Carter County which spans 3,348 square miles (8,671 square kms). The county has a strong ranching industry including cow-calf and sheep livestock operations. Ekalaka is geographically isolated from major (and minor) metropolitan areas with few paved roads and limited access to other towns in inclement weather. Yet, Carter County was the second fastest growing county in Montana following the more populous Gallatin County, which is home to the city of Bozeman and the largest university in Montana (United States Census Bureau, 2020a, 2020c).

Ekalaka is home to Ekalaka Public Schools which had 133 students in grades K-12 in the 2022-2023 school year, with 90 students in Ekalaka Elementary and 43 students in Carter County High School, the county's only school for students in ninth through twelfth grades. The community is also home to the Carter County Museum which was originally located in the basement of the old Carter County High School, forming the foundation of this enduring partnership more than 85 years ago. The museum's location in the school also fostered relationships between the teachers and the museum. Most notably, the second director of the museum, serving from 1946-2006, was also the county's high school science teacher during this time. This long history has resulted in multiple partnership activities with generations of teachers and museum stakeholders.

The current commitment to developing place-conscious curricula began in 2013 when local teachers and museum stakeholders came together to develop lessons to teach growth curves through the measurement of cattle and dinosaur femurs. The success of this project formalized the museum's Teacher Advisory Council, which is composed of two teachers from the high school and one from the elementary school. The Teacher Advisory Council exists as a stand-alone committee within the structure of the museum. Participation is on a volunteer basis and the museum's director, in consultation with the rest of the Teacher Advisory Council, invites new members to participate. In the years that followed the first curriculum, the Teacher Advisory Council, in concert with the Carter County Museum staff and other partners, developed two more large curriculum units, custom programs, and provided multiple class visits and field trips, engaging multiple stakeholders in ongoing place-conscious education activities. This provided the foundation for the collaboration between the staff of the Carter County Museum, local healthcare providers, and members of the Teacher Advisory Council in creating the *Hilleman & Vaccines* (Carroll, et al. 2021) companion curriculum to the exhibit *Shots Felt Round the World: Dr. Maurice Hilleman and the Montana Origins of the Fight Against Pandemics*.

Exhibit Development: Designing for Connection to the Local Community and Building Connections

In light of the national call for museums to offer an educational bridge for their communities and audiences during the COVID-19 pandemic and beyond (Cohen, 2021), the Carter County Museum elected to participate in a national research initiative, led by the Center for the Future of Museums, that used a large-scale online survey to analyse the experiences, needs, and behaviours of a representative sample of the U. S. population. This included contacts from more than 650 cultural organizations around the country. Data gathered from 107 respondents in relation to the Carter County Museum indicated a clear desire for the museum to: (a) increase awareness of COVID-19 safety practices and vaccinations, (b) reflect on history and connecting the past to the present; and (c) educate children. These data revealed that local community members in the midst of the pandemic, the community was looking to the museum as a resource to address the challenges (Moore, 2023).

In response, the staff of the Carter County Museum joined together with local health care providers and virologists at Montana State University to create an exhibition grounded in place and supportive of individual well-being. The exhibit, *Shots Felt Round the World: Dr. Maurice Hilleman and the Montana Origins of the Fight Against Pandemics*, presented critical information about the COVID-19 pandemic and vaccines through a lens that included localized reflection on past pandemics and vaccine history (Moore, 2023). This exhibit, and its companion curriculum, utilized collections of photographs from Dr. Hilleman's life provided by the Museum of the Rockies and local histories from the region held by the Carter County Museum.

In its final format, the exhibition consisted of 14 retractable banners and two additional banners specific to the local community and gave explicit attention to the historicization of the relationships between people, infectious diseases, and medical practice. By weaving local pandemic histories as well as the biography of Dr. Hilleman through the exhibition, the Carter

County Museum elevated local knowledge to the level of essential civic knowledge (Moore, 2023).

In the second phase of the exhibition project, the Carter County Museum partnered with other Montana communities and their local anchor institutions (the community healthcare organization, museum, and/or library) to bring the exhibition to other locations. To create the critical connections to place, the Carter County Museum worked in consultation with people and archives from each host community to create two custom exhibit panels for each location to which the exhibition traveled, showcasing local histories of healthcare and infectious disease (Figure 1). This approach gave each community the opportunity to speak its history for itself, which is an important component of working with rural communities (Moore, 2023).

Figure 1: Exhibit on Display in Lewiston, Montana (Image Courtesy OneHealth Lewistown, 2022)



Curriculum Development: Elevating the Importance of Place

The members of the exhibition design team also recognized that they had a unique opportunity to further the reach of their work by connecting the content to Montana's *Content and Performance Standards* and local curriculum through a K-12 companion curriculum. Thus, museum staff, in partnership with the Carter County Museum's Teacher Advisory Council, developed the K-12 curriculum titled, *Hilleman & Vaccines: Connecting Culture to Scientific Curiosity* (Carroll, et al., 2021). This curriculum used a powerful, place-conscious approach by presenting information through the inspiring life story of Dr. Maurice Hilleman -- a rural Montanan who grew up to develop a variety of vaccines, including eight of the 14 commonly given to children in the United States today (Tulchinsky, 2018).

This group chose a place-conscious approach to teach about the process of scientific inquiry and vaccine development, infusing the curriculum with local histories and the life of Dr. Hilleman. They intentionally incorporated local information relevant to the global pandemic to expand student understanding of scientific concepts and also help students realize they have real potential to address issues. To accomplish this task and ensure the accuracy of all the science and math lessons, the team engaged with multiple expert organizations and partners (Kadoyama, 2018) including:

- The Carter County Museum supplied the background material for the curriculum on Hilleman's life, local and other Montana histories;
- The Museum of the Rockies in Bozeman provided material from the Hilleman family collection for integration into the curriculum;
- The community hospital, Dahl Memorial, provided the focus on understanding vaccines based on what they had heard from their patients;

- The Montana Office of Public Instruction granted the inclusion of two Indian Education for All lessons designed for middle school audiences, which addressed pandemics and indigenous tribes;
- The University of Montana School of Journalism granted the use of their series on COVID-19 and tribal nations in Montana; and
- Professors in History and Vaccinology at Montana State University and the Vaccine Makers Project Team at the Children's Hospital of Philadelphia provided expert review of the curriculum.

Sharing the Exhibition and Curriculum with Ekalaka and Montana

The exhibit opened in Ekalaka in May 2021 with a virtual event that included a tour of the exhibit from the director of the Carter County Museum, speeches by members of the Teacher Advisory Council who had created the lessons for the companion curriculum, and a guest lecture by Zahava D. Doering, co-director of the Smithsonian *Vaccines and US* project, of which *Shots Felt 'Round the World* and *Hilleman & Vaccines* became a part. In November of the same year, a second copy of the exhibit was installed at Dahl Memorial Hospital in Ekalaka, Montana in celebration of the United States National Rural Health Day. During its time in Ekalaka (pop. 395), the exhibit drew over 3,000 people.

In 2022, the statewide rollout of this project across Montana included: (a) the exhibition, which embedded public health within cultural and historical contexts in each community; (b) a documentary film showing, which facilitated discussions between audiences and local healthcare providers; and (c) the K-12 curriculum, which expanded student understanding of scientific concepts related to vaccine development and infectious diseases (Moore, 2023). Supported by a grant from Humanities Montana, the exhibit was on display in Chinook, MT from February to March 2022; Miles City, MT in April; summer 2022 in Billings, MT; fall 2022 in Lewistown; winter 2022-23 in Great Falls, MT; and spring 2023 in Hardin, MT. A total of 23,536 people saw the exhibition during its tour of these Montana communities.

Research Methodology

In order to explore the outcomes of viewing the traveling exhibition, Moore's dissertation research (2023) deployed a survey to assess visitors' reasons for attending the exhibition and their learning as a result. During the exhibit's state-wide tour, 29 people completed this survey, which used a Likert scale of 0 to 5 to measure respondent's pre/post level of understanding of topics including infectious diseases, vaccines, Montana history, local healthcare, and local history of infectious disease before and after viewing the exhibition. Respondents also had the opportunity to answer demographic data, which revealed that a majority of respondents identified as female (77%), Caucasian (80%), and between the ages of 26-35 (35%) (Moore, 2023).

Moore also investigated the outcomes of the K-12 curriculum through examination of teacher reflections recorded during community presentations and data collected from the teachers during the pilot of the *Hilleman & Vaccines* curriculum in Ekalaka, Montana. These data, collected in the spring of 2020, included copies of student submitted assignments from the elementary and high school levels with student names redacted to protect privacy. These data included 13 documents from students in the third grade at Ekalaka Elementary, which represented five of the lessons, and 16 documents from math students at the high school level (9-12 grade at Carter County High School), representing three of the lessons.

Given Moore's (2023) focus on the outcomes of the exhibition and curriculum, Weikert's dissertation research (2022), under full approval of the Montana State University Institutional Review Board and the Carter County Geological Society (CCGS) Board of Directors, implemented a complementary instrumental case study to document key stakeholders' reasons for

participating and supporting the *Hilleman & Vaccines* curriculum. Weikert used semi-structured interviews with nine participants including teachers and museum stakeholders, and collected field notes, documents, and audiovisual digital materials. To answer the research questions with accuracy and authenticity, Weikert's data analysis included analytical memoing and multiple cycles of open and axial coding to derive themes and categories. This non-experimental method added to Moore's research by building an understanding of complex and evolving relationships and processes between these stakeholders, their two institutions, and their community recognizing that community anchor institutions, including museums and schools, are deeply connected to their communities (Institute of Museum and Library Services, 2016). Weikert's study was designed to be respectful of, and responsive to, the distinctive relationships and aspects of one rural community, in order to generate findings that could be applied to other contexts.

Findings

The findings presented in this article are drawn from Moore (2023) and Weikert's (2022) dissertations. Together these findings provide a more complete understanding of how and why rural leaders from a community museum and the local school came together to create a place-based curriculum for their community focused on the pandemic and vaccines. The findings revealed that through a focus on local history and knowledge, both museum and K-12 audiences found common ground, learned about the subject through a local lens, and strengthened school and community school connections. While the subject of vaccines remains politically charged in the United States, the findings demonstrated how utilizing an innovative, place-conscious approach could foster hope and resilience even during a time of division and fear. These studies provide both theoretical principles and findings for practitioners, adding to documented examples of thriving communities of practice.

The Power of Place to Create Common Ground

Findings from Moore's (2023) study revealed that connections to local histories in the exhibit design was key to helping audiences find common ground to learn about the subject. By relating first-person accounts from newspapers and community oral histories, the exhibit connected the history of the local community and state, and the history of vaccines and pandemic disease, with a goal of enhancing "*public understanding of the role viruses play in human health, a key contributor toward enhancing the use of vaccines to prevent infections*" (Diamond et. al., 2016, p. 14). An example of creating common ground was seen through sharing the histories of members of the Carter County community regarding the 1918-1919 pandemic in the exhibition. These were particularly poignant, as viewers recognized their ancestors while reading about their experiences and contemporary coverage of the disease in the local newspaper (Moore, 2023).

A second key to the success of the exhibition was highlighting the person-place connections of the content. The biographical thread of Dr. Maurice Hilleman tied pandemic history, inequality, and scientific discovery and innovation together in a story that appealed particularly to a rural Montana audience (Moore, 2023). For example, Hilleman was born and raised in the rural ranching community of Miles City and went to college in Bozeman, MT. During his birth, his twin died, and his mother passed away a short while after due to illness. This contributed to Hilleman's lifelong battle to eradicate the world of childhood diseases. Today, the vaccines he created in pursuit of this quest save more than 4 million lives per year worldwide (Moore, 2023, p. 187).

This exhibition's companion K-12 curriculum titled, *Hilleman & Vaccines: Connecting Culture to Scientific Curiosity* (Carroll, et al., 2021), used a place-conscious approach to teach about the process of scientific inquiry and vaccine development centered around local histories and the life of Dr. Hilleman. In these lessons, the Teacher Advisory Council used local stories relevant to the global pandemic to help students realize that their health and safety are deeply connected to

their place, as well as their community. In Weikert's (2022) study, members of the Teacher Advisory Council described their commitment to personalizing the student learning experience and fostering students' interests in learning by providing examples of how they made the curriculum relevant to students' lives. For example, knowing that it is a common practice to isolate recently purchased cattle from the other cattle on a ranch enabled the teachers on the Teacher Advisory Council to generate lessons and monitor discussions with students about the practice of quarantine with contagious diseases among humans. There were also instances where a student's mother, who was a veterinarian, offered to help deliver a lesson. Speaking to local customs and culture helped teachers establish a community of learning with their students.

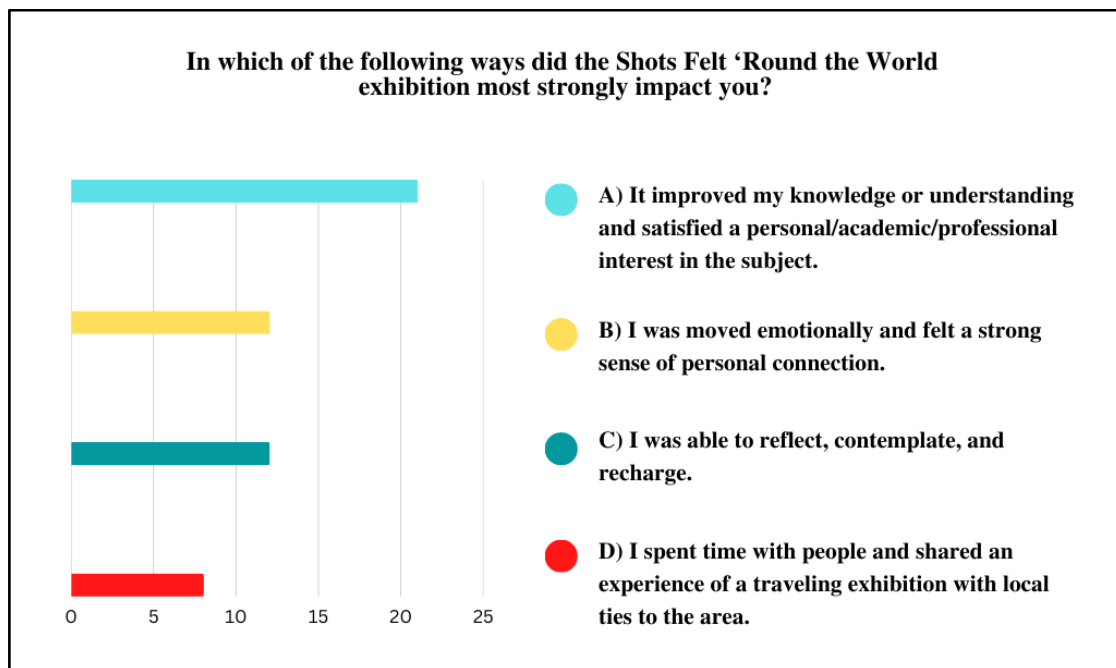
The connection between the local museum and the local school district was strengthened by adults and youth who visited the museum. Children became acquainted with exhibits that were interesting to them or that had a connection to where they live. For example, children noticed that the arrowheads or fossils they found on their farm or ranch looked similar to what was on display. Sometimes they noticed that their relatives had donated items to the museum that had been found on their farm or ranch or a location near their home. There were instances where an animal in the museum's taxidermy collection was like an animal they recognised as they travelled to and from school or as they worked on their ranch. Students were pleased to show their teachers and fellow classmates items which had a connection to their family and the place they call home. Educators in the area who listened to and honoured those conversations were well-suited to integrate museum content into their lessons. Additional lesson opportunities often arose as students learned that their teacher was deeply interested in where they lived. Students and educators, both at the school and the museum, thrived in this setting of shared trust. One educator who piloted the Hilleman curriculum reported that the connections to their sense of place – peppered by each student's experiences during the pandemic – resulted in student and teacher engagement that were among the most powerful in their 25 years of teaching. They candidly avowed, *"I mean, it was by far the most meaningful, the most meaningful, time in my career"* (Weikert, 2022, p.143).

Learning Through a Local Lens: Exhibition Outcomes

During the exhibit's state-wide tour, Moore's (2023) exhibition survey findings revealed that participants' pre-exhibit knowledge of exhibition topics ranged from "none" to "a little." However, a majority of respondents indicated that after attending the exhibit, their level of understanding of the topics of infectious diseases, vaccines, Montana history, local healthcare and local history of infectious disease all increased to "a lot" and "a great deal." These findings suggest that the exhibit was achieving its goal of increasing individuals' understanding through the use of a place-conscious perspective (Moore, 2023).

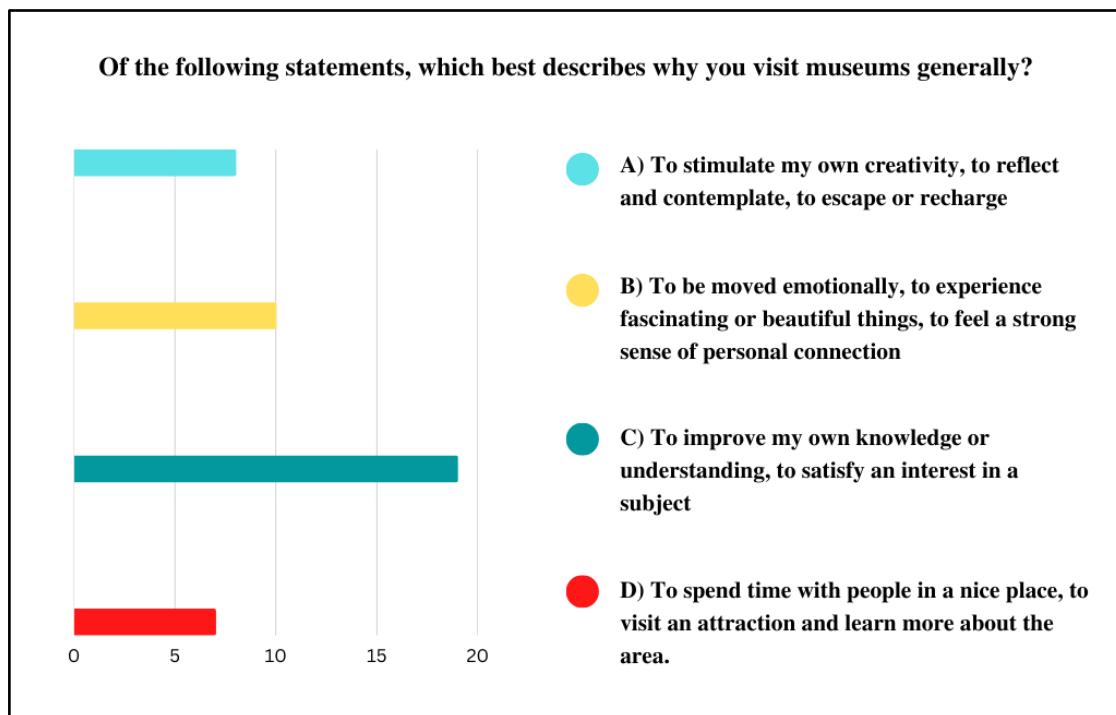
Two questions, inspired by Falk (2022), were specifically designed to assess the effect of the exhibition, and of museums in general, on areas of the respondent's well-being. Results from Moore's study (2023) (Figure 2) revealed that respondents overwhelmingly indicated they felt the experience had increased their understanding about the issues.

Figure 2: Impact of Viewing the Exhibit (Moore, 2023)



Moore's study (2023) also found that the majority of respondents found the exhibit satisfied aspects of intellectual well-being (Figure 3).

Figure 3: Impact of Museum Visits (Moore, 2023)



Learning Through a Local Lens: Outcomes of a Place-Conscious Curriculum

Moore's (2023) analysis of data collected from participants regarding their experience with the *Hilleman & Vaccines* curriculum suggests several positive outcomes for both teachers and their students. The teachers reported that the curriculum helped increase student engagement and broadened their pedagogical approach. For example, when reflecting on their involvement in the curriculum project, one teacher shared:

But what really motivated me to want to work with the museum was what my students would gain from this partnership. This project really forced me to broaden my approach beyond my narrow focus of the textbook. Our museum has become one of the best hubs for learning in our community, and I am just excited to be a small part of that! (Participant in Moore, 2023, p. 201).

Another teacher described how this curriculum provided an avenue for increased student engagement in their classroom:

We have had great discussions about what it means to be “vaccine eligible”, and we have had these conversations while just this week, one vaccine was approved for ages 12-15. What an incredible time to be talking about Hilleman’s contributions to immunization (Participant in Moore, 2023, p. 207).

In regard to outcomes for the students who engaged with the curriculum, Moore (2023) found: (a) increased content interest and knowledge; and (b) widened views of self, future, and larger world. To illustrate the way the curriculum supported the development of students’ content knowledge, one teacher shared:

Students learn a ton about macromolecules, but this curriculum gives the perfect context to reinforce those lessons and to connect students with more studies and more data. Collaborating with the math teacher helps students understand the data better and illuminates just how important math is to science. (Participant in Moore, 2023, p. 208).

In terms of the curriculum’s impact on students’ views of self, future, and larger world, teachers reported that the inclusion of stories about Hilleman’s childhood in southeast Montana enabled local students to connect common aspects of their experience with Hilleman’s rural background. For example, several high school students gave examples of applying techniques in quarantining and vaccinating before adding new cattle to herds at their ranches (Moore, 2023).

The Teacher Advisory Committee also shared examples of elementary student work that included students’ drawings of themselves as doctors and their interest in contributing to public health. For example, one elementary student wrote:

I want to find a cure for lung cancer [...]no one should deserve to go through that type of pain. I’m gonna try to learn how to become a scientist [...] it might take a couple years, but I will do it. (Participant in Moore, 2023, pp. 208-209).

In regard to the overall outcomes of the lessons, an elementary teacher shared:

My students have been very engaged in this unit. They love the hands-on activities, and I am truly amazed at how much material they are retaining ... but mostly the important concept that THEY can make a difference in the world just like Maurice Hilleman. (Participant in Moore, 2023, p. 207-208).

Strengthening Rural School and Community Connections

In an effort to understand Ekalaka community members’ motivation for working to create the exhibit and K-12 curriculum, Weikert’s study (2022) documented key stakeholders’ reasons for participating and supporting the work. Findings revealed that with local students as the focus of the development of the exhibit and curriculum, community members offered three independent, yet closely related reasons that energized their contributions: (a) their vision for the whole community, (b) their beliefs about the importance of personal contributions, and (c) their value of place. Stakeholders also described their commitment to the long horizon – a long-term dedication to living and working together – and building resilience amidst challenges, loss, and frustration. Participants demonstrated that through individual passions and interest, as well as their desires to learn and grow as leaders, they were stakeholders who served as catalysts for

change. These community members emphasized that this sense of personal agency was a vital element for a thriving rural community given the smaller population size. In more populated areas, a broad diffusion of responsibility can reduce an individual's tendency to take action, but in smaller, rural communities the responsibility for action and outcomes is more personal (Nowell & Boyd, 2014).

Teachers and museum stakeholders also connected their motivating reasons for their commitment to: preserving and sharing the stories of their community; promoting the area as an attractive place to live; and instilling in others a dedication to protecting the place they live and work. At the same time, stakeholders also expressed a commitment to challenging deficit views of rural areas, by sharing the assets and opportunities of their place as an example of the strengths and capacities of rural communities (Weikert, 2022). Stakeholders universally described this partnership as *relationships between people*, as opposed to a formal *relationship between institutions* of the museum and the school. One stakeholder described the reciprocal nature of this partnership as: “*Partnership is, of course, a relationship among people, where everyone brings something to the table and works together toward a common goal*” (Participant in Weikert, 2022, p.108).

These relationships also endured over time. Weikert (2022) noted that all the members of the original Teacher Advisory Committee had changed their professional roles, taken leaves of absence, or permanently left their formal paid positions. Yet, all of these stakeholders remained active in this partnership. In this context, these individuals' continued involvement illustrated the relational nature of this partnership in contrast to partnerships based solely on formal transactions designed to support one-time projects. Weikert's (2022) findings revealed that the interactions between the members of the Carter County Museum and the educators from the local school were most appropriately described as a *relational partnership*. Understanding the core nature of this partnership as relational rather than transactional elevated the pivotal roles of respect, reciprocity, and social connections within the partnership activities between the museum and the school. It also highlights the limitations of transactional partnerships, which tend to rely on impersonal interactions between individuals formally representing institutions.

Discussion

Together, the findings from Moore (2023) and Weikert (2022) provide insight and inspiration for rural community leaders, who even in the midst of adverse circumstances such as those of the pandemic, can use local history and knowledge to build common ground, enhance student learning, and foster community vitality. These two studies highlight the powerful impact possible through cross-community connections and offer three principles (Weikert, 2022) and four practices (Moore, 2023) for ways in which rural schools and community organizations can work together to establish, grow, and sustain place-conscious relational partnerships and curriculum.

Elevating Local Knowledge: Place-Conscious Principles

Establish Shared Respect. Powerful relational partnerships are “*grown through a process of mutuality and reciprocity, and based on relational ethics, authenticity, and solidarity*” (Cash & Moffitt, 2021, p.1). Community anchor institutions, such as rural museums, can partner with their local K-12 teachers to support meaningful place-based educational experiences. Given that rural teachers' lives continuously intersect with those of their students in multiple ways, both within and beyond the classroom, teachers can be a tremendous resource for community anchor institutions.

Develop a Shared Vision. Given the variety of reasons why rural community stakeholders and teachers choose to participate in partnership activities, it is critical to develop a shared vision which includes the whole community, highlights the importance of place, and values individual contributions.

Work Toward Shared Solutions. The participants in this project described their work on the museum exhibit and the K-12 curriculum as being both place-conscious and solution-focused. In this regard, the work described in this article is a clear example of how new ideas can be developed with rural communities to build and extend previous positive outcomes (White & Downey, 2021).

Elevating Local Knowledge: Place-Conscious Practices

Establish a Teacher Advisory Council. In the United States, all Career and Technical Education programs are required to seek the input of a Local Advisory Committee, composed of a variety of community stakeholders which may include parents, business owners, and teachers (Montana Office of Public Instruction, 2020). In Ekalaka, the museum director and members of the curatorial staff specifically invited teachers from elementary, middle school, and high school to form the Teacher Advisory Council. This choice helped to ensure maximal student participation in museum programs and best serve as a resource for classroom subjects that may benefit from access to museum collections or connecting subjects of world history (like infectious diseases) to local history. The Teacher Advisory Council also chose to involve other partners on a case-by-case basis, as in the example of bringing in experts on local healthcare and vaccinology to consult on the *Hilleman & Vaccines* curriculum.

Intentionally Build Relational Partnerships. In defining and describing relational partnerships, Weikert (2023) emphasized that these partnerships are grounded in social relationships. This differs from transactional partnerships with less personal interactions between individuals formally representing institutions based on one-time projects outlined by memorandums of understanding or formal agreements. Intertwined with how stakeholders understood community, relational partnerships are built over time on respect and reciprocity, fostering a sense of belonging, and a long-term dedication to living and working together, building resilience through challenges, loss, and frustration. Relational partnerships then require the development of social relationships over time, aligning with the critical role that relationships play in everyday rural life.

Provide Professional Development. In order to support the development of a rigorous place-conscious curriculum and effective programming, all members of the Teacher Advisory Council needed to know the local and state educational standards as well as the museum's mission statement. Thus, the Teacher Advisory Council should develop goals and a mission which will prioritize place-conscious curricula and a strong relational partnership with both institutions. In the case of the Carter County Museum, in addition to large curriculum units, the museum also worked together with the Teacher Advisory Council to discuss ways in which the museum osteology collections could be used by students during anatomy lessons and digital scans of fossils could be viewed online or 3D printed in their classrooms.

Share With the Community. A final recommendation for practice is to develop opportunities for members of the Teacher Advisory Council to share their collaborative work at local, state, and regional education conferences. In this way, members of the school and the museum can share programs, highlight their successes, and introduce their Teacher Advisory Council model so that other schools and museums may develop and refine their own relational partnerships. Members of the Teacher Advisory Council can also present their work alongside museum partners to museum membership and community, through written communication (newsletters, social media posts), or public forums. These efforts strengthen relationships, foster community support, instill in others a dedication to protecting the place they live and work, and challenge deficit views of rural areas by sharing the assets and opportunities of their place. For example, the Teacher Advisory Council participated in the Virtual Opening of *Shots Felt 'Round the World* exhibition in Ekalaka, Montana. This special program aired live on YouTube and Facebook and featured experts involved in the partnership, including the members of the

Teacher Advisory Council, who shared information on how they constructed the lessons and their impact in the classroom pilots. The film now lives on the virtual version of the exhibition, which is accessible through Google Streetview and has been viewed 44,000 times (<https://cartercountymuseum.org/shots-felt-round-the-world>).

Conclusion

The community of Ekalaka is a compelling example of hope and resilience during a time of division and fear amplified by the COVID-19 pandemic. Two recent dissertations (Moore, 2023; Weikert, 2022) demonstrated how this rural Montana community managed the sadness, loss, and trauma resulting from the COVID-19 pandemic by working together to improve the connectedness, livability, and equity of their community (Weikert, 2022). With relationships that span multiple generations between families, Ekalaka continues to foster friendship and camaraderie among community members, which builds mutual trust, cultivates a feeling of security and support, and a sense of inclusivity and acceptance. This relational partnership (Weikert, 2022), epitomized by this exhibit and curriculum, offers an inspiring example of how rural education innovation (White & Downey, 2021) can bring hopeful visions to reality.

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La Trobe University's Regional Higher Education Pathways Program

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Abstract

Nuanced support for regional secondary school students can be a key to their consideration of university as an option in their educational journey. Reports, studies and teachers on-the-ground continue to call for tools and resources to boost students' decision-making about their futures. La Trobe University's Regional Higher Education Pathways Program takes an evidence-based approach to developing learner confidence and pastoral support for senior secondary students in Albury-Wodonga and Shepparton. As part of the program, students participate in regular, timetabled in-school sessions that cover topics from exam revision and literacy to wellbeing and mental health. The overall foci of the program are building learner confidence ('I can do university') and demystifying higher education through connection to the university environment ('I can see myself at university').

Keywords: *regional, pathways, higher education, achievement, learner confidence, support*

La Trobe University's Regional Higher Education Pathways Program

La Trobe University's Regional Higher Education Pathways Program (Pathways Program) has been delivered in low ICSEA (Index of Community Socio-Educational Advantage) schools across the Albury-Wodonga and Shepparton regions since 2017 and 2019 respectively. Given rural, regional and remote students are less likely to go on to higher education than their metropolitan peers (Naphthine et al., 2019), coupled with workforce shortages that face regional Victoria (Victorian Skills Authority, 2022), the Pathways Program views its role in the community as twofold: the first, to guide and support students in their final year of secondary school (Year 12) to develop the skills and confidence necessary to become independent learners; the second, to increase further education attainment in regional areas to boost the economic outcomes of local communities.

Students are invited to opt-in to the program, which consists of literacy and academic skill development delivered by trained university students and staff via in-school sessions. The sessions commence in the final term of Year 11 and continue on a fortnightly basis throughout the Year 12 academic year. In addition to the timetabled sessions, participating students are also provided additional group and one-on-one support tailored to their needs. For instance, students can attend optional online wellbeing, literacy, numeracy and other study skills sessions, as well as access a Microsoft Teams page where they can ask questions related to their schoolwork, find study materials and make suggestions for ad-hoc workshops. There is a pastoral element to supporting students throughout Year 12 and after the exam period. The Pathways Program team

assists students with navigating their respective state Tertiary Admissions Centre's offer process and supports them in the transition from school to post-secondary life.

Best-practice approaches underlie all facets of the Pathways Program including its structure. The Pathways Program sessions are embedded into students' existing school study periods (i.e., periods in a student's timetable where there are no scheduled classes, but students are required to remain at school). This timetabled approach encourages students to view the sessions as meaningful learning, rather than an extra-curricular incursion which can be seen as 'not real work', that could lead to disengagement. Secondly, the inclusion of the program in students' timetables also allows for consistency and thematic scaffolding as well as targeting specific sessions during key times of the year for example, exam revision ahead of final exams in October.

Given prior achievement is a key predictor of further study aspiration (Vernon et al. 2018; Gore et al. 2015, Gore et al. 2019), the Pathways Program has been designed to build capacity for achievement. Results from the National Assessment Program – Literacy and Numeracy show that achievement of rural, regional, and remote students begins to lag as early as the Junior Years of school and persists through the Middle Years (Halsey, 2018). This trend is also reflected in Year 12 completion rates where in 2021, 82.1% of metropolitan students completed Year 12, while their inner regional, outer regional and remote/very remote counterparts were behind at 71%, 74.4% and 63.2% respectively (Australian Curriculum, Assessment and Reporting Authority, n.d.). Further, subject study scores that form part of the completion of the Victorian Certificate of Education have been declining in rural/regional government and non-government since 2015 and are consistently lower than the state-wide average. In recognition of this disparity and that parts of the curriculum are under-served in regional schools (Burnheim & Harvey, 2016) as well as teacher shortages that leave little room for the creation nuanced lesson plans to meet the needs of their cohorts (Cuervo & Acquaro 2018), the Pathways Program provides targeted support, complementing the Year 12 curriculum.

The inclusion of trained university students from the local regional campus to deliver the sessions was deliberate. In addition to developing learner confidence through study skills development, the Pathways Program students have access to a peer from their community that has moved on to university. This allows students to 'see themselves' in the student and ask questions that will receive a nuanced response. Beyond this, the program reflects on statistics that show rural, regional, and remote students are likely to have families with little higher education experiences (Australian Bureau of Statistics, 2022) and could therefore lack the access to timely information at home. A large part of the program is providing this connection to a mostly foreign concept to some students and building their cultural capital of the university environment. To this end, the Pathways Program gives participating students the opportunity to experience life as a university student and learning about the support services available to them should they chose university after secondary school. For instance, after students have completed the Year 11 component of the program, they are invited to an on-campus enrichment experience, La Trobe University Snapshot, to participate in activities that prepare them for the academic and wellbeing pressures of Year 12.

Since its inception, 346 students have completed the Pathways Program, with 70% of participants accepting university offers. Both the life outcomes (higher weekly earnings, higher rate of employment, higher full-time workforce participation) for students, and the economies of their local areas, stand to benefit from the tailored support offered by the Pathways Program and we look forward to continuing to innovate the program with regional schools to ensure we meet the needs of our students and communities.

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Australian and International Journal of Rural Education

Book review: Timmis, S., de Wet, T., Naidoo, K., Trahar, S., Lucas, L., Mgqwashu, E. M., Muhuro, P., Wisker, G. (2022). *Rural Transitions to Higher Education in South Africa: Decolonial Perspectives*. Routledge

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Transitioning to and Navigating Higher Education Spaces

Informed by the apartheid wrath and legacy of apartheid, as well as concomitant perpetual colonial tendencies such as inequality in access [physical and epistemological], participation continues to be a major challenge for South African higher education. As a result, academic underachievement and low success rates characterise the system. Contrary to popular tendencies, this book's findings demonstrate not only how students from rural contexts can be successful in their university journeys but also have the ability to effect significant changes in higher education (p. ix). These students, however, are not oblivious to tendencies that associate the 'rural' with the negative (pp. 32, 134). Funded by the Economic and Social Research Council in the United Kingdom and the National Research Foundation in South Africa, this project was titled Southern African Rurality in Higher Education and investigated the learning journeys of students from rural areas of South Africa.

The book is structured in a thesis format with Chapter One consisting of a pre-data generation literature review tapping into the *Historical Context of Higher Education in South Africa*. Reflections appraise the reader on the intricacies of the South African apartheid higher education system and does lay a foundation for the need to transform the institutional landscape. A case for both decoloniality and epistemic justice is made in Chapter Two. Central to decoloniality was the abandonment of a race-based funding model to a quintile system which is pro-poor (and seeks to achieve redress). A quasi-participatory methodology with a decolonial spin (p. 52) and a dash of narrative inquiry principles (p. 51) was adopted for data generation (see Chapter 4). The authors conceded that the study was not designed as participatory action research (PAR) but embraced the notion of participation in research (p. 50). Therefore, this study may not necessarily be subjected to a rigorous PAR (see Carr & Kemmis, 1986; MacDonald, 2012) scrutiny. This softer option, however, afforded the students (as co-researchers) the chance to engage with their personal histories and lived experiences (p. 52). Pondering constructive alignment which requires that all components of a study must be consistent with one another, the context seems not to conform. Whilst the title suggests that the study was conducted in South Africa, some research questions of the study refer to the *global South*, and *Southern Africa*.

Post-data generation chapters (Chapters 5 –8) present findings of the study with each focusing on a theme:

5. *Negotiations of Transitions to University: Figured Worlds and Identity Transformations*

6. *Cultural Values and Practices: From Rural Communities to Higher Education*

7. Place, Funds of Knowledge and Investment in Language

8. Experiencing Higher Education Learning, Teaching and Curricula

Students from rural areas indicated that there are multiple sources of information and support including radio, television and newspapers enabling them to learn, even though access to internet limits their access to information. Given the fact that applications are now done online, many students face a challenge. Chapter Five further demonstrates how challenging it is for students from rural areas to negotiate their transition to higher education in various ways. They experienced incongruities in communitarian cultural and historical practices that differ greatly from theirs (p. 73). In addition, they found the university to be characterized by a lack of awareness to the socio-linguistic challenges for students coming from rural areas including the multilingualism of rural schools. In this way they are afforded a deficit positioning and denied epistemic justice. This illuminates the call to conscientisation for higher education to disrupt the epistemic injustice (Quantz & Buell, 2019) as universities become more digitalised (p. 74-75) in nature.

Pondering the cultural values and practices, students from rural areas indicated an existence of stronger values of *Ubuntu* (Lefa, 2015; Letseka, 2012) which are found to have been eroded to some degree in higher education spaces. For example, a basic value of sharing was found to be eroded. Regarding conceptualisation, the authors reiterate Roberts and Green's (2013) contention that the notion of rurality is multidimensional/multifaceted (demographic, social, cultural and contextual, as well as complex (p. 100). A significant but salient point regarding funds of knowledge associated with being rural was made to conscientize the readership that teachers rarely tap into this source of knowledge and how it manifests in higher education spaces.

The book describes learning at university as “new” (p. 119). “Newness”, in this book, can be traced to the use of language and different kinds of knowledges in the school and higher education contexts. In contrast to higher education spaces where the dominant language of learning and teaching continues to be in English, co-researchers indicated that at school, teachers attempted, on a regular basis, to explain the content in home language. Again, discussing knowledge about healthy eating from indigenous plants and growing plants themselves tended to be overlooked. This coincides with Moletsane's (2012) contention that rural knowledges continue to be marginalised. In a similar vein, coloniality ignored and/or marginalised indigenous knowledges to the periphery. The authors can be lauded for adopting a decoloniality lens as this illuminates the alienation of rural and indigenous knowledges.

In conclusion, the book offers some interesting thoughts about students transitioning from rural areas to higher education. Firstly, space and time shaped transitions of students coming from rural homes into cities and conurbations in very critical ways. This contention presupposes that all universities are in urban contexts. The South African higher education landscape comprises universities found in rural contexts. It would have strengthened the study if such variations were highlighted. Secondly, the book highlights the co-researchers' feelings of being/becoming “unhomed” (p. 143) in their transitioning to higher education. Vice (2015) asserts that where students ‘feel at home’, they feel secure, enabled and productive (p. 143). Another feature that may have enriched the book is a stronger focus on the diversities of rural contexts, as well as assets and how these can be tapped into to ease transitions to higher education. Finally, this book provides a significant contribution to rural education and there is overwhelming evidence that very rich data was gleaned and used. Co-researchers were also afforded sufficient time and leeway to leverage their experiences and, most importantly, reflect on their narratives.

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