

Fall 2022

A Geographical Analysis of Canadian Students Taking Independent Music Lessons: The Rural Experience

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Recommended Citation

Purves, R. M., & Upitis, R. (2022). A Geographical Analysis of Canadian Students Taking Independent Music Lessons: The Rural Experience. *The Rural Educator*, 43(4), 15-31. <https://doi.org/10.55533/2643-9662.1356>

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Cover Page Footnote

Acknowledgements This work was supported by a partnership grant from the Social Sciences and Humanities Research Council of Canada (Grant # 895-2011-1000). Geocoding was provided by GeoCoder.ca. Use was made of the Statistics Canada Geographic Attribute File, 2016, which was reproduced and distributed on an "as is" basis with the permission of Statistics Canada. The Institut national de santé publique du Québec Index of material and social deprivation was compiled by the Bureau d'information et d'études en santé des populations from 1991, 1996, 2001, 2006, 2011 and 2016 Canadian Census data. Map data copyrighted OpenStreetMap contributors and available from <https://www.openstreetmap.org>. We are also grateful to the thousands of students, teachers, and parents who took the time to fill out the surveys that form the basis of the current study.

A Geographical Analysis of Canadian Students Taking Independent Music Lessons: The Rural Experience

**Ross M. Purves
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The engagement of students taking private music lessons is affected by a range of factors, one of which is the geographic location of the student's family. This is a geographical analysis of 6,500 questionnaire responses completed by Canadian music teachers, students, and parents, including 819 responses (12.6%) from participants living in 'rural' areas, as defined by Statistics Canada. Participants' home locations were categorized on a five-point ordinal scale from 'rural' to 'very large urban population center', data-matched with further geospatial data relating to deprivation and road distances and assessed for strength and direction of association with questionnaire items. Results revealed that students living in more rural areas performed more regularly than those in more urban areas, with parents and teachers in more rural areas taking greater part in collective music making events. Whilst they derived a smaller proportion of their household income from music, teachers in more rural areas garnered greater respect from parents. Parents also reported increasing pleasure in children's musical progress as population centers decreased in size. The results offer tentative support to the view that in more rural situations, where there are potentially fewer students and teachers, closer intergenerational bonds are possible, and more aspects of private music lessons might reflect locally-valued traditions and resources.

Experiences of students engaged in private music lessons vary greatly and many factors impact student engagement and learning. These include student motivation, parental support, teaching effectiveness, and the interactions that take place between the parent, teacher, and student triad (Creech & Hallam, 2011; McPherson et al., 2012; Uptis, Abrami, Varela et al., 2017). One variable that receives less attention is that of the geographic location of students and their teachers, and in particular, how students who live in more rural areas gain access to music lessons (Stevens et al., 2019). Further, studies examining rural music education tend to focus on elementary and secondary educational settings (e.g., Bates, 2011, 2018; Brook, 2011, 2013, 2016; Mercer, 2012; Prest, 2013) and not on private music lessons for instruments and voice. Accordingly, the present study provides a geographical analysis of Canadian students taking private music lessons, with particular attention to the experiences of teachers, students, and parents living in more rural settings. While these types of lessons are also referred to as private music tuition and independent studio lessons, we use the term private music lessons throughout to refer to paid lessons that occur outside of school, usually one-on-one with a teacher and student, and encompassing a wide range of instruments, including piano, violin, flute, and voice, among others.

Challenges and Opportunities in Rural Music Teaching

In many rural schools, the music program serves as the site for building strong community relationships that last for decades (Bates, 2018; Brook, 2011; Spring, 2016a). Bates (2018) described how rural music educators often dedicate their personal and professional lives to a single community. He claimed that these teachers are often "known locally and revered for generations... bringing a sense of belonging and fulfillment [to the community]" (p. 1). Of note is his observation that these music teachers take part in the musical life of the community beyond private music lessons, such as leading community choirs or playing the organ at the local church.

Bates also drew attention to the extraordinary range of rural settings in the United States, which echoes observations made by Canadian researchers (e.g., Brook, 2011). He cautioned, too, about the practice of characterizing rural areas according to their proximity from urban centers, making reference to the term *urbanormativity* (Fulkerson & Thomas, 2013), where an urban-centric focus imbues cities with positive values, casting them as cosmopolitanism, with high standards of education and refinement. In contrast, rural dwellers are often associated with poverty, ignorance, and homogeneity, in opposition to the cultural norms associated with cities. Bates (2018) argued that

urbanormativity can have a negative impact on rural music teachers and programs when expectations are based on possibilities associated with urban centers, such as large instrumental ensembles or the privileging of classical genres. These expectations have the effect of casting rural settings as impoverished and overlook the richness of rural music.

Even though rural music making can be rich, there are challenges. These challenges include geographic isolation from other musicians and music educators, insufficient resources (such as lack of adequate instruments), scheduling problems, low enrollment in specialized music programs, and teacher turnover (Isbell, 2005). That said, it has also been demonstrated that these perceived deficits, many of which arise out of an urbanormativity perspective, can become assets to the community (Bates, 2018; Brook, 2011, 2016). Fewer students and teachers can result in closer relationships and significant mentorship and serve to bridge school music instruction and private music lessons. The choice of genre and instruments can honor local preferences and traditions, where resources may be easier to access (Bates, 2018). And perhaps most important of all, if music educators “teach for eco-literacy [to]... help maintain and preserve the natural environment within which rural schools and communities are situated” (Bates, p. 9), music can become an extension of the natural environment, connecting intimately to geographical place.

Social-Economic Deprivation vs Social Capital Approaches

Material and social deprivation indexes have been developed as a means to examine a number of outcomes related to public health. In these studies, deprivation refers to relative measures between groups of people on a variety of lifestyle and resource indicators. The argument is made that people living in so-called deprived communities, as measured by such variables as lack of access to fresh food and single-parent households, often have worse health outcomes, including decreased life expectancy, increased mortality from the use of tobacco, and increased rates of hospitalization (Jones et al., 2009). As Purves (2019) notes, families able to marshal greater reserves of material and social capital have been regarded in the literature as better placed to obtain not only favorable academic educational provision but also greater opportunities to engage in formal musical activity. This combination of home, academic, and musical support can result in a powerful ‘resource

booster’ (Coleman, 1990), potentially enabling the reproduction of these advantages for children. In this study, we make use of a material and social deprivation index developed in Canada over the past two decades (Gamache et al., 2019) to examine if social-economic deprivation is also related to teachers’ provision of private music lessons.

However, while the application of the material and social deprivation indexes to private music lessons is a methodological contribution of the present study, we also wish to highlight that a deprivation perspective can cast the same detrimental shadow on rural communities as urbanormativity. For instance, Miller’s (2008) study of a collaboration between members of a small Saskatchewan farming community and a regional university’s continuing education center highlights how a community development approach, supported by grassroots fundraising, can successfully ameliorate some of material and social barriers to private music lessons within the Canadian rural context. Thus, while we embrace the opportunity to use material and social deprivation indexes in our analysis, we would also counteract the social deprivation notion with social capital.

A social capital framework explores the benefits associated with relationships and experiences that arise from the interdependence of individuals and groups in community (Prest, 2016). Reciprocity, trust, and goodwill are all hallmarks of social capital, and these elements are particularly important in small communities where “it is possible to discover unexpected mutuality in the face of difference” (Putnam & Feldstein, 2003, p. 276). In an extensive review of social capital frameworks as they apply to rural music, Prest examined studies linking social capital with future job prospects in music, musical preferences and community arts programming, and culturally relevant music teaching. Like Jones and Langston (2012), she concluded that social capital should be a focus of both formal and informal music education, based on the “musical ecology of the locality” so that students come to engage in lifelong music making as they engage positively with other individuals and communities (Prest, 2016, p. 137). Prest paid special attention to studies of community learning environments, such as choirs, where the social capital generated through the fellowship associated with groups also has the potential to benefit the entire community (Prest, 2016). Her literature review revealed a number of sources that demonstrated that social capital can foster broader social justice goals and greater

equity. Community music groups do much more than build musical skills. Well executed, they also build “active and sustainable communities based on mutual respect and trust. Such relationships can empower residents to change power structures where there are social justice issues and remove the barriers that prevent people from participating in the issues that affect their lives” (Pietersen, 2008, p. 151). Prest concluded that music making, by its nature and structure, has particular capacity to promote social capital because it occurs over a long period of time and requires concerted effort to be successful—effort that entails cooperation and intergenerational relationships. She argued that music educators who draw in the inherent relational qualities of music-making, “fostering empathic musical encounters... may provide a forum for the discussion of common values in a pluralistic society... foster[ing] social capital that supports both individuals and the greater community” (Prest, 2016, p. 152). This position leads to a place-conscious and relational approach to music teaching and learning.

Place-based Education and Virtual Music Experiences: Where the Rural and Urban Meet

Place-based education theorists argue that society is comprised of relationships amongst people and places, and that our educational offerings should facilitate the development of positive relationships with the land as well as fostering relationships with humans and other living entities (Bowers, 2001; Brook, 2016; Gruenewald & Smith, 2008; Shevock, 2015). As Brook (2016) so eloquently stated, “building identity is an iterative and recursive process as we shape our places and our places shape us” (p. 107).

Prest (2016) makes clear that a place-based approach to music teaching is “*fundamental* to the continued existence of music education opportunities for rural youth, which are inherently more fragile” (Prest, 2016, p. 152). Spring (2016b) also identifies the potential benefits of the approach for music educators, whilst also identifying challenges to successful implementation. Others have argued that rural music education (in schools, in community settings, and through private music lessons) should draw on “vernacular, hybrid, and improvisational rural musical traditions and practices” (Corbett, 2016, p. 12), not only because of the challenges associated with low population densities and prohibitive distances from education, health, and social services, but because the vernacular communities of practices hold their own forms of sociocultural and spatial importance.

Indeed, scholars have argued for creating spaces where both traditional or classical curricula are expanded to include regional curricular content, claiming that “attention to place and space is crucial to the transformation” of how music is taught and perceived (Corbett, 2016, p. 24). Corbett makes the case that the “geographics of disadvantage, marginalization, and an assumed rusticity need to be both recognized and addressed in music education in spaces outside the city... find[ing] ways to bridge place-based rural knowledge forms and the vertical discourses of theoretical music and also those musical forms that may be alien to children living in the country” (2016, p. 25).

The honoring of the vernacular and the call for a hybrid approach to music teaching and learning stands in contrast to the push for virtual learning that promises to bring private music lessons to a “high” standard to remote communities. Stevens et al. (2019) explored ways of bringing specialized instrumental instruction to students living in small rural communities who are “disadvantaged by the lack of local teachers” (p. 25) by examining how synchronous virtual learning environments could be used to deliver online music lessons over long distances. The researchers concluded that none of the participants, rural or urban, teacher or student—despite their successes with online lessons—saw online teaching as a substitute or replacement for a local teacher, notwithstanding the benefits students received from their online lessons. The technical challenges were many, and the study pointed to the primacy of face-to-face teaching embedded in a strong community context.

The data for the present study was collected before the COVID-19 pandemic, and since its outbreak several researchers have looked at the impact of online learning for music teachers in general (e.g., Biasutti et al., 2021). Therefore, whilst the present study was not explicitly focused on online learning, given the changed context it is important to consider what *place-based* online learning might look like. For instance, the hybrid approach proposed by Corbett (2016) would include the vernacular, and work in tandem with the specialized music lessons approach offered by Stevens et al. (2019). A glimpse of this type of environment is provided by Mercer (2012) who taught music online to high school students living in rural and isolated parts of Newfoundland and Labrador. Mercer described how, during a typical online music class, students from throughout the province gathered in a synchronous social networking environment to learn, share and contribute to their local artistic communities using

both face-to-face encounters and asynchronous online tools (e.g., YouTube). Mercer described a high school student living in a remote coastal town who was drawn to a specialized form of bluegrass guitar playing. He joined an online community with this interest in common, and as he developed his own skills, he shared them with his hometown peers, resulting in a “pocket of highly skilled bluegrass guitar players living in a small coastal community in Labrador—all from the efforts of one passionate young musician” (Mercer, p. 12). Arguably the success of this example lies in the blend of synchronous and asynchronous platforms, online relationships blending rural and urban strengths, and the enactment of the learning in place with peers, drawing from the social capital that was generated through the interdependence of music, relationships, and place.

It is this interdependence, as manifested through students’, parents’ and teachers’ experiences of face-to-face private music lessons in more rural and more urban settings, which forms the focus of the present study.

Research Questions

Our methodological focus involves a geographical analysis by categories of socio-economic deprivation, differences in urban and rural locales, and distance between teaching sites and students’ homes in order to address three research questions:

1. Were there differences in engagement in and attitudes towards private music lessons based on whether students live in more rural or more urban settings?
2. Did teacher experiences and studio practices vary according to (a) rural/urban geographies and/or (b) prevailing local levels of deprivation or affluence?
3. Were there associations between aspects of instrumental learners’ experiences and road distances travelled between home and teaching sites?

Methodology

Data Collection and Research Context

The Music Education in the Digital Age (MEDA) project was a multi-year (2011–2019) software development and research collaboration between Queen’s University, Ontario and Concordia University, Québec, along with several other Canadian and international musical organizations, and studies were conducted in accordance with the Canadian ethics guidelines for

research, with the university ethics boards approvals. The first phase of this project has been reported elsewhere (Upitis, Abrami, Brook & King, 2017; Upitis, Abrami, Varela, et al., 2017; Upitis, Abrami, Brook, Boese, et al., 2017). The present paper results from an exploratory analysis of data collected as part of the project’s second phase, in which three linked surveys were intended to provide an improved understanding of private music lessons from the distinct viewpoints of teachers, students and their parents. The surveys were open between October 2015 and May 2016. To bolster response rates, participants were entered in a draw for one of nine \$500 CDN Amazon gift cards. The surveys took between 15 and 25 minutes to complete. Participants were assured that their answers would remain confidential. Surveys were publicized by participating institutions, through assistance from music schools, conservatories, summer camps and via social media.

A total of 9,785 Canadian instrumental students, teachers and parents participated in the three surveys and it is a large subset of these responses—for whom it was possible to geocode responses on the basis of supplied postal codes—which provide the data for this paper. Geocoded responses were categorized on a range of more rural to more urban home locations, with smaller subsets further categorized in terms of local deprivation and road distances. These processes enabled Phase 2 MEDA project data to be used to respond to the three research questions above.

Questionnaire Coverage

The parent and student questionnaires sought categorical and ordinal responses in the following common areas:

- Student demographic (e.g., age, sex, language spoken)
- Practical details regarding private music lessons (e.g., how long had lessons been undertaken, who made the decision to start, instrument played, whether a parent attends lessons, practice arrangements, etc.)
- Parents’ musical background
- Time spent by the student on non-musical extracurricular activities, chores, homework and leisure
- General perceptions of music learning

The parent questionnaire also sought background information on:

- Family characteristics (e.g., size, languages spoken, income bracket)
- Any barriers to progress faced by their child in relation to private music lessons

- Practical support for musical development (e.g., driving child to lessons or taking them to concerts and festivals)
- Parental background and education

The student questionnaire sought information on:

- Motivations to undertake private music lessons and music exams
- Home practice techniques, habits, and experiences
- Parental involvement in home practice
- Locus of control regarding musical accomplishments
- Performing experience
- Personal goals for music making
- Information on graded examinations
- Perceptions of parents' views on instrumental teaching and its value

The teacher questionnaire covered slightly different topics. Categorical and ordinal items explored:

- Enjoyable and challenging aspects of music teaching
- Years spent teaching and typical durations of teaching episodes, the range of instruments taught, location of teaching, numbers, age range and proficiency of students, group vs individual lessons
- Details of household income
- Demographic information relating to sex, background, education, languages spoken,
- Time spent teaching different aspects of music
- Styles of music taught, teaching and assessment methods, teachers' own musical education and professional development activities
- Music examination arrangements and students' attitudes towards these
- Students' attitudes towards individual practice and reasons for ceasing lessons
- Use of technology to support teaching and administration

Preparing and Geocoding the Questionnaire Data for Analysis

Postal codes were 'cleaned' and validated through manual and automated processing using Microsoft Excel. The free application programming interface (API) available at geocoder.ca was then used to obtain the Statistics Canada census 'dissemination area' (DA) and latitude/longitude coordinates associated with each participant's postal code. DAs represent the smallest area for which Statistics Canada publishes all data and each is home to an average population of between 400 and 700 people (Statistics Canada, 2017a).

Geocoder.ca has been successfully used for similar geocoding applications in research studies including within education (e.g., Card et al., 2010).

In total, 6,500 postal codes were successfully validated and matched. Specifically, there were 1,135 teachers, 3,167 parents, and 2,198 students that comprised the geocoded sample.

Contextual Variables

Each geocoded questionnaire response was associated with between one and three relevant contextual variables. Specifically, DAs and latitude/longitude coordinates were matched to publicly-available data on Canadian rural/urban population centers (Contextual Variable 1), deprivation (Contextual Variable 2) and road/driving journeys (Contextual Variable 3).

Contextual Variable 1: Exploring Teacher, Parent and Pupil Questionnaire Responses by Rural/Urban Population Centers

The Statistics Canada (2016) Geographic Attribute File (GAF) categorizes all DAs according to 'population center' status. There are three categories of 'population center', reflecting different sized urban conurbations, plus a further category which refers to DAs in rural areas. The latter are defined by populations of under 1,000 and have a population density of fewer than 400 persons per square kilometer. This method of identifying rural areas is widely used by researchers in various fields (e.g., Worden & Hambley, 2021), although other methods may also be employed in conjunction with the population center status rankings, such as geocoding respondent address fields against the urban boundary Geographic Information System (GIS) layers used by municipal entities.

Using the population center status method, each of the four DA categorizations is numbered in ascending order of population. In our study, the Statistics Canada categories were adapted to include a fifth category, to differentiate very large urban areas:

1. Rural area
2. Small population center (population of 1,000 to 29,999)
3. Medium population center (population of 30,000 to 99,999)
4. Large urban population center (population of 100,000 or greater) (Statistics Canada, 2017a)
5. Very large urban population center (population 500,000 and greater)

This was done to reflect the fact that just over two thirds of questionnaire participants were found to live in DAs categorized by Statistics Canada as large urban population centers—greater geographical resolution was thus desirable. This was achieved by taking all those participants living within a census dissemination area designated as a 4 according to the GAF and converting to a 5 if (a) if the GAF also showed that they lived in core (as opposed to on the fringe) of a ‘census metropolitan area’ with (b) a population of more than 499,999—on the basis of population data from Statistics Canada (2017b). The term ‘census metropolitan area’ is used by Statistics Canada to describe substantial conurbations of at least 100,000 people (with at least half this number living in the central ‘core’) and so participants allocated to this fifth

category can be regarded as living within central municipalities of the largest Canadian cities.

Collectively teacher, parent and pupil questionnaire participants were distributed amongst these five categories as shown in Figure 1. The ordinal nature of this categorisation meant that data gathered from participants living in all five types of area could be included in the analysis, enabling observations about the strength and direction of association between this contextual variable and the various questionnaire items to be made.

Contextual Variable 2: Exploring Teacher Survey Responses by Combined Deprivation Index

DAs for each teacher questionnaire participant were also matched with measures of social and

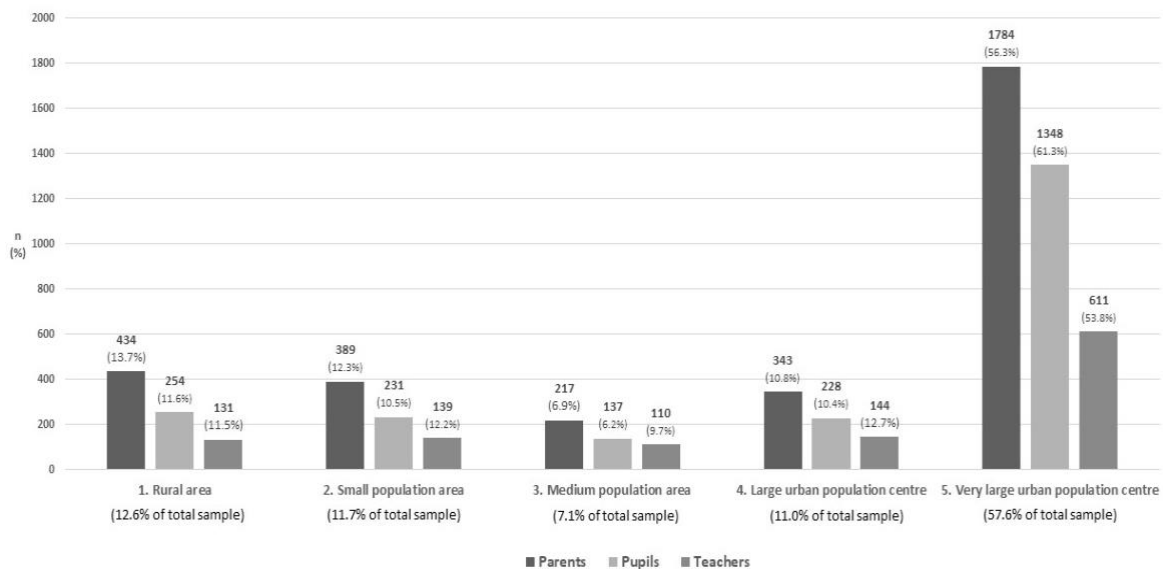


Figure 1: Geocoded Parent, Student and Teacher Questionnaire Responses by Adapted Population Centre

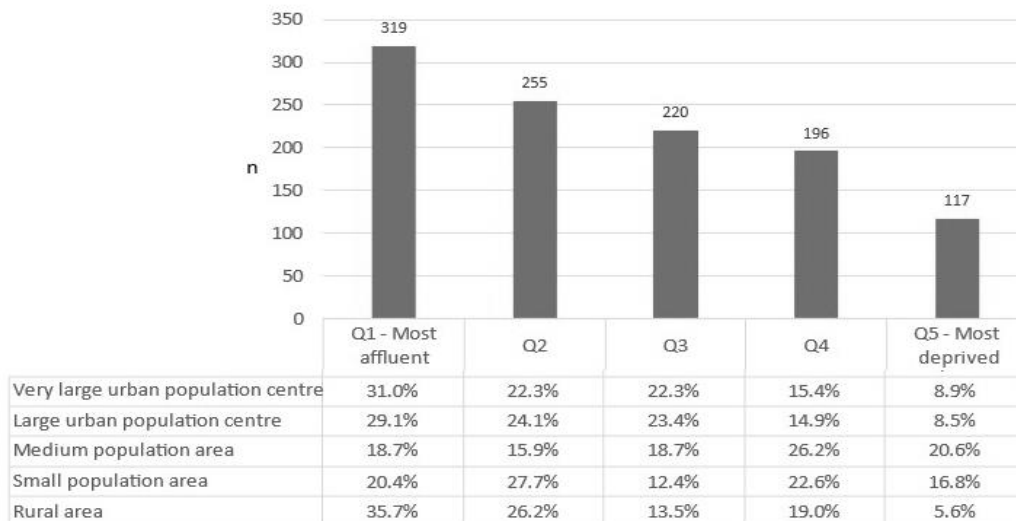


Figure 2. Distributions of Teacher Participants by the Combined Deprivation Index of Their Census Dissemination Area (DA) and Adapted Population Center

material deprivation, taken from the Institute National de Santé Publique's 2011 Deprivation Index (Gamache et al., 2019). "While material deprivation reflects the lack of everyday goods and commodities, social deprivation refers to the fragility of an individual's social network, from the family to the community" (INSPQ, 2019: online). Following a previous application of the Index by Neudorf et al. (2015), the social and material indices quintiles were combined to create a single, five-point index for each DA. Those DAs allocated a combined deprivation index of 1 are characterized to be amongst the most affluent quintiles in Canada, whilst those allocated an index of 5 are characterized to be amongst the most deprived quintiles.

This contextual variable was only matched to teacher questionnaire data to avoid the confounding effects of the 'ecological fallacy' in the cases of parent and pupil survey data. Instrumental teachers draw their students from the surrounding geographical area and so it is reasonable to consider the prevailing socio-economic characteristics of this area when exploring their professional experiences. For instance, teachers whose practices serve areas characterized by greater levels of deprivation might experience their work differently from those serving more affluent areas. In contrast, parents and instrumental students were responding to the questionnaires in relation to their own, individual experiences and so it was potentially unfair to make assumptions about these responses in light of aggregated socio-economic characteristics of the areas in which they live. Individual participants' circumstances might well be in line with these characteristics, but they might also be more affluent or more deprived.

Figure 2 shows the distribution of teacher questionnaire participants by the combined deprivation quintile for the dissemination area in which they live. It also shows the distributions of these quintiles in relation to adapted population center, although it is important to note that no statistically significant correlation was identified between these two contextual variables. Overall, teacher questionnaire responses were weighted towards areas of greater affluence. 28 teachers lived in DAs not included in the 2011 Deprivation Index, most likely due to various boundary updates undertaken in preparation for the 2016 census (Statistics Canada, 2017a). These participants thus could not be included in this part of the analysis. Again, the ordinal nature of these quintile categories facilitated statistical assessments of the strength and direction of their association with the various items on the teacher questionnaire.

Contextual Variable 3: Exploring Student-Teacher Home Distances

A distinctive feature of the Phase 2 MEDA survey data was that parents', students' and teachers' responses were linked where possible, via teacher names submitted within parent and student responses. This was intended to facilitate the exploration of common private music lesson experiences from the different perspectives of the three participant groups. One application of this linkage was to explore common aspects of parent and student survey responses by the distances between their home locations and teachers' home locations. A total of 233 parent-teacher matched records and 161 student-teacher matched records were available which included valid postal codes for both linked participants. In the case of the teacher data, however, the postal codes were understood to be for home addresses but not all instrumental teachers work from home. Therefore, matched records were only included in the analysis if teachers had indicated in another part of the questionnaire that they taught for more than 75% of the time in a home-based studio. In total, this left a combined total of 224 matched records.

Road/driving distances for each pair of matched records were obtained by submitting latitudes and longitudes to the Open Source Routing Machine's online API (<http://project-osrm.org/>). This API has been used in many transport-related studies, including Wessel et al. (2017) in the Canadian context. All but two of the resulting parent/student to teacher home distances ranged between 0 km (suggesting that the teacher lived in the same postal code as the student) and just less than 100km. The two remaining responses featured substantially greater, outlying distances of 140km and 500km. It was unclear whether these were genuine distances travelled by students or represented errors in postal code entry. Therefore, analyses to discern strength and direction of association with the various parent/student questionnaire items were undertaken with them both included and excluded. The median distance (with these outlying values excluded) was 6.24km. 15.8% of the students in the 224 paired records lived in rural areas, with 12.6% and 9% living in small and medium population areas respectively. A further 9% and 51% lived in large urban and very large urban population areas. Notably, however, there was no statistically significant association between Contextual Variables 1 and 3, indicating no clear pattern with regards to the relative distances that more urban- and more rural-dwelling families travelled to reach teachers' home studios.

Data Analysis

Data from individual questionnaire items were either ordinal or categorical. Contextual variables relating to population center and deprivation index were both ordinal, whilst student-teacher home distances were not normally distributed. This called for appropriate non-parametric statistics, undertaken using SPSS 26 and 27. For ordinal and scale-based data, the test adopted was Spearman's rank correlation. For categorical data the chi-square test was used and values for Cramer's *V* calculated in each case. 95% confidence intervals were derived for both tests.

Large sample sizes can result in statistically significant but trivially small results, the real-world significance of which is hard to determine. Thus, whilst the total valid sample sizes (6,500 overall) imply the possibility of detecting very small associations with high levels of statistical power (May & Looney, 2020), and whilst we acknowledge the somewhat arbitrary nature of any cut-off, for practical reasons our analysis focuses on statistically significant tests where computed confidence intervals place the true values of *rho* and *V* as very likely to be at or above Cohen's (1988) familiar thresholds for 'small' effects. Thus, results of Spearman's correlation tests were considered where the lower confidence bound of

$\rho \geq 0.1$. For the Chi-squared tests, values for Cramer's *V* were evaluated against Cohen's (1988) small effect thresholds for the relevant degrees of freedom, as advised by Zaiontz (2021). Finally, power calculations were undertaken using SPSS v27 and Zaiontz's (2021) *Real Statistics Resource Pack* v7.7.1 to ensure that, even when sample sizes dropped lower due to participant non-responses to some items, tests still maintained at least 80% power for the calculated values of *rho* and *V*.

The analysis of survey responses in reference to all three of these contextual variables is subject to (the caveat that participants were self-selecting and so responses may have been affected by provision and reliability of Internet connection. This said, whilst the availability of Internet connectivity has potential to be influenced by urban vs rural locale, Rajabiun and Middleton (2013) reported that over 80% of rural households in Canada had basic broadband access some three years before the current surveys were initiated. Personal dispositions to participate in research projects, potentially with the inducement of a prize draw for Amazon vouchers may also have impacted on the profile of those who took part. Finally, it is acknowledged that the geocoding processes employed resulted in the matching of two thirds of the total number of Canadian responses within this research project as a whole. We

Table 1

Chi Square and Cramer's *V* Test Results for Combined Parent/Student Items and Adapted Population Center

	Chi Square				Cramer's <i>V</i>			
	<i>n</i>	X^2	<i>df</i>	<i>p</i>	<i>V</i>	<i>df</i>	Lower conf. bound for <i>V</i>	Upper conf. bound for <i>V</i>
Main instrument played by student	4636	78.96	20	<0.01	0.07	4	0.06	0.09

Table 2

Values for *rho* for Parental Survey Ordinal Data and Adapted Population Centre (*n*=3167)

Questionnaire item	<i>rho</i>	Lower confidence bound for <i>rho</i>	Upper confidence bound for <i>rho</i>	<i>p</i>
In what other types of extracurricular activities does your child participate (chores/jobs/volunteering)?	-0.19	-0.22	-0.15	<0.01
For how many total hours during the week, including the weekend, does your child engage in chores or jobs or volunteering?	-0.17	-0.21	-0.13	<0.01
For how many total hours during the week, including the weekend, does your child do homework?	0.16	0.13	0.19	<0.01
How often do you take part in the following activities at this point in your child's musical development (attending concerts, festivals, or recitals)?	-0.15	-0.19	-0.12	<0.01
My child's teacher is a fine musician.	-0.14	-0.17	-0.11	<0.01
How many children do you have?	-0.14	-0.17	-0.10	<0.01
When you listen to your child make music, how pleased are you with his or her progress?	-0.13	-0.17	-0.10	<0.01

Table 3

Values for rho for Student Survey Ordinal Data and Adapted Population Centre (Contextual Variable 1)

Questionnaire item	<i>n</i>	<i>rho</i>	Lower confidence bound for <i>rho</i>	Upper confidence bound for <i>rho</i>	<i>p</i>
What was the grade level of your most recent playing or singing exam?	1771	0.17	0.12	0.21	<0.01
How often do you perform in festivals or competitions?	2198	-0.15	-0.20	-0.11	<0.01
My music teacher is someone I admire and respect.	2198	-0.15	-0.19	-0.11	<0.01

therefore know nothing about the home locations of the remaining participants and cannot include them within the analysis presented below.

Results

The results are reported in the order of the three research questions (RQ) posed earlier. Whilst the analysis procedures above were applied to all items on the relevant questionnaire(s), the focus is on results that were statistically significant and which met the quality thresholds outlined above.

RQ 1: Were there differences in engagement in and attitudes towards private music lessons based on whether students live in more rural or more urban settings?

In order to address this first research question, student and parent questionnaire data were assessed for association with Contextual Variable 1. A range of statistically-significant, appropriately-sized associations were obtained (Tables 1, 2, and 3).

In the case of several categorical questionnaire items which were identical in both parent and student surveys, these data were analyzed collectively via Chi Square tests to maximize test power. Table 1 shows the only test which produced a statistically significant outcome with an statistically significant values for *rho* in relation to parent survey ordinal data. There were no statistically significant Chi Square tests for parent survey categorical data.

Table 3 reports statistically significant values for *rho* relating to student survey ordinal data. There were no categorical responses which resulted in statistically significant Chi Square results with sufficiently sized values for *V*.

RQ 2: Did teacher experiences and studio practices vary according to (a) rural/urban geographies and/or (b) prevailing local levels of deprivation or affluence?

appropriately-sized value for *V*. This related to the distribution of the top six instrument types learned by students across the five adapted population center categories.

Overall, piano dominated to a large degree, accounting for between 75% and 79.9% of instrument types with no clear pattern of alignment with regards to more rural or more urban areas. Several other types of instruments were represented in small proportions but these again remained very stable across the different kinds of population center, again suggesting no significant variation from more rural to more urban areas (woodwinds: 1.1%–3.3%; strings: 6.6%–8.7%; guitar: 1.2%–2.4%; brass: 0.5%–1.2%). However, there was a prominent difference in relation to first study singers. Specifically, voice accounted for between 10.76% and 13.32% of main instruments in rural areas and those with small populations but only between 5.12% and 8.16% in urban areas with large or very large populations. (The raw parent and student survey data also included very small numbers of responses which gave organ, accordion and percussion as the main instruments played. However, these 24 responses were omitted from this particular analysis to obtain a valid Chi Square test; recategorizing them as a combined group was not sufficient in this case.) Table 2 reports

In order to address the second research question, these data were assessed for statistically-significant, appropriately-sized levels of association with Contextual Variable 1 (for RQ 2a) and Contextual Variable 2 (for RQ 2b).

Table 4 provides statistically significant values for *rho* for teacher survey ordinal items in relation to Contextual Variable 1. Additionally, there was one appropriately-sized, statistically-significant value for *rho* that was identified between teachers' total household income and Contextual Variable 2 (*rho*=-0.19 [-0.26, -0.12], *p*<0.01, *n*=717). There were no categorical survey responses which resulted in statistically significant Chi Square results with appropriately sized values for *V* for either contextual variable.

Table 4

Values for rho for Teacher Survey Ordinal Data and Adapted Population Centre (Contextual Variable 1)

Questionnaire item	n	Rho	Lower	Upper	p
			confidence bound for rho	confidence bound for rho	
What styles of music do you teach? Sacred or religious?	1135	-0.24	-0.30	-0.18	<0.01
How many of your students take lessons from you in a music school or conservatory?	1135	0.20	0.15	0.25	<0.01
How often do you engage in these types of professional development activities? Attend a music festival to hear students perform	1135	-0.18	-0.24	-0.12	<0.01
How much of your household (family) income comes from music teaching?	1135	0.18	0.12	0.24	<0.01
What is your highest level of formal education?	1073	0.17	0.12	0.23	<0.01
How many of your students take lessons from you in your students' homes?	1135	0.16	0.10	0.21	<0.01
What percentage of your students took at least one performance exam in the past year?	1135	0.16	0.10	0.21	<0.01

Table 5

Chi Square and Cramer's V Test Results for Combined Parent/Student Items and Quartilized Student-Teacher Home Distance (Contextual Variable 3)

	Chi Square				Cramer's V			
	n	X ²	df	p	V	df	Lower conf. bound for V	Upper conf. bound for V
Who made the decision to start instrumental lessons?	215	16.65	6	<0.05	0.20	2	0.15	0.31

RQ 3: Were there associations between aspects of instrumental learners' experiences and road distances travelled between home and teaching sites?

As noted in relation to RQ 1, a subset of ordinal and categorical items were common to both student and parent questionnaires. These were analyzed for statistically significant associations with student-teacher home road distances (Contextual Variable 3), which were arranged into quartiles for the purpose. As noted, the analysis was undertaken first with the two outlying distances included and then with them excluded. The test outcomes, however, remained equivalent. Table 5 provides the Chi Square and associated test results for the one item which was found to have a statistically significant level of association with Contextual Variable 3 (in this case, with the two outlying distances excluded). This related to who in the learner's family had made the decision to start instrumental lessons. The parent and student surveys both asked participants to indicate whether parents/guardians made the decision, whether the student had made the decision themselves or whether they had decided together (it was also

possible for participants to indicate that they could not remember who made the decision, and the seven responses who responded in this way were excluded from the test).

The nature of this association can be seen in Figure 3. Where the student-teacher home distance is under 3 kilometers, it was more likely that parents and students made a joint decision regarding music lessons, whereas the opposite was the case with distances of 11.7 km or greater.

Discussion and Conclusion

First it is important to acknowledge that the results put the various identified associations between questionnaire items and the three contextual variables in the category of *small effects* in Cohen's (1988) terms. On the other hand, because of the robust nature of the analysis methods used (i.e., firstly, establishing that all tests had sample sizes sufficient for a minimum of 80% power and, secondly, evaluating statistically significant values for rho and V only where lower confidence bounds indicated true values at or above the small effect threshold), one can be confident that these are associations with real-world meaning

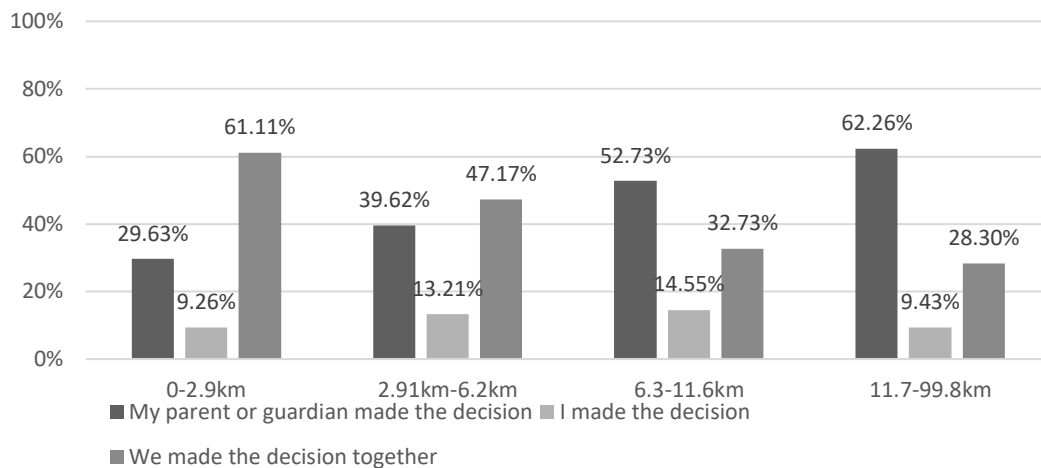


Figure 3: Quartilized Student-Teacher Home Distances, Categorized by Decision to Start Instrumental Lessons

and relevance. In fact, Funder and Ozer's (2019) recent reassessment of Cohen's guidelines has suggested that, when reliably estimated, "an effect-size r of .10 indicates an effect that is still *small* at the level of single events but potentially more ultimately consequential" (p. 166, emphasis in original). Funder and Ozer's suggestion is made partially on the argument that some effects are cumulative over the longer term rather than 'one-off' in nature. This may well be the case for many of the results here, for instance, the clusters of results relating to participation in community music-making events (whereby positive experiences from an initial engagement might lead to repeated participation) and parental and student attitudes towards teachers (whereby positive views of teachers might be sustained and developed over time in successful teaching relationships). All the same, one needs to interpret these small levels of association carefully within the context of the specific domain under study and so the following discussion carefully considers the findings in the light of existing literature whenever possible. Moreover, given that we are dealing with *associations* between participant and contextual variables where causation cannot be easily ascertained, the discussion attempts to explore results from both urban and rural perspectives, the latter also being an important means of remaining reflexive regarding the possibility of inherent urbanormativity within the analysis.

Across all three surveys, there was evidence of a small, negative association between involvement in communal music making events such as festivals, competitions and concerts, and adapted population center. In other words, reported involvement in such events increased slightly as local population size decreased: students performed

more regularly, whilst parents and teachers attended more regularly. A related finding was the negative association (the largest amongst our results overall) between this same contextual variable and the frequency with which teachers taught religious music to students. Rural churches have been historically strong in Canada, serving not only as places for religious worship, but also as central to the cultural life of rural communities. These churches are often the only large meeting place in town and are used by non-church groups as well as for church functions (Brook, 2011; Lammers-Helps, 2014).

A further consideration here was the slightly larger proportion of students studying voice within rural areas and those with small populations. Again, this might have been due to greater participation in choirs or church service in these areas. Rural churches have not escaped the downward trend for Christian services, and combined with rural depopulation, a number of rural churches have closed. That being said, many rural churches are thriving through innovative approaches to engage the community (e.g., employing youth pastors) (Lammers-Helps, 2014).

Together, these findings lend some support to the arguments in the literature review highlighting the personal, social and community benefits of collaborative or collective music making in more rural areas. Moreover, the fact that we observed these associations across all three groups of participants suggest that there is potential for such activities to impact on those of different ages and social positions, i.e., the young people learning to play and sing, and also the parents and teachers who facilitate this.

A related set of findings concern parental and student attitudes towards teachers and their impact

on musical progress. Specifically, we observed small, negative associations between the levels of esteem held for teachers (students: ‘my music teacher is someone I admire and respect’, parents: ‘my child’s teacher is a fine musician’) and adapted population center. As local population levels decreased, this esteem increased. Similarly, parents’ reported pleasure in their children’s musical progress was also negatively associated with adapted population center. Together, these results offer tentative support to arguments such as those made by Bates (2018), that in more rural situations, where there are potentially fewer students and teachers, close intergenerational bonds are likely, and more aspects of the music lessons might reflect locally-valued traditions and resources. It is also possible that when the local population of music teachers is lower, and those who are present fulfil multiple roles in the community (e.g., teaching privately, in local schools, leading local ensembles and perhaps playing organ in church), there is perhaps less opportunity on the part of parents to engage in what has been termed ‘scanning the market’ (Connell, 2008, p.188) to identify what are perceived to be the ‘best’ educational opportunities from amongst those available.

Other work in the area of instrumental music learning has suggested a class-based tendency to engage in such practices. For instance, Purves (2019) draws on Connell’s notion of ‘neoliberal parenting’, whereby middle-class parents who are more adept at navigating educational ‘markets’ are well-placed to source advantageous opportunities for their children. Here, the raw data does not support speculation on the influence of social class, and we also note the absence of statistically significant associations between adapted population center and various parental questionnaire items relating to family education, wealth and other demographics. However, the slightly increased levels of esteem for teachers and satisfaction with the private music lessons received in less populated areas might, in this case, suggest that there is simply not enough competition amongst local music teachers to result in such a ‘market’. Moreover, the esteem in which local music teachers are held, combined with the higher participation in community-based musical events noted above might result in greater satisfaction with the lessons received, outweighing any potential desire to find the ‘best’ teacher possible.

Further evidence for such an interpretation may be found in the two results relating to the taking of instrumental examinations. Firstly, the percentage of teachers’ students who took at least

one performance exam in the previous year was positively associated with adapted population center. This same contextual variable was also positively associated with the most recent examination grade taken by students. To a small degree, then, instrumental exam taking itself, and the grade of the examinations being taken, both increased with local population size. One possibility here is that instrumental exams have slightly greater significance in more urban settings, where the larger size of the local private music lessons ‘market’ and the inherent competition that this produces, may lead to greater focus on standardized measures of outcomes and accountability. In contrast, as we have seen, it may be that those learning, parenting and teaching in less populated areas regard other outcomes of lessons—such as involvement in communal music making events—as a more relevant gauge of musical ‘progress’. Although not drawn on rural versus urban lines, Voitovitch-Camilleri’s (2019) analysis of the Canadian music examinations system nonetheless differentiated between families who “seek validation of the investment made in their children’s music education that is tangible and applicable in the future” and those who favor “a relaxed pace of recreational learning and exploration” (p. 206).

Parents were asked to indicate how frequently their children undertook various non-musical kinds of extracurricular activities, and several of these items exhibited small associations with adapted population center. Negative associations were observed with both the total time spent undertaken chores, jobs, and volunteering activity and the frequency with which these tasks were undertaken. It is tempting to think that children undertake more of these tasks in less populated areas due to the need for all family members to ‘help out on the farm’, or to augment lower household incomes. However, these could well be urbanormative assumptions and no statistically significant association between adapted population center and parents’ reported household income was found. An alternative explanation might be that these young people are part of a social capital framework of the kind highlighted by Prest (2016) and Putnam and Feldstein (2003). Indeed, an earlier study on youth volunteering in Canada reported participation rates amongst 15- to 19-year-olds in rural areas as higher (41.8%) than in urban areas (35.8%), the most common reasons given for volunteering overall being belief in the cause, using skills and experience, and the exploration of one’s strengths (Jones, 2000). In addition, studies have demonstrated that rates of volunteering tend to be

higher in rural areas overall (e.g., Turcotte, 2005), and further, that people who attend religious services generally exhibit higher rates of participating and volunteering (Lodi-Smith & Roberts, 2007; Vezina & Crompton, 2012). This is in keeping with the earlier observation that churches are often central to rural communities. In this context, the further, positive association between population size and the hours spent on homework is of interest, because it may highlight slightly different priorities for families living in more urban areas. In an important contrast, the amount of musical practice undertaken each week was not found to vary significantly by local population size.

Our finding of a small negative association between family size and adapted population center echoes official Canadian data which suggests higher fertility rates in some provinces and territories with more rural populations (Galbraith et al., 2019). It has been observed that the parents of larger families can face challenges relating to the necessary division of various forms of financial, human, and social capital to support their children (Parcel & Dufur, 2001). In the context of the present discussion, this raises questions over how families might manage the various investments of time, money, travelling and social engagement involved in sustaining private music lessons for more than one child, not to mention supporting school and other extracurricular activities. On this, one might speculate perhaps that earlier points regarding associations between greater rates of volunteering and community music making in more rural areas are germane, and that engaging in these wider social networks might be one way in which this diffusion is offset.

There was evidence from the teacher survey data that the nature of the sites used to provide private music lessons was associated with the adapted population center. Perhaps reflecting the urban location of many such institutions, greater amounts of teaching in music schools and conservatories took place in more populated areas. It was also the case that teachers visited students' own homes to provide lessons slightly more frequently in areas of higher population. The latter may perhaps represent a convenience associated with the notion of private music lessons as a 'service industry', with those teachers prepared and able to travel in this way gaining a market advantage. Or, drawing on the literature review, this association could again be regarded from the other perspective, where the studios of instrumental teachers in less populated areas might be regarded as something akin to a community 'hub'.

There were also small but significant associations between aspects of teachers' income and both contextual variables 1 and 2. With regards to the first of these, the proportion of household income derived from music teaching was positively associated with adapted population center, suggesting that those teaching in more urban areas tended to be also less reliant on musically-unrelated forms of income. This may point to the possibility of larger private music teaching practices in more highly populated areas, or that greater competition means that those teachers able to meet the demands of the 'market' are able to command higher fees. Conversely, it might indicate that, within more rural areas, private music tuition is more frequently combined with other forms of non-musical work. With regards to the second contextual variable, it was observed that the local level of combined deprivation was negatively associated with teachers' total household income. In other words, teachers whose local areas were regarded as more affluent tended to also be those with higher household incomes overall. Importantly, the absence of a statistically significant association between Contextual Variables 1 and 2 in the case of our teacher data does not suggest that teachers' incomes are especially lower in areas characterized both by greater rurality *and* greater levels of combined deprivation.

In another part of the teacher questionnaire, participants were asked to indicate their highest level of formal education on an ordinal range from 'some secondary/high school education' up to 'postgraduate degree (e.g., PhD or DMA)'. This item also resulted in a small, positive association with contextual variable 1, suggesting that teachers living in more urban areas were also those who had slightly higher qualifications overall. This may again relate to proximity to the institutions providing these qualifications, but it also seems possible that some of the same challenges which the Canadian Council on Learning (2006) identified in relation to Canadian schools might apply here, i.e., that those music teachers with higher qualifications are economically attracted to urban locations. Or it may be that, once again, a need to stand out in a more crowded urban marketplace drives music teachers to achieve higher qualifications. It is also possible that teachers in rural areas establish their credentials in ways less reliant on institutional capital, for instance through length of service in a single locality, holding more than one local musical role, or via other forms of community engagement.

In relation to the third research question, as noted above, there was evidence of a small

association between who made the decision to start private music lessons and the road distance from students' homes to teachers' home studios. Despite confirmation of sufficient statistical power for this smaller sample, there remain some caveats in relation to this finding, not least that this smaller group will not have the same degree of geographical coverage as the larger samples considered above. Moreover, the analysis makes assumptions about mode of travel, whether parents accompany their children on journeys to lessons, and whether teachers receive all students in their home. All this said, amongst the quarter of responses with the shortest student-teacher home distance, some 60% of students reported starting lessons following a joint decision with parents whereas some 30% had started following a parental decision. However, this balance was reversed amongst the quarter of responses with the longest student-teacher home distances. In comparison, it was notable that the proportion of students who started lessons having made the decision themselves remained relatively similar irrespective of the distances involved.

Importantly, the lack of a statistically significant relationship between total travel distance and adapted population center confirms that these differences did not fall on rural versus urban lines. Instead, it is possible that this may be linked to the level of 'investment' (in terms of time, money, and effort) in their child's musical learning that some parents are willing and able to make (Ilari, 2018). In contrast, in situations where shorter distances were required to reach a teacher's studio, it may be that the time, costs and effort of travel could be taken out of the decision-making process, enabling parents and their children to reflect together on other considerations relating to starting instrumental tuition.

Overall, these findings indicate that some oft-suggested barriers to engagement with private music lessons, such as levels of familial wealth and education or the distances which must be traversed to reach appropriate provision, do not appear to be significantly aligned towards either more rural or more urban Canadian settings. Yet they also highlight the potential risk of implicitly adopting an urbanormative lens when considering further, and apparently-pervasive aspects of contemporary private music lesson provision. For instance, our findings suggest that some parent and teacher behaviors associated with marketization, learners' taking of instrumental examinations and teachers' acquisition of musical qualifications were prevalent in more urban locations. In contrast, the alignment between less populated areas and various

questionnaire items related to family- and community-focused music making, teacher esteem, and wider volunteering emphasizes the importance of taking social capital perspectives into account when assessing provision in more rural settings.

Implications for Practice and Further Research

These results offer tentative support to the view that in increasingly rural situations, where there are potentially fewer students and teachers, closer intergenerational bonds are possible, and more aspects of private music teaching practice might reflect locally-valued traditions and resources. In such contexts, efforts by individual teachers and the broader community to organize collective music making activities can have valuable social as well as musical outcomes. The home teaching studios of teachers located in more rural areas may also have a greater significance as community 'hubs' than in more urban areas. As such, whilst those musicians commencing careers in more rural areas may encounter a financial need to diversify their practice beyond teaching, it may also be that parents in these areas set great store by wider community involvement. Consequently, there might be less emphasis on exam success or higher qualifications than might be the case in increasingly urban locations. There is also a suggestion that private music teachers in more rural areas may benefit from regarding pupils as part of rich social and family networks involving various forms of community reciprocity and volunteering. Additionally, the results reiterate the strong levels of investment some parents in both more rural and more urban areas are prepared to make to realize their aspirations for their children's musical development—in this case distances commuted to reach private lessons.

The analysis raises a number of questions that might guide future research. A qualitative and focused study in a few rural communities could next be undertaken, where more of the complexities of social capital, teacher roles, and intergenerational ties might be unraveled. A more refined definition of rural communities might also be considered, in line with recent trends with Statistics Canada, where a "remoteness index" is being explored as an alternative to the population center method used in the present study (Subedi et al., 2020). A further avenue for research stems from the hybrid environments created as a result of the COVID-19 pandemic. As noted in the literature review, this a time when music, place and the environment, and the challenges and opportunities provided by technology are intersecting in ways

that we are only beginning to understand and it will be important to assess the extent to which these new hybrid environments can retain, and perhaps even promote, some of the distinctive features of rural instrumental music education identified in this study.

Ethics: This study received ethical approval from Queen's University, Ontario General Research Ethics Board (#6006989) and the University College London Institute of Education Research Ethics Committee (REC 1257)

Acknowledgements: This work was supported by a partnership grant from the Social Sciences and

Humanities Research Council of Canada (895-2011-1000). Geocoding was provided by GeoCoder.ca. Use was made of the Statistics Canada Geographic Attribute File, 2016, which was reproduced and distributed on an "as is" basis with the permission of Statistics Canada. The Institut national de santé publique du Québec Index of material and social deprivation was compiled by the Bureau d'information et d'études en santé des populations from 1991, 1996, 2001, 2006, 2011 and 2016 Canadian Census data. Map data copyrighted OpenStreetMap contributors. We are grateful to the students, teachers, and parents who completed the surveys that form the basis of the current study.

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Suggested Citation:

Purves, R. M. & Upitis, R. (2022). A geographical analysis of canadian students taking independent music lessons: The rural experience. *The Rural Educator*, 43(4), 15–31.

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