Setting the Stage: Overview of Data on Teachers and Students in Rural and Urban Canada

E. Dianne Looker and Ray D. Bollman

Abstract With new analyses of Statistics Canada data from the census and the annual Labour Force Survey and other sources, we examine the trends and current situation of teachers and students in rural (versus urban) Canada. The research literature documents concern about the ability of rural communities to attract and keep experienced teachers and closures of small rural schools. After considering trends in the number of school-aged children, the number of graduates from Bachelor of Education programmes in Canada, and the number of teachers hired in Canadian schools, we present details of the employment situation of rural and urban teachers. We find few overall rural–urban differences in teacher employment experience, including various measures of "teacher turnover", which perhaps reflects the strength of teacher unions. However, there are important differences among rural areas, with those areas farthest from urban centres showing more teacher mobility. Looking at the important intersection of Aboriginal Identity and rural location, we discover that much of the well-documented overall rural–urban difference in high school dropout rates reflects the differential distribution and the complex situation facing those with an Aboriginal Identity. Implications for research and policy are briefly explored. (Detailed charts by province are available in Bollman, 2020.)

Keywords Rural · Teachers · Teacher supply · Teacher demand · Teacher working conditions · Aboriginal students · Drop-out rates · Demographic change · Time trends

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M. Corbett and D. Gereluk (eds.), *Rural Teacher Education*,
https://doi.org/10.1007/978-981-15-2560-5_2

1 Introduction

Schools are key public institutions. Not only is attendance in some form of schooling compulsory, but most children attend schools funded by tax dollars and staffed by teachers paid by tax dollars. These facts make it important to understand the provision of this schooling, including the supply and demand for teachers, and the constraints and challenges facing teachers and students in rural and urban areas.

To set the stage for the chapters that follow, this chapter will present some key data from Statistics Canada[1] that highlight some factors of teacher supply and demand, as well as looking at a range of issues relating to both students and teachers, including school attendance rates, high school graduation rates, teacher employment, and turnover in rural as compared to urban areas. Section 2 explains how we measure the concepts of rural and urban in this chapter.

We will also look at the important impact of trends in the portion of the Canadian population who identify as having Aboriginal Identity.[2] As we will see, the age projections for those with an Aboriginal Identity indicate that this will be a fast-growing segment of the Canadian population. Further, rural areas have much higher concentrations of those with an Aboriginal Identity (10% in rural/non-metro areas compared to 5% in Canada as a whole) (Statistics Canada, Census of Population 2016). So, it is critical, in any discussion of rural issues in Canada, to see how Aboriginal Identity intersects with rurality.[3] Some issues which have been thought

[1] Some of the data presented are available on Statistics Canada website, but most of the reported data come from special requests submitted to Statistics Canada, and are not elsewhere published. The authors would like to acknowledge the funding provided by the Norwegian Research Council for the generation of these special tabulations. These data are now in the public domain and are available from the authors upon request. Selected charts by province are provided in Bollman (2020).

[2] We acknowledge that the term "Indigenous" has replaced the term "Aboriginal" in some recent discourse. We have chosen to use the designation of "Aboriginal" Identity because that is the term still being used in the Labour Force Survey and was used in the 2016 Census of Population, when respondents were asked whether they identified as an Aboriginal. Aboriginal Identity was derived from data collected in three questions: (1) Aboriginal group (respondents could respond "Yes, First Nations (North American Indian)", "Yes, Métis", "Yes, Inuk (Inuit)" or "No, not an Aboriginal person"); (2) Registered or Treaty Indian status ("No" or "Yes, Status Indian (Registered or Treaty)"); and (3) Membership in a First Nation or Indian band ('No' or "Yes, member of a First Nation/Indian band"). Aboriginal Identity is a derived variable. For more information on the input variables for the Aboriginal Identity variable in the 2016 Census of Population, refer to the definitions for Aboriginal group, Registered or Treaty Indian Status and Membership in a First Nation or Indian Band (Statistics Canada 2018). Statistics Canada notes that users should be aware that *the estimates associated with this variable are more affected than most by the incomplete enumeration of certain Indian reserves and Indian settlements in the Census of Population*. For additional information on the collection and dissemination of Aboriginal data, including incompletely enumerated reserves and settlements, refer to the Aboriginal Peoples Reference Guide, Census of Population, 2016 and the Aboriginal Peoples Technical Report, Census of Population, 2016.

[3] In this volume, see Scott and Louie (2020), Scully (2020), Wallin and Peden (2020) and O'Connor (2020).

of as essentially rural (such as lower rates of high school completion) may well relate more to the complex status of Aboriginal peoples.

This chapter is not designed to explore particular theoretical issues. Rather, the focus is on providing a broad stroke picture of students and teachers in rural as compared to urban parts of the country.

A key finding is that many rural–urban differences documented in the research literature really reflect differences between *remote* rural areas and all other rural areas. That is, there are important differences *among* rural areas. Further, much of the "rural" population of Canada lives in "rural" areas within commuting distance of larger metropolitan centres. These urban-adjacent rural areas are often more like the near-by metropolitan areas than they are like the rural remote areas, in terms of many of the characteristics which we examine. Thus, despite there being some important attributes in smaller, remote rural areas that are often causes for concern in educational circles, there are fewer "rural–urban" differences among students and teachers than one might expect, when "all" rural areas are compared to urban areas.

2 What Is "Rural"?

We focus on rurality as a spatial concept. Others suggest rural is a social construct (Halfacree 1993) or a "state of mind" (Allen 1973). As a spatial concept, rural may be considered to have two key dimensions: density of population (or population size of the settlement) and distance-to-density (Bollman and Reimer 2018; Reimer and Bollman 2010; World Bank 2009). Various thresholds of density and distance-to-density have been used to classify population as rural and urban. In this chapter, for most of the discussion, we have chosen to use *metro* to represent "urban" and to use *non-metro* to represent "rural".

In our analyses, "metro" refers to census metropolitan areas (CMAs) which have a population of 100,000 or more (with 50,000 or more in the built-up core) and includes the residents of all neighbouring towns and municipalities where 50% or more of the employed residents commute to the built-up core. Thus, "non-metro" refers to individuals residing outside metro areas.[4]

This way of classifying the population as urban and rural is based on a couple of considerations:

- A scan of the "Rural and Small Town Canada Analysis Bulletins" published by Statistics Canada (Statistics Canada 1999–2012) indicates that towns and cities with a population less than 100,000 have socio-economic characteristics that more

[4]See Bollman (2020) for details.

closely align with the characteristics of the population in rural and small town areas and align less with the population of metro areas.[5]

- Important data on the trend over time regarding the demand for teachers and the supply of teachers were more easily available for the metro and non-metro delineation. Specifically:
  - Statistics Canada's programme for annual demographic statistics publishes annual estimates of the population for each single year of age for each CMA in Canada. By summing the CMAs within each province and subtracting these figures from the province-total population by single year of age, we calculate the level and trend of the school-aged population in non-metro areas for each province.
  - Statistics Canada's Labour Force Survey (LFS) publishes monthly data on the number and characteristics of those employed in each occupation. We selected the occupation of elementary school and kindergarten teachers and the occupation of secondary school teacher. The sample size of the LFS for metro areas and non-metro areas was large enough for each of these occupations to generate a time series of the level and trend of the supply of teachers in non-metro areas.

There are important differences *within* the non-metro population which, for some measures, we are able to we document with data from the 2016 Census of Population by dis-aggregating the non-metro population into the following groups:

- *Census agglomerations* (CAs) have at least 10,000 in the urban core and include the population of neighbouring census subdivisions[6] (CSDs) where 50% or more of the employed residents commute to the CA. For the population living outside CMA/CA areas, the population is classified according to their *Metropolitan Influenced Zone (MIZ)* (Statistics Canada 2018):
  - Strong MIZ includes the population of all CSDs where 30% or more of the employed residents commute to a CMA or CA;
  - Moderate MIZ includes CSDs where 5% to 29% of the employed residents commute to a CMA or CA;
  - Weak MIZ includes CSDs with some commuters, but less than 5% of the employed residents commute to a CMA or CA;
  - No MIZ refers to CSDs with no commuters to a CMA or CA. (However, there are still many workers who commute to smaller centres [Harris et al. 2008]); and finally
  - Residents of the Territories who live outside the CAs of Whitehorse and Yellowknife are classified as "Non-CA Territories".

[5]The Rural Ontario Institute (ROI) is one of the few organizations which regularly publishes systematic statistical data on rural areas. The ROI has chosen the "metro vs. non-metro" delineation to portray the urban and rural population in Ontario in their series of "Focus on Rural Ontario" Factsheets (Rural Ontario Institute 2013–Present).

[6]A census subdivision (CSD) is the general term for municipalities (as determined by provincial/territorial legislation) or areas treated as municipal equivalents for statistical purposes (e.g. Indian reserves, Indian settlements, and unorganized territories) (Statistics Canada 2018).

The analysis of the results by the MIZ classification shows the nature of differences within rural areas.

3 Data Sources

With a few exceptions, the information presented is from either the LFS or from Canadian census data. An advantage of the LFS is that it provides information on more points over time, giving us some important information about shifts in teacher employment over the last couple of decades. Further, it asks a lot of detail about *type* and terms of employment that are not covered in the census. However, the LFS is restricted to those over 15 years of age, and it *excludes* those living on First Nations' reserves. It is important to note that the LFS is based on a sample, and the limited sample size precludes some detailed analyses at the subprovincial level. The census, while more comprehensive in its geographic coverage, is taken only once every five years, and it covers a more limited number of topics.

As a result of the types of data available, for many of the analyses we do not have details on the non-metro areas broken down into those rural areas which are distant from urban centres versus those which are closer (i.e. "Metropolitan Influenced Zones" or "MIZ"). If there are key differences among rural areas, as there no doubt are, these may not be evident in the graphs we present based on LFS data.

Nevertheless, it is important to take into consideration the relative size of the populations being discussed. Overall, in Canada, in 2016, the census tells us that 71% of the population lived in metro areas of 100,000 or more. The 29% in non-metro areas include: 12% in census agglomerations of 10,000–99,999; 6% in strong MIZ; 7% in moderate MIZ; 4% in weak MIZ; 1% in no MIZ and less than 1% in the rural and small town areas of the territories (summarized in Fig. 1).

We will see in some of the graphs later in this chapter that for many of issues for which there is a large difference by rural location, the differences arise in the weak MIZ and the no MIZ areas and in the rural and small town areas of the Territories versus other areas. When interpreting these patterns, it is important to keep in mind that these three areas together represent about 5% of the total Canadian population. This fact does not make them unimportant, but it may be relevant to discussions of priorities in policy discussions. Further, the experiences of teachers in these more rural remote areas will likely differ from the experiences of those who live and work in more urban-adjacent "rural" areas.

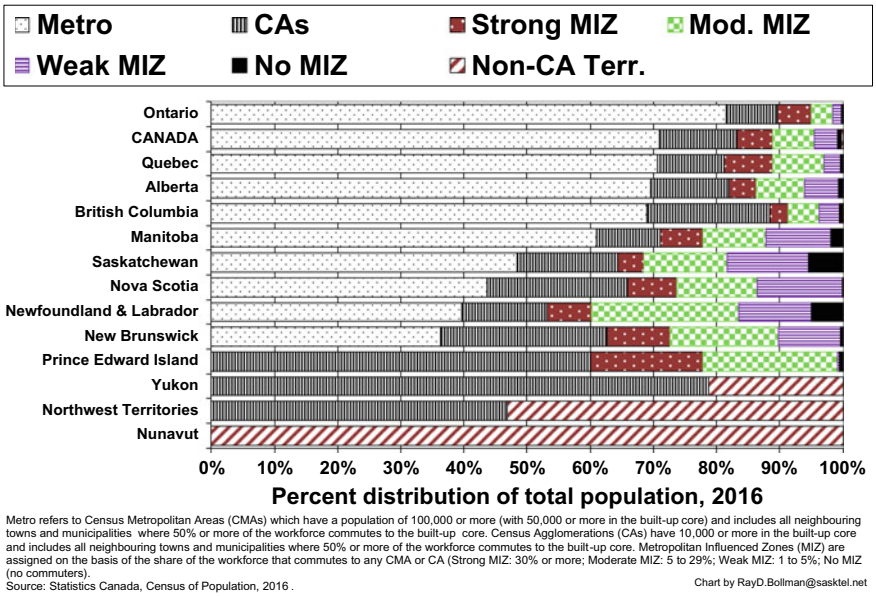

Fig. 1 Per cent distribution of the total population by Metropolitan Influenced Zone, Canada, provinces, and territories, 2016

4 The Issues

4.1 Decline in School-Aged Children

A key issue in many rural communities is a general decline in the population (but see Bollman 2017[7]), and a specific decrease in the number of children and youth. A serious decline in school-aged children often leads to pressure to close or amalgamate schools, pressure that is often resisted by rural communities.[8]

[7] Bollman (2017) presents the interesting finding that many rural communities are growing. However, since a key part of being a "rural" community is population size, when a community grows past a certain size, it is reclassified as "urban". So, rural "success stories" are often lost as communities become reclassified. See Fig. 4 in Bollman and Clemenson (2008) and their appendix "The rural quandary: Analyzing geographic data over time" that describes the quandary between reporting data over time for the "rural concept" or for a specific geographic delineation.

[8] The decision about whether to close or amalgamate a rural school typically falls to the local school board or the provincial Department of Education. However, one could argue that the underlying population dynamic is more the purview of the local social and economic development agencies, working with the community to attract and keep young families with school-aged children. The school administration is typically blamed for the decision to close a school where, arguably, it is the mandate of community stakeholders to maintain and to build the school-age population in order to justify keeping the school open. That said, see Corbett and Mulcahy (2006). This debate is the context within which we provide selected statistical indicators related to rural schools. For a map of

Galway (2015) talks about the enrolment declines in rural areas of Atlantic Canada, echoing Dibbon's (2002) analysis which is specific to Newfoundland and Labrador. The concern is that the "…school-aged population is declining at a precipitous rate…" (Dibbon 2002, p. 6). The provincial government department of Saskatchewan Learning notes a similar pattern in Saskatchewan where "significant decreases in both student enrolments and the number of educators required are projected" (Saskatchewan Learning 2007, p. 11). Corbett and Beck (2016) also reference the concern about a population implosion in rural areas as feeding part of the discourse about rural schooling.

This population decline may be attributed to (a) an ageing population, reflecting an out-migration of young adults in their childbearing years and/or an in-migration of older individuals, and/or (b) a decline in fertility among young adults (Galway 2015). The out-migration of youth and young adults is well documented in many regions of Canada (Bollman 2018; Dupuy et al. 2000; Galway 2015; Looker 2013; Looker and Naylor 2010a). The issue is not only that youth leave to pursue post-secondary education (see Corbett 2007), but that many fail to return. Since few young adults move from urban to rural areas (Dupuy et al. 2000; Looker 2013; Swanson and McGranahan 1989), this out-migration of rural youth means there are fewer young adults of childbearing age to increase the local population.

4.2 Rural–Urban Patterns in the Demand for Teachers

Of course, there is concern, especially among rural communities themselves, about declining populations and declining numbers of school-aged children because of the impact these declines have on schools in rural areas. In addition to the threat of closing and amalgamating schools, there are the frequently reported issues of (a) the supply of teachers to replenish those who are retiring, and (b) the challenge of recruiting (and retaining) teachers in rural and remote communities. See the related chapters in this volume (Gereluk et al. 2020; Murphy et al. 2020; Danyluk et al. 2020; Stelmach 2020).

Kitchenham and Chasteneuf (2010) highlight the impact of teacher retirements. They note that, in Northern Canada, "There is an overall anticipated shortage of teachers because the retirement rate has accelerated in the last ten years and the number of teachers graduating has declined in relation to this retirement trend" (p. 870).

There has certainly been ample media coverage of issues relating to the supply of teachers. Some warn that there are "Way too many teachers" (2011), while others claim there are teacher *shortages* in many areas of Canada (Montgomery 2018; Pfeifer 2018).

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the pattern of community growth and decline in Canada, see Beshiri and Bollman (2001), Mwansa and Bollman (2005) and Slide 21 in Bollman (2018).

Galway (2015) presents a more balanced analysis. He notes that "the range of demographic factors and political and economic drivers required to predict fluctuations in teacher demand are complex and unstable, and many are out of the control of governments and universities" (p. 2). He and others (Brandon 2015; Dibbon 2002; Jack and Ryan 2015) emphasize that while "enrolment is the fundamental driver of teacher demand, there is little evidence to suggest that teacher demand is tightly coupled to enrolment" (Galway 2015, p. 8). In other words, the number of school-aged children is important but not the *only* factor when considering demand for teachers.

Dibbon agrees with these authors that "…there is no overall shortage … and there is not likely to be one in the near future…" (Dibbon 2002, p. 13). However, there *are* regional variations in teacher demand and supply, variations that are central to the focus of the current book. "It is becoming increasingly difficult to attract teachers to rural and remote regions…" (Dibbon 2002, p. 12). "…it is difficult for small rural schools to attract and retain qualified teaching staff" (Canadian Council on Learning 2006, p. 4). This pattern is echoed by others (Alberta Teachers' Association 2002; Eaton et al. 2015; French 2019; Hamm 2015; Lamb et al. 2014; Saskatchewan Learning 2007; Saskatchewan School Boards Association 2010).

Some of the research, cited above, notes not only the issue with attracting teachers to rural and remote areas, but also with retaining them. The Canadian Council on Learning comments that "rural schools often have to fill their vacancies with younger, less experienced teachers" (CCL 2006, p. 4) and that this, in turn, leads to high teacher turnover. Kitchenham and Chasteneuf (2010) note the same concern in filling teaching positions in the Territories. On the other hand, some researchers find higher turnover in *urban* schools—see Schaefer et al. (2012) and Guarineo et al. (2006).

Further, there is the issue of particular specializations. Even when rural schools are able to attract qualified teachers, they may not be able to fill specialty positions. This issue is raised by Dibbon (2002), Saskatchewan Learning (2007), Lamb et al. (2014), Kirchenham and Chasteneuf (2010), Montgomery (2018), and the Canadian Council on Learning (2006). And, given the important role played by supply or "substitute" teachers, the lack of such teachers in many rural and remote areas can add to the challenges facing schools in rural and remote areas (Galway 2015; Nova Scotia Teacher Supply and Demand Report 2012).

4.3 Rural–Urban "Performance" Gap

Separate from the issue of the availability of teachers is what has been referred to as the rural–urban "performance" gap. There are two components to this "performance gap" that are referenced in the literature. One is the differential high school graduation rate in rural and urban areas, with high school completion being higher in urban than rural areas. The other is the gap in results from standardized testing, such as the PISA (Programme for International Student Assessment) reading scores. We will

focus solely on high school graduation rates, since the data we have do not have PISA scores or any other measure of standardized testing.[9]

It has been documented for some time that in Canada, as elsewhere (Bowlby 2005; Swanson and McGranahan 1989; Uppal 2017; USDA 2017), rural areas tend to have lower rates of high school completion (or, as is often referenced, corresponding high rates of "dropping out" before receiving a high school diploma). Overall, dropout rates tend to be declining over time as more youth complete high school (Gilmore 2010). And, while the rural–urban difference is declining in many areas (USDA 2017), it still persists in many others (Canadian Council on Learning 2006; Richards 2011). High school completion is seen as important partly because of the human capital skills developed during the process, but also because of its "signalling" effect to employers (Frenette 2013).

One issue that researchers have explored is *why* rural youth have higher dropout rates. Wenk and Hardesty (1995) suggest it has to do with family resources: "…rural teenagers are just as likely to translate family resources into increased education as are teenagers living in other regions" (p. 327). However, the key point is that "family resources" are *not* the same in all areas. Others emphasize differences in the occupational skills needed in rural areas, and thus the opportunity structure[10] facing rural as compared to urban youth. The "… occupational structure of urban and rural regions appear polarized, even when differences in industry structure are taken into account" (Alasia and Magnusson 2005; see also Beshiri 2001; Canadian Council on Learning 2006; Gibbs et al. 1998; Looker 2002, 2010a; Magnusson and Alasia 2004). Corbett and Beck note that "Local labour markets constitute an important structure for young people in the sense that the possibilities they see at their places of residence will affect the choices they make for the future" (2016, p. 546). As they note, often decisions about the jobs that constitute these "opportunity structures" are made by global corporations based outside the rural community. See also Martin (2020) in this volume.

There are also important regional variations in the dropout rates, especially when looking at remote and northern areas. Gilmore documents that it tends to be "those in smaller towns who contributed more to the dropout rate than young people in more sparsely populated areas" (2010, p. 3). And the Saskatchewan Education Indicators Report (2010) claims that rural areas outside the north have *lower* dropout rates than urban areas. So, certainly further investigation into these rates is warranted.

[9]For discussions of rural–urban differences in reading scores see Cartwright (2003), Cartwright and Allen (2002), the Canadian Council on Learning (2006), and Lamb et al. (2014).

[10]See Corbett (2009) and Corbett and Beck (2016) for a nuanced discussion of the issues creating these opportunity structures.

4.4 Aboriginal Issues

It is important when we talk about rural issues in Canada to recognize that a higher share of the rural population has an Aboriginal Identity, compared to urban. This is particularly important given the history of schooling in Canada for Aboriginal peoples.

We have some limited data that relate to those with an Aboriginal Identity. While any kind of comprehensive review of the research relating to Aboriginal schooling is beyond the scope of this chapter, identifying some of the relevant research will help to put those results in a wider context.

In their discussion of the challenges in teacher recruitment facing rural and remote areas, Eaton et al. (2015) note that Aboriginal communities are especially vulnerable to these challenges.

Others note the lower retention rates/higher dropout rates among Aboriginal peoples (Frenette 2013; Gilmore 2010; Saskatchewan Learning 2007). Uppal (2017) reports that the dropout rates, Canada wide, are: 20% for Aboriginal males; 16% for Aboriginal females, 9% for non-Aboriginal males, and 5% for non-Aboriginal females (2017, p. 3). Richards echoes this finding, stating that "Canada's most serious education gap is that between [those] who identified as Aboriginal… and other Canadians" (2011, p. 8). The issue is especially critical on First Nations' reserves. Sharpe and Lapointe (2011) add to that discussion by noting that educational attainment tends to be higher in reserves near urban centres. So, the issue is a complex one. Nonetheless, it warrants attention, and it is important to try to untangle the effect of rural location from that of Aboriginal Identity, given the uneven residence of Aboriginal peoples across the rural–urban landscape. See the related chapters in this volume (Scott and Louie 2020; Scully 2020; Wallin and Peden 2020; O'Connor 2020).

5 Results

We start by setting the context for a discussion of schooling in rural versus urban areas. First, it is important to note the distribution of the population by urban and rural for Canada and for each province/territory.

Figure 1 shows the distribution of the total population in metro areas and in Metropolitan Influenced Zones (MIZ) within Canada and the provinces and territories (see also Table 2 in Bollman 2018). No province has more than 5% of its population in the no MIZ areas (Newfoundland and Labrador and Saskatchewan have 5%). (And rural areas in the territories outside the census agglomerations of Yellowknife and Whitehorse are in a separate category, labelled as "Non-CA Territories".) Only three provinces have more than 10% of their population in the weak MIZ zone: Saskatchewan and Nova Scotia have 13% of their populations in weak MIZ areas; Newfoundland and Labrador have 12%.

As noted earlier, the distribution for Canada as a whole is: 71% in "metro"; 12% in census agglomerations (1000 and over but less than 100,000); 6% in strong MIZ; 7% in moderate MIZ; 4% in weak MIZ; 1% in no MIZ and less than 1% in the areas of the territories outside Yellowknife and Whitehorse.

Thus, the share of the population residing in non-metro areas varies widely across the provinces and territories, and the share residing in "more" remote non-metro areas (i.e. weak MIZ and no MIZ) areas varies as well.

6 The "Demand" Side: Changes in the School-Aged Population

The literature review, above, noted that the size of the student population is not the only driver of the demand for teachers. However, it is a key part of this demand and cannot be ignored, especially in rural and remote areas that face population decline and/or ageing.

In order to set the stage for a more detailed discussion of patterns in rural as compared to urban areas, it is useful to see what the patterns have been in Canada, overall, overtime, and what the projected size of the school population will be. Such an overview allows us to have some context to understand any historic trends in rural versus urban areas.

How has the "target" population of 6–14-year-olds and of 15–18-year-olds[11] changed in Canada over the last several decades? How is it likely to change in the next few decades? We will start by considering 6–14-year-olds (the primary target age group for elementary school) and then 15–18-year-olds (the target age group for secondary school).

Looking first at the historical trends (the data up to 2017 in Figs. 2 and 3), we see the demographic pattern of a slight increase in children aged 6–14 years of age, from 1997 to 2002, at which point the numbers decrease, with an upturn in 2013.

The same pattern unfolds for youth 15–18 years of age, with about a 7-year lag (as the elementary school-aged individuals move into the group 15–18 years of age) (Fig. 3). For this age group, there was an increase to 2008, then a decrease to 2017. There is no rise in the historical data as the recent bump in youth aged 6–14 has not yet shifted to this older age group.

[11] Since education is a provincial jurisdiction in Canada, the relevant age groups for elementary and secondary schooling differ. Differences exist in: the compulsory ages to start schooling, the age to which compulsory attendance continues; and the breakdown in "levels" of schooling. Some provinces have "junior high" years, others do not, and those that do have a "junior high" level, do not always include the same grades of schooling. Quebec has "CEGEP" (Collège d'enseignement général et professionnel), a publicly funded pre-university, post-high school system, which most students attend after grade 11, while most other provinces have a grade 12 in high school. Given this variation, there is no one cut-off in ages that "best" captures "elementary" and "secondary" students in Canada as a whole. Our choice of ages for the cut-off reflects the best match to various provincial schooling systems.

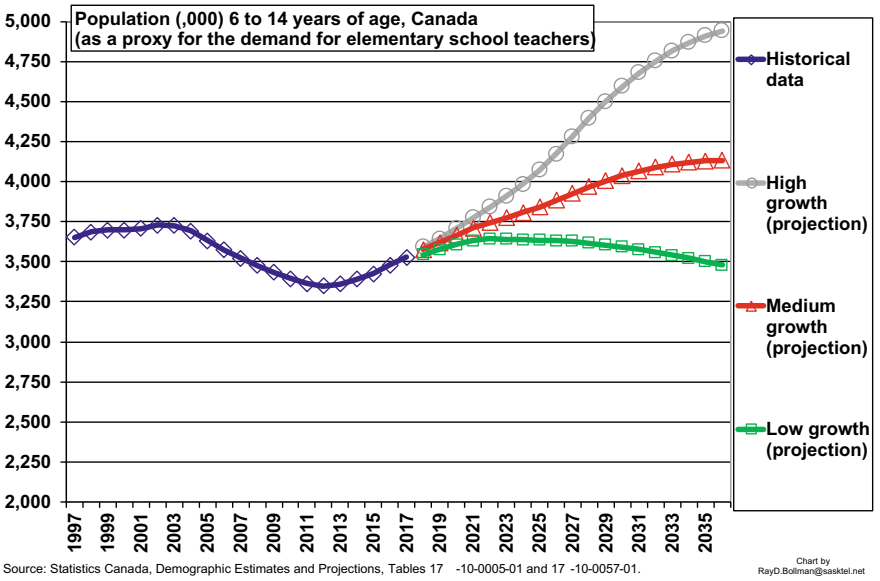


Fig. 2 Population 6–14 years of age, Canada; historical data from 1997 to 2017 and projections to 2036

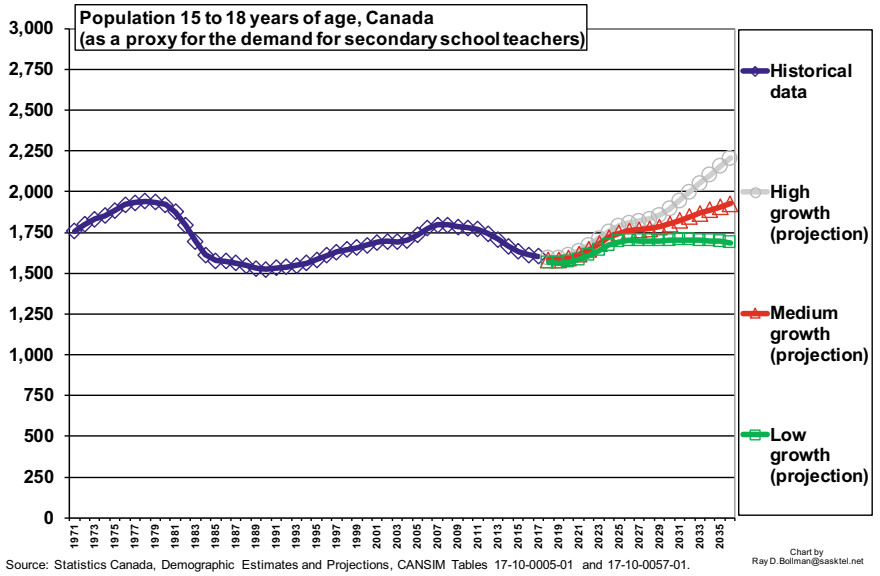


Fig. 3 Population 15–18 years of age, Canada; historical data from 1997 to 2017 and projections to 2036

More interesting, perhaps, especially for those planning for future hiring of teachers in Canada is the other information in these figures. Figures 2 and 3 also give *projections* for these demographic age groups from 2018 to 2036, based on a number of assumptions. Statistics Canada has prepared projections of the population by age group, given the assumption of high growth, of medium growth, and of low growth.[12]

Figure 2 shows that the number of elementary school-aged children in Canada is expected to increase at least until 2025. What happens after 2025 depends on which set of assumptions is the more accurate. A low growth scenario would see a decline in this age group after 2025; a high growth scenario would see it mushroom to well above historic levels. The more moderate, and perhaps more likely, medium growth scenario would see a consistent increase in this age group to 2036, to the point where the numbers match those in the 1970s (data not shown, see Bollman 2020) and are higher than in the mid-1990s, where we start the focus for this chapter.

Again, for secondary school enrolment (Fig. 3), we see an expected increase until about 2025, then either a levelling off (under the low growth scenario), a slight increase (under the medium growth scenario) to the peak evident in the late 1970s (Bollman 2020).

The conclusion we can draw appears to be that the number of school-aged children, in Canada as a whole, is likely to increase in the next two decades. These projections are not available at the subprovincial level, so we cannot, at this point, do a rural–urban comparison.

There is, however, also information available on the historic tends and projections at the *provincial* level[13] to get a feel for how these trends vary across the country. What these provincial analyses show is that

(a) the historic trends have differed from the Canada-level trends in some provinces; and
(b) the projected increase is not likely to occur in all provinces.

Considering the population of *all* school-aged children (6–18 years of age), there was a decline at the Canada level in the recent historical period (from 2002 to 2015) but the numbers have started to increase in 2016 and 2017. Most provinces show a similar pattern wherein the decline of the population 6–18 years of age has reversed in recent years. Three Atlantic Provinces (Newfoundland and Labrador, Prince Edward Island and Nova Scotia) are showing a continuous decline in school-aged children up to 2017. Only two jurisdictions (Alberta and Nunavut) reported a continuous increase over the 1997–2017 period in their population 6–18 years of age (see Bollman 2020 for details).

The *projections* for most provinces and territories show a projected *increase* in the population 6–18. However, a *decline* is projected for Newfoundland and Labrador, Nova Scotia, and for New Brunswick.[14]

[12] See Bollman (2020) for the assumptions for the different growth scenarios.

[13] Charts for each province and territory for those 6–14 years of age and those 15–18 years of age are presented in Bollman (2020).

[14] Recall the caveat that we are using the assumptions in a "medium growth" projection and these projections were published in 2014 (Statistics Canada 2014).

7 Rural Urban Demographic Trends

These overall demographic trends set the stage for a consideration of urban–rural differences in these patterns. Unfortunately, there are no projections available for rural versus urban areas, but we can learn from the historic trends.

As of 2017, 29% of the population of Canada resided in rural areas ("non-metro" in these graphs) (Fig. 1). Similarly, 30% of those aged 6–14 and those aged 15–18 were living in rural areas (data not shown).

There is, of course, important provincial variation in these proportions. In Newfoundland and Labrador, Nova Scotia, New Brunswick and Saskatchewan, the non-metro population outnumbers the metro. In PEI and the three territories, there is no "metro" area at all; the whole province or territory is "non-metro" (Fig. 1).

So, what are the relevant demographic trends in rural as compared to urban areas for Canada as a whole? Figures 4 and 5[15] show the patterns for Canada, from 1997 to 2017.

As Fig. 4 shows, the recent upturn in the number of children *6–14 years of age*, evident in Fig. 2, occurs almost entirely in the urban/metro areas. The number

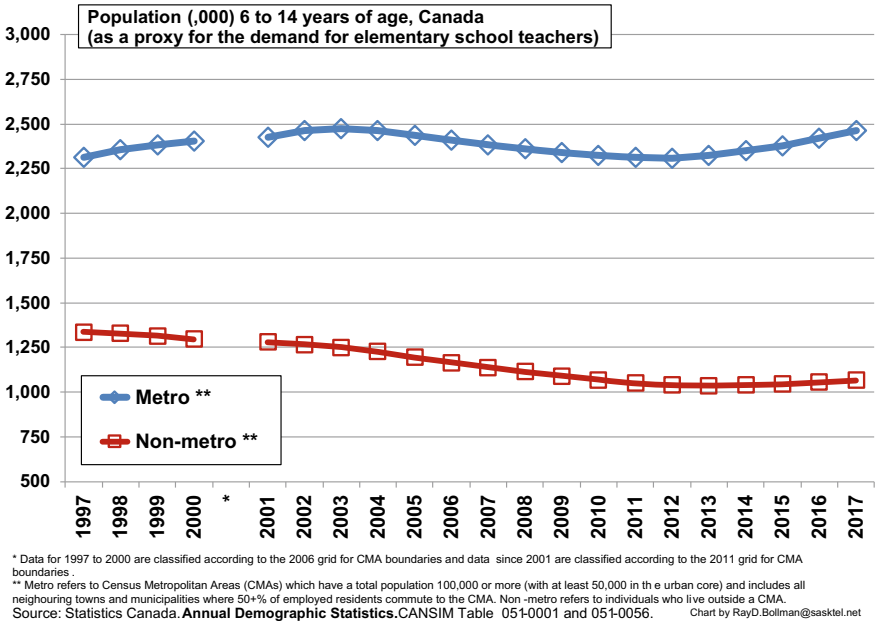


Fig. 4 Population 6–14 years of age, by rural–urban location, historical data from 1997 to 2017, Canada

[15] Data for 1996–2000 are classified according to the 2006 grid for CMA boundaries and data since 2001 are classified according to the 2011 grid for CMA boundaries. The break in the graphs in Figs. 3 and 4 reflect this change in classification.

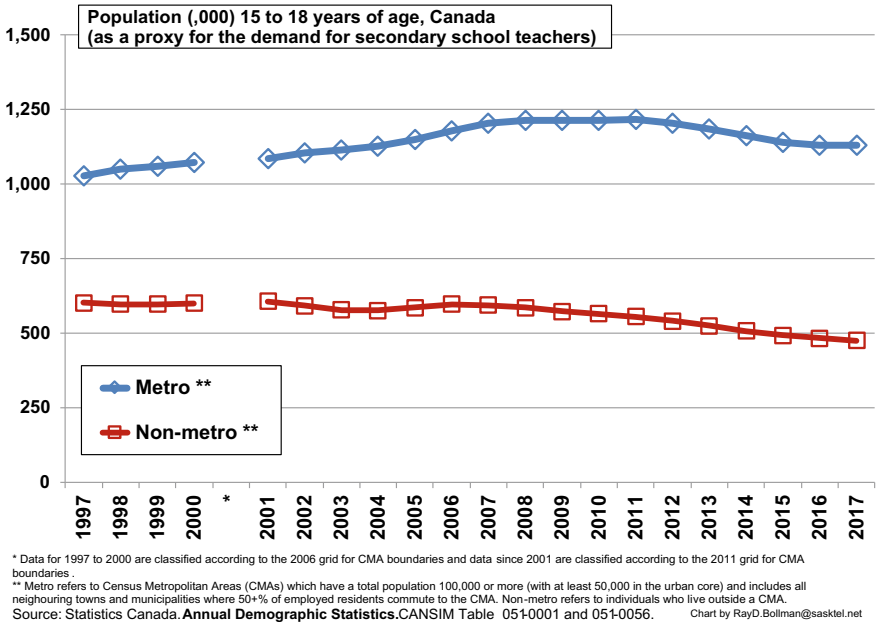


Fig. 5 Population 15–18 years of age, by rural–urban location, historical data from 1997 to 2017, Canada

of children in this age group in non-metro areas has been fairly level since 2010. However, the overall message is that there has been an increase in number of children in this age group since 1997 in metro areas, and a decrease in these numbers in non-metro areas, over time.

The slight decrease in the last decade in the number of youth *aged 15–18*, shown in Fig. 3, is reflected in both the metro and non-metro patterns (Fig. 5). Note that the rural–urban gap widens over time (i.e. rural declined more), from 1997 to 2017.

There are significant differences in these demographic trends for these age groups in the different provinces (Bollman 2020). How do these differences play out in the rural–urban breakdown?

The breakdown of these trends by non-metro versus metro shows that, for those provinces with a decline in recent decades among school-aged children (Newfoundland and Labrador, Nova Scotia and New Brunswick[16]), that decline is mostly attributable to declines in the numbers in non-metro areas. Further, the decline is steeper for the younger age group, those 6–14 years of age. There is, in fact, little variation in the 1997–2017 period in the number of school-aged children in *metro* areas in these provinces.

[16] All of Prince Edward Island is classified as "non-metro" so there is no comparison possible in that province.

In Alberta, where there is an increase in recent years, especially among those 6–14 years of age, most of the increase is in the *metro* areas of Calgary, Edmonton, and Lethbridge.

Looking at things another way, there is an increase among those 6–14 years of age in *non-metro areas* in recent years—basically since 2012 or 2013—only in Quebec, in the four western provinces and in the territories. There is an increase in those aged 6–14 *in metro areas* in ***all*** provinces (noting that PEI and the territories have no "metro" areas) during the same time period. Further, the increase in these numbers in metro areas is more pronounced in Alberta, Saskatchewan, and Quebec.

The picture is rather different for those aged 15–18, as one can see from the Canada totals charted in Fig. 5. There is no *increase* in recent years among this age group in either metro or non-metro areas, at the Canada level, as the recent increase in the population 6–14 years of age has not yet reached the older age group. Indeed, there is no increase in the numbers in this older age group in metro or non-metro areas in any of the provinces or territories in the last few years. The only rural–urban difference of note is that the *decline* has been more pronounced in recent years in non-metro as compared to metro areas in: Newfoundland and Labrador, Nova Scotia, New Brunswick, Saskatchewan, and British Columbia (see Bollman 2020 for details).

So, the bottom line is that, where there is a decline in the school-aged population, it tends to be more pronounced in non-metro areas. The long-term projections at the level of provinces/territories, at least in some cases, show that there will be an increase the school-aged population. It remains to be seen if the increase will have the same *effect* in rural as in urban parts of the country.

8 Supply of New Teachers: Number of Bachelor of Education Graduates

Having looked at the trends in the number of school-aged children, we next look at the supply of teachers. Universities and colleges in Canada graduate several thousand new teachers every year. According to Statistics Canada, 12,846 individuals graduated with a Bachelor of Education (B.Ed.) degree in Canada in 2016.[17] That number comprised more than 7% of *all* bachelor degree graduates in Canada that year.

As Fig. 6 shows, the number of B.Ed. graduates declined from 1997 to 1998, then steadily increased, reaching a high of 20,304 in 2009. Overall, the number of B.Ed. graduates has been between 18,000 and 20,000 per year from 2002 to 2015, but has recently decreased.

[17]Note that, in 2015, Ontario halved the number of admissions to Bachelor of Education programs and extended the program from a 1-year program to a 2-year program. Thus, we show a drop from 2015 to 2016 in Ontario and, therefore, in the totals for Canada. The data for 2017 and 2018 on the number of Bachelor of Education graduates were not available when this chapter was drafted.

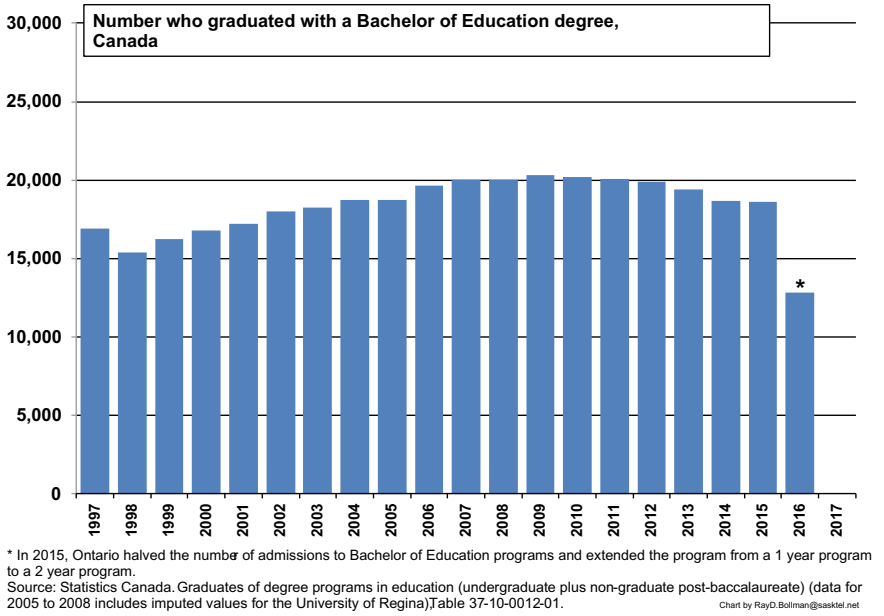


Fig. 6 Number of Bachelor of Education graduates, 1997–2016, Canada (The University of Regina did not submit any reports from 2005 to 2008. This gap affects not only provincial totals but also totals for the country as a whole. To adjust for this omission, data were imputed for these missing years so that the numbers in Saskatchewan and at the Canada-level parallel the numbers of graduates in the preceding and following years)

In more detailed provincial data (Bollman 2020), the overall increases over the past twenty years in B.Ed. graduates primarily reflect an increase in the number of such graduates from Ontario to 2015. That pattern changed somewhat in recent years, with the number of graduates being somewhat lower in Ontario since 2012, and dramatically so since 2015. Up until 2015, Ontario graduates made up over 40% of all B.Ed. graduates in Canada. Given the admission cuts in Ontario in 2015, they now account for only 26% of Canadian B.Ed. graduates. Quebec graduates accounted for about twenty per cent of all graduates in most years since 2000; as of 2016, they make up 30% of all B.Ed. graduates. Numbers of graduates from other provinces have remained quite consistent since 1997.

Since students interested in B.Ed. programs go where the programs are offered, we do not have any details on the access of B.Ed. programs by aspiring teachers *from* rural as compared to urban areas. However, see Frenette (2002) and Looker (2010b).

9 Number of Teachers Employed in Canada

So, how many teachers are there, employed as elementary and secondary teachers,[18] in Canada?

The number of teachers employed, of course, varies from month to month as teachers are hired, and others leave, temporarily or permanently. To get a clearer picture, we look at the number employed in the average month during the school year (September–June).

The data for each school year presented in Bollman (2020) show that the number of teachers employed in Canada ranged from a high of 342,000 in 1997/1998 to a low of 256,700 in 2004/2005. In the school year 2017–2018, about 303,900 individuals were employed as elementary or secondary school teachers, according to the Labour Force Survey (LFS).

However, the LFS data for each school year show considerable year-to-year variability due to the small sample size of the LFS. Administrative data on the annual number of teachers employed by each province show remarkable year-to-year consistency (Bollman 2020). Thus, in order to remove some of the year-to-year sampling variability when presenting data from the LFS, we show, for each year, the median (or middle value) of the number employed for the previous year, for the given year and for the following year (following Tukey 1977). This technique removes much of the year-to-year variability in the data and allows one to see the underlying structure and the general trend in the data.

Overall, the average number employed (elementary plus secondary) teachers is quite consistent over time. There was a slight decrease at the turn of the century, and then the level was essentially flat from 2000/2001 to 2006/2007 followed by a higher level in 2009/2010 and 2010/2011 (due to higher reported levels in Ontario and Manitoba) before reverting to slightly lower level in the most recent 7 years (Fig. 7).

Figure 8 provides some detail of this employment by rural versus urban location.[19] The higher levels in 2009/2010 and 2010/2011 occurred only in metro centres. The overall trend is:

(a) The number of metro teachers is higher in recent years (2011/2012 to 2016/2017) compared to the period 2001/2002 to 2006/2007; but
(b) The number of non-metro teachers has been flat, with a very slight decline in recent years.

[18]This section focuses on data from the Labour Force Survey (LFS), with details available from 1997–1998 to 2017–2018. The LFS gathers data each month from a sample of Canadians, 15 years of age and over. The employment questions tend to focus on employment in the week preceding the survey. "Teachers" include elementary and kindergarten teachers (National Occupational Code (NOC) code 4032), plus secondary school teachers (NOC 4031). Where relevant, we focus on employment during the school months, September to June.

[19]For the remainder of this chapter, where appropriate, we will focus on the rural–urban trends rather than showing both the totals and the rural–urban breakdown. Also note that respondents to the LFS are assigned to the location of their residence and not to the location of their job.

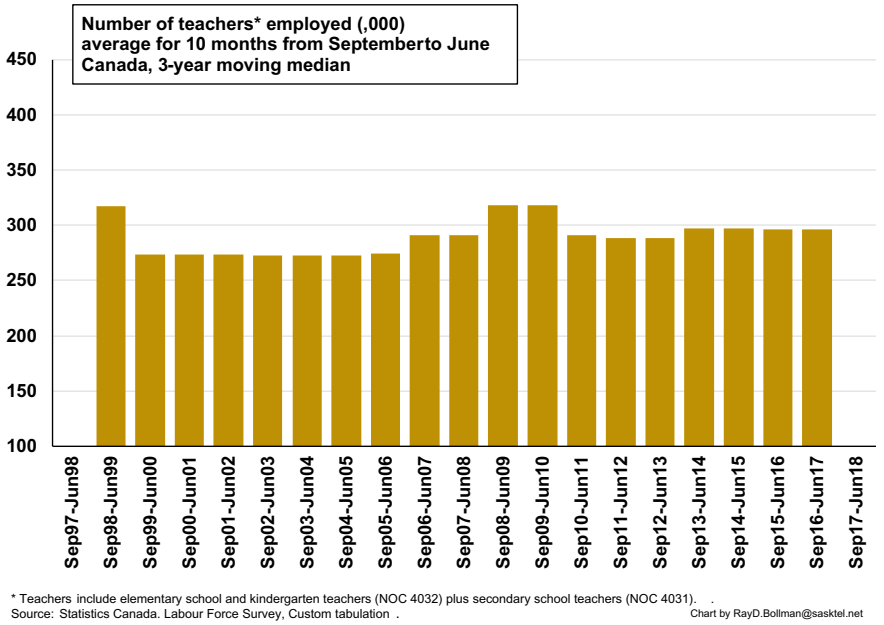


Fig. 7 Number of teachers employed, 1997–2017, Canada

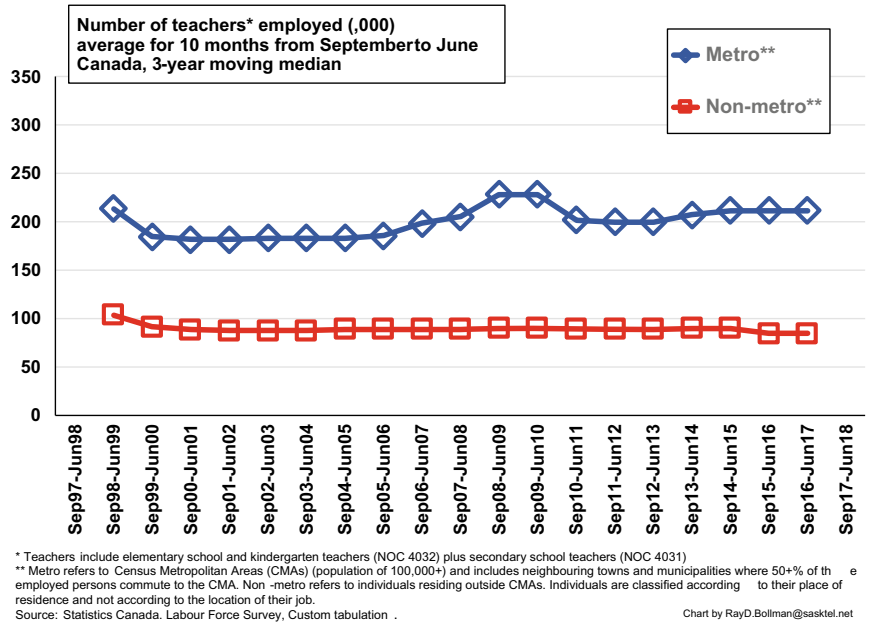


Fig. 8 Number of teachers employed, by rural–urban location, 1997–2017, Canada

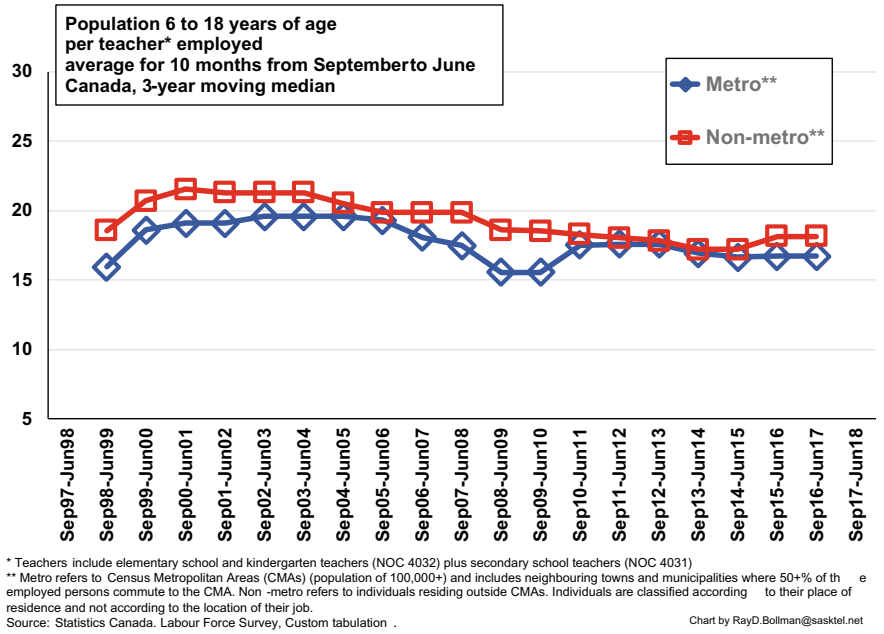


Fig. 9 Ratio of the population 6–18 years of age per teacher employed, by rural–urban location, 1997–2017, Canada

Given that fewer children live in rural areas, it is not surprising that fewer teachers are employed there (i.e. the rural line is below the urban one).

Since we know the number of school-aged children, and we know the number of employed teachers, we can compare the two.[20] Figure 9 shows the result, allowing us to see if rural or urban areas have a "disproportionate" number of teachers, given the school-aged population in their area.

Three points might be noted from the results in Fig. 9:

- Non-metro areas have a (slightly) higher ratio of the population 6–18 years of age per teacher;
- Within both metro and non-metro areas, this ratio has declined since 2000/2001; and
- In recent years (since 2011/2012), the ratio for both areas has been fairly consistent, hovering around 17.

The key point in Fig. 9, however, is that, despite the smaller *number* of teachers in rural areas that we saw in Fig. 8, the number of teachers tends to parallel the number of students. There is no obvious "large" disproportionate *level* of employment, relative to the population 6–18 years of age, in either rural or urban areas. Keep in mind

[20]Note that the ratio we compute is not a simple "student/teacher" ratio, in classroom terms, since not all individuals employed as teachers in these two occupations are necessarily in the classroom. And clearly some classrooms would have higher and some lower ratios.

that "rural" (non-metro) schools can be small or they can be large, as consolidated schools serve a large geographic area.

10 Teacher Employment Compared to the Number of Bachelor of Education Graduates

How does the number of employed teachers match the number of individuals graduating with a Bachelor of Education (B.Ed.) degree? Figure 10 shows the pattern.

Figure 10 shows that the number of B. Ed. graduates as a per cent of the number of employed teachers[21] went up fairly consistently from 1999/2000 to 2004/2005. There has been some variation since then, but the per cent has returned to the 6% level reported in the early 2000s.[22] Thus, the number of new graduates has been

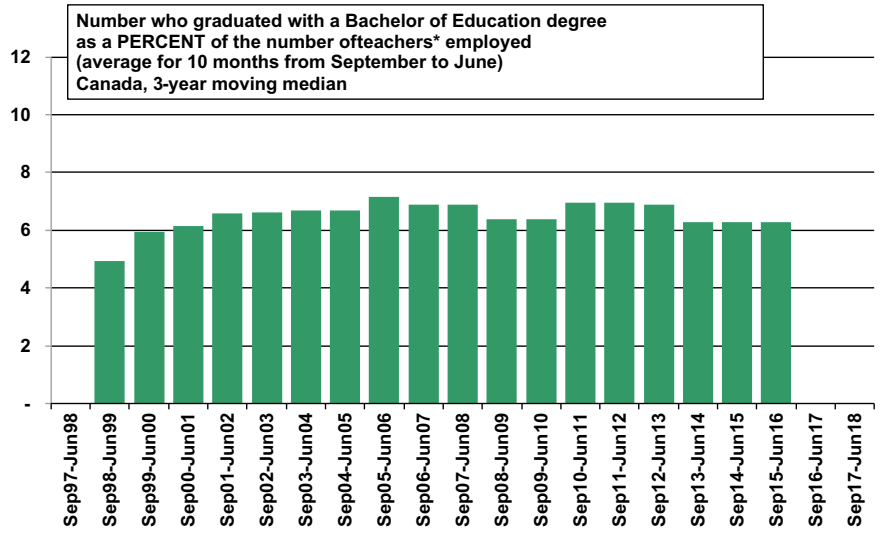


Fig. 10 Number of Bachelor of Education graduates as a per cent of the number of teachers employed, 1997–2017, Canada

[21] The number of B.Ed. graduates is based on the spring graduation and the employment level is based on the average level of employment from September in the same year to June of the following year.

[22] Note that our use of a 3-year moving median means that the observation for 2015/2016 presents the median value for the three years of 2014/2015, 2015/2016 and 2016/2017 and thus the lower number of B.Ed. graduates in Ontario in 2016 is not reflected in this chart. When the 2017 data

equivalent to about 6–7% of the total number of teachers employed in Canada for over a decade.[23]

11 Number of Teachers Hired

How many teachers are *hired* per year in rural and urban areas in Canada? Figure 11 gives the details.

The number of individuals hired as teachers each year in Canada has gradually declined over time. However, we can see that most of the variation in hiring, including the decrease since 2001, has been in metro areas (those with over 100,000 residents).

If rural areas were having a hard time attracting and keeping teachers, you would expect an increase over time in *hiring* in those areas. However, that is not the case for rural areas as a whole (but Figs. 21, 22, 23, and 24 show more turnover in rural areas that are more remote).

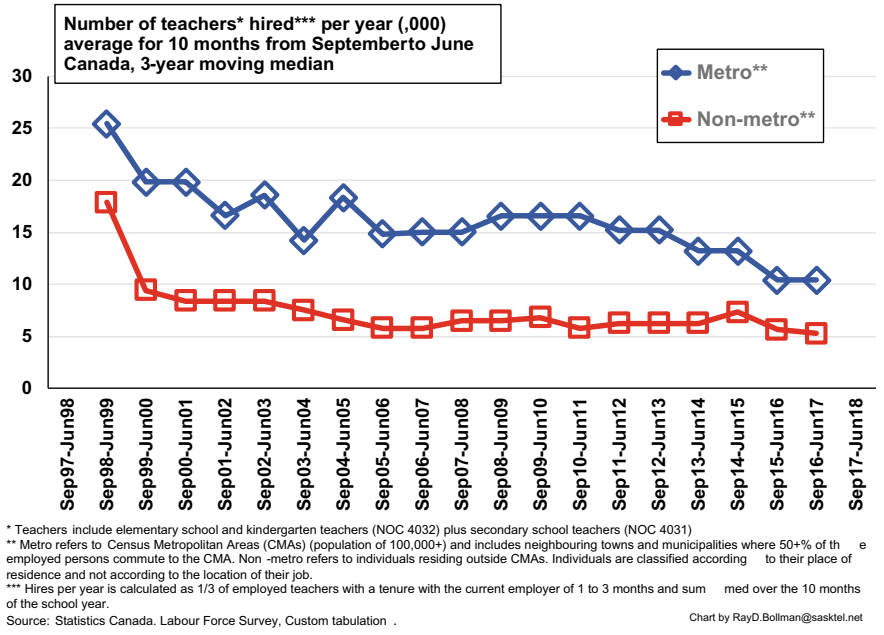


Fig. 11 Number of teachers hired per year, by rural–urban location, 1997–2017, Canada

becomes available, then the lower number of B.Ed. graduates in 2016 and 2017 will determine the 3-year moving median for 2016/2017. A chart with the annual data is presented in Bollman (2020).

[23]The Ontario decision to enrol one-half the number of students in B.Ed. programs will impact the Canada-level patterns going forward from 2016 (See Fig. 6).

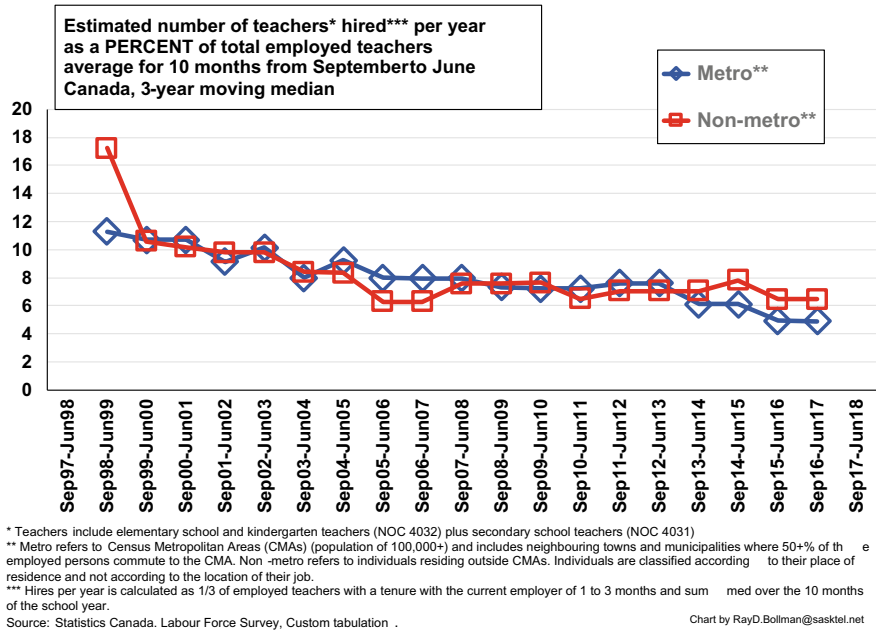


Fig. 12 Number of teachers hired per year as a per cent of the number of employed teachers, by rural–urban location, 1997–2017, Canada

Keep in mind that these are *not* all new hires. Indeed, the calculation is based on those who report, in the LFS, that they have been with their current employer 1–3 months and thus employed teachers who change employers would be tabulated as a "hire".[24]

When we calculate a rate of hires per year (i.e. the estimated number of hires as a per cent of employed teachers), we see:

- The same hiring rate in metro and non-metro areas in most years (Fig. 12); and
- The hiring rate has been declining at essentially the same pace in both metro and non-metro areas.

Thus, this indicator of teacher "turnover" does not show a greater level of turnover in non-metro areas, compared to metro areas, and turnover is not increasing in non-metro areas.

Next, Fig. 13 shows the numbers of teachers hired per year as a per cent of the number of Bachelor of Education graduates.

There was a high point in this ratio in the late 1990s, reflecting the spike in hiring in 1997/1998 and 1998/1999. Then, things level off. Up to about 2005, more teachers

[24]It is not clear from the wording of the LFS whether contract employees who are rehired by the same employer in September for several years would say they are recently hired or say that they had a worked for the same employer for several years.

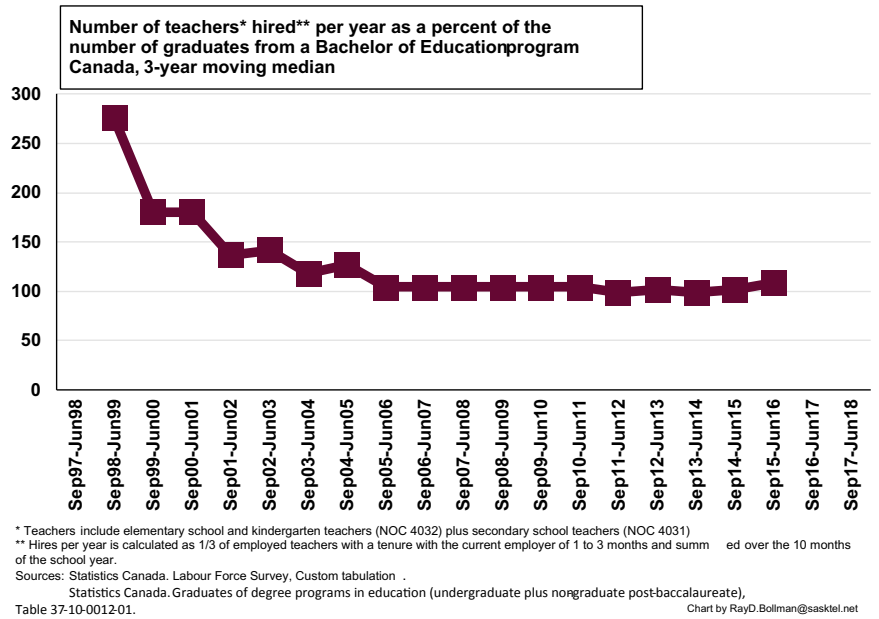


Fig. 13 Number of teachers hired per year as a per cent of the number of Bachelor of Education graduates, 1997–2016, Canada

are hired than graduate that year (that is, the ratio shown in Fig. 13 is greater than 100).

Since 2005, the ratio of hires to B.Ed. graduates has hovered around 100%.[25] This ratio has remained unchanged since 2005–2006, which implies a more stable relationship between annual hires and the annual number of graduates. Given that we do not know the share of annual hires that is due to teachers moving from one employer to another, we do not know the share of annual graduates who are hired. However, the situation appears to have been unchanged during the period from 2006–2007 to 2015–2016.

[25] As noted above, our use of a 3-year moving median means that the observation for 2015/2016 presents the median value for the three years of 2014/2015, 2015/2016 and 2016/2017 and thus the lower number of B.Ed. graduates in Ontario in 2016 is not reflected in this chart. When the 2017 data becomes available, then the lower number of B.Ed. graduates in 2016 and 2017 will determine the 3-year moving median for 2016/2017. A chart with the annual data is presented in Bollman (2020).

12 Summary of Bachelor of Education Results

We have presented a number of charts looking at the number of Bachelor of Education (B.Ed.) graduates per year in Canada, as an indication of the "supply" of teachers.

In Fig. 6, we saw that there has been an increase in the number of these graduates, Canada wide, since about 1998, although this increase has recently disappeared. The pattern of increase and levelling in the number of B.Ed. graduates roughly matches the pattern for the number of teachers employed in Canada in the same years (Fig. 10). So, the number of B.Ed. graduates has been about 6–7% of the number of teachers since the recent turn of the century.[26]

Perhaps more telling is that the number of teachers hired per year is about equal to the number B.Ed graduates that year (Fig. 13). In other words, it seems that the "supply" of teachers graduating from B.Ed. programmes in Canada has been keeping pace with the rate of hires (acknowledging that our estimate of hires includes teachers moving from one school to another and thus "new hires" is lower than our estimated number of hires).

13 Type of Contract

Are more teachers being employed on temporary rather than permanent contracts? Having a temporary position may be a first step to garnering a more secure, full-time teaching post, or it can be a reflection of the number in the important pool of "substitute" teachers, who fill in for those on leave for various reasons. Unfortunately, we do not have information on transitions in and out of temporary employment. Figure 14 gives the trend, over time, in the distribution of permanent versus temporary positions among Canadian teachers.

We see that there is a slight *increase* in the per cent of positions filed with temporary employees over time. This per cent edges up from about 14% in the period before 2002/2003 to about 18% in the period since 2010/2011. That said, what is perhaps surprising is how little change there has been over the last twenty years. There is little evidence in these reports from the LFS of a major shift from permanent to temporary positions.

Further, as we see in Fig. 15, non-metro areas have had slightly more temporary jobs in some years, but not all years. Specifically, the share of non-metro jobs that were temporary was slightly higher than in metro up to 2005/2006 and again slightly higher since 2011/2012. However, for most years in the period we examined, the share of non-metro jobs that were temporary was approximately equal to the share in

[26]The Ontario decision to enrol one-half the number of students in B.Ed. programs will impact the Canada-level patterns going forward.

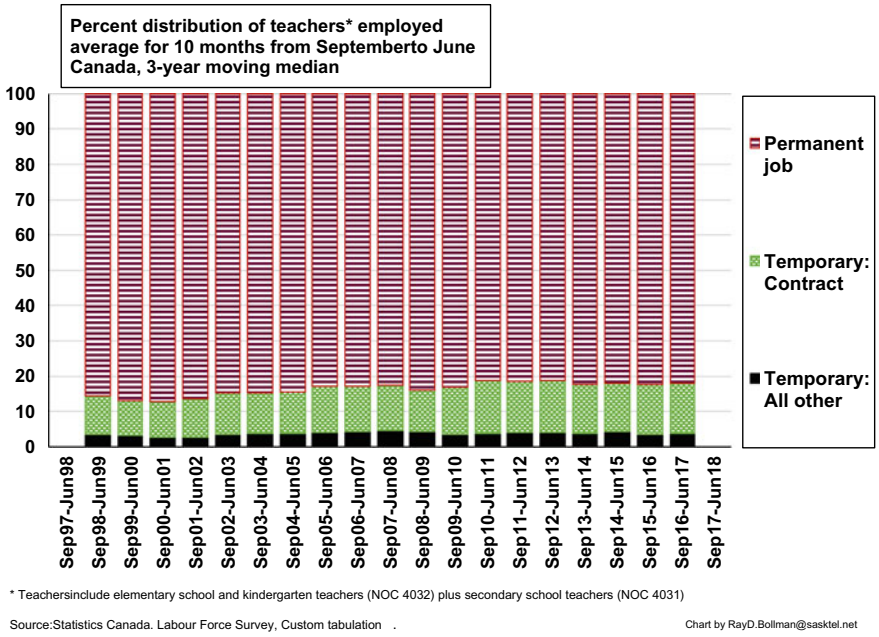


Fig. 14 Per cent distribution of teachers employed, by permanent versus temporary contracts, 1997–2017, Canada

metro areas. Thus, there is no clear pattern of rural locations having more temporary positions than urban.[27]

Figure 16 provides details on a different type of employment issue: the per cent with a part-time (less than 30 h a week) position. Rather than the slight increase we saw with temporary positions in Fig. 15, we see a slight decline in the per cent of employed teachers who report working part-time.[28]

More relevant for this book, however, is that fact that, yet again, there is virtually no rural–urban difference in these per cents and no rural–urban difference in the trend over time.

14 Average Tenure of Teachers

We have seen that there is little rural–urban difference in the *type* of contract held by employed teachers in Canada. Do those who live in rural areas leave their jobs more often—is there higher teacher turnover? If so, the average tenure would differ by location.

[27] There are some interesting and important differences in the rates of temporary contracts over time, by province/region of the country. See Bollman (2020).

[28] About three-quarters of teachers employed on a part-time basis are females who are "voluntarily" working part-time (data not shown).

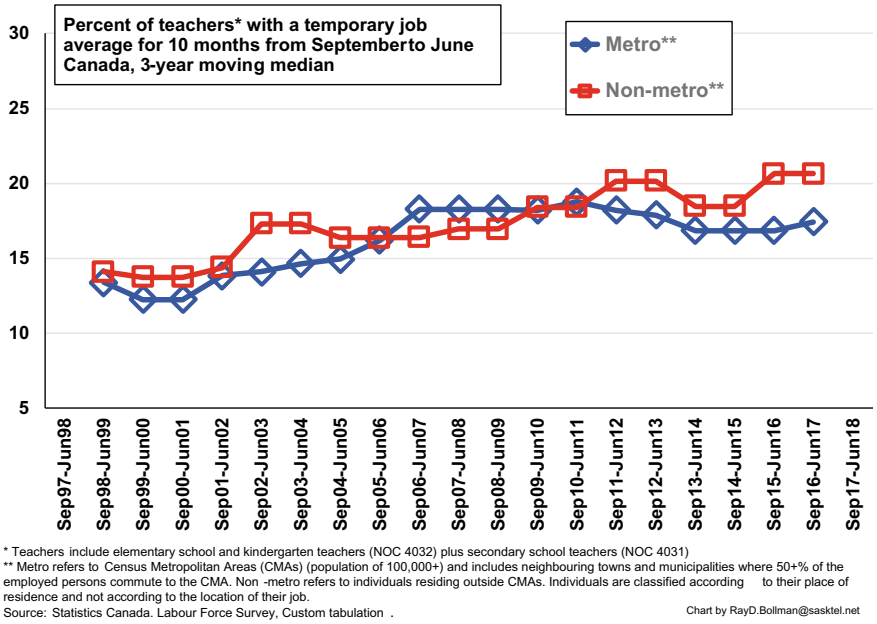


Fig. 15 Per cent of teachers with a temporary (In this chart, "Temporary: contract" and "Temporary: all other" are combined in one category) job, by rural–urban location, 1997–2017, Canada

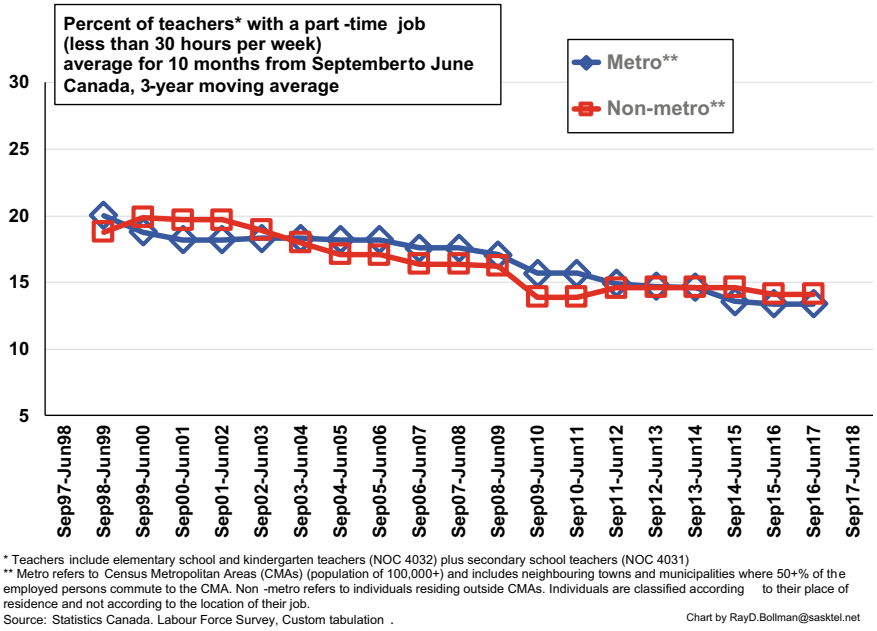


Fig. 16 Per cent of teachers with a part-time job, by rural–urban location, 1997–2017, Canada

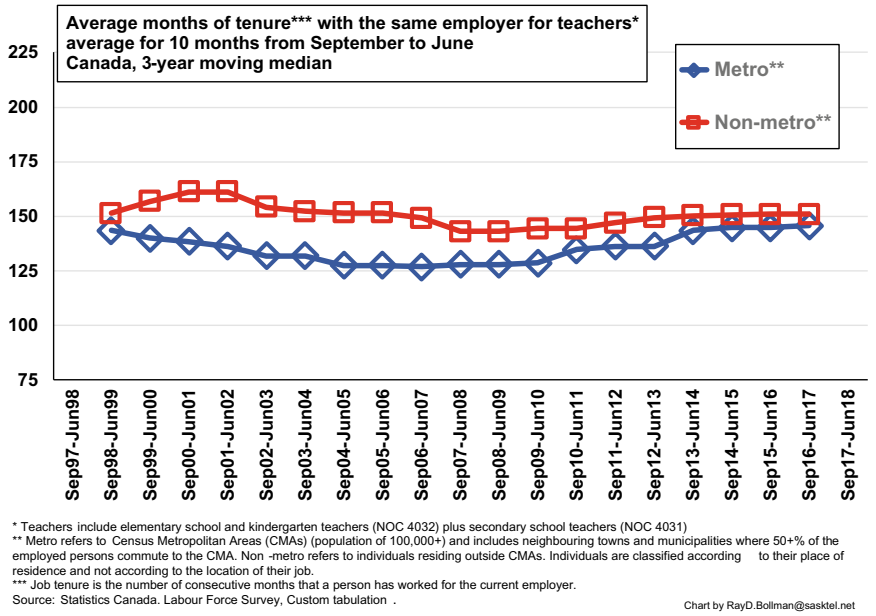


Fig. 17 Months of tenure with the same employer, by rural–urban location, 1997–2017, Canada

Figure 17 shows this is the case, but not as one might expect. In fact, using "months of tenure" with the current employer as an indicator of "turnover", we see, on average, those in rural areas stay longer, on average, compared to teachers in metro centres. This finding suggests that, contrary to the research literature, there is *less* turnover in rural areas. Further, there has been virtually no shift in these numbers over time.

15 Size of School

One issue in the research literature is the size of schools in rural areas. The concern is that small schools are often faced with closure or amalgamation. Are rural small schools on the decline in Canada overall? Are they more prevalent in rural areas?

Figure 18 shows the trend in school size, over time. There is a slight trend to fewer teachers being employed in smaller (those with fewer than 20 employees) schools. About 14% of Canadian teachers were employed in smaller schools up to about 2008/2009 and, since 2014/2015, about 11% of teachers are employed in smaller schools. Interestingly, there is little change in the number in larger schools (those with over 500 employees)—about 23% of Canadian teachers have been employed in larger schools (over 100 employees) since 2006/2007.

Given the interest in the research literature on small schools in rural areas, we show the rural–urban comparison of the share of elementary teachers employed

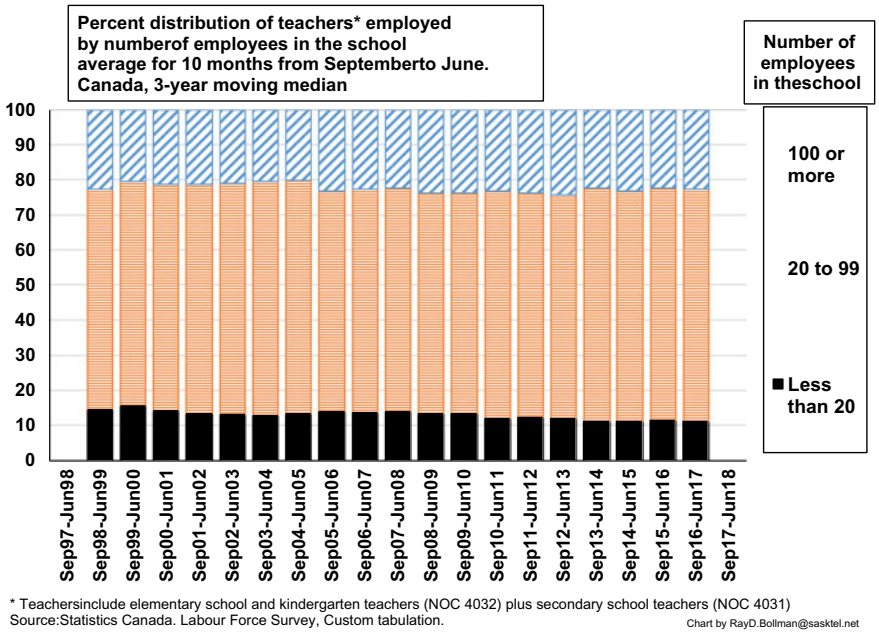


Fig. 18 Per cent distribution of teachers by size of school (number of employees), 1997–2017, Canada

in smaller schools (less than 20 employees) in Fig. 19 and for secondary school teachers in Fig. 20. We differentiate the two levels of schooling here, recognizing that secondary schools are often larger than elementary schools.

First, not surprisingly, a higher share of teachers in non-metro areas are employed in smaller schools (less than 20 employees). For *elementary* school teachers, the share has declined from about 30% in the early 2000s to about 20% in recent years. The share of metro elementary teachers in smaller schools has also declined over time from about 15% in the early 2000s to about 10% in recent years. Over this time period, it has stayed at about half the per cent of non-metro teachers in smaller schools.

Overall, a lower share of *secondary* school teachers compared to elementary school teachers are employed in smaller schools in both metro and non-metro areas—under 10% of non-metro secondary teachers and about 5% of metro secondary teachers.

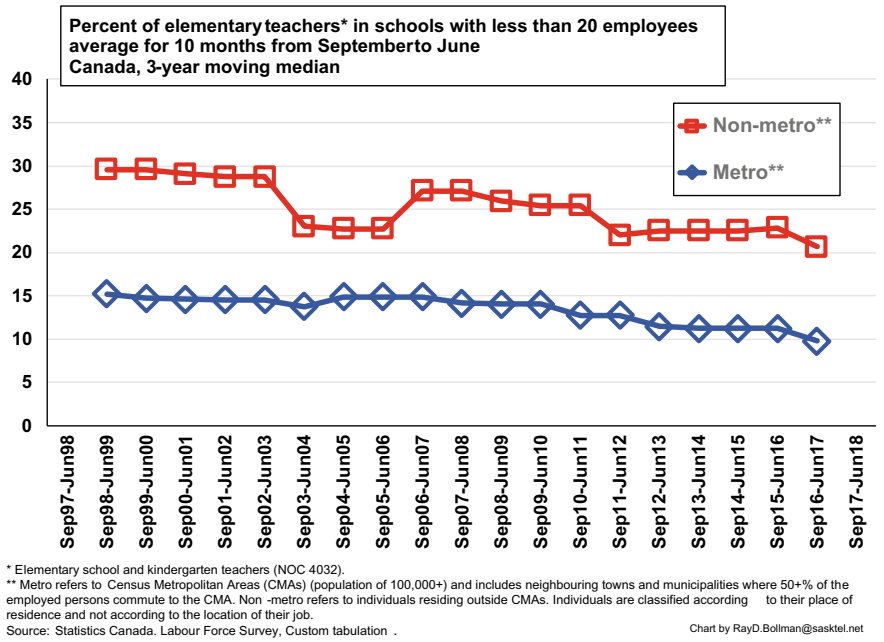


Fig. 19 Share of *elementary* school teachers in schools with less than 20 employees, by rural–urban location, 1997–2017, Canada

16 Summary of Employment Issues[29]

The data on employment issues among Canadian teachers (Figs. 14, 15, 16, 17, 18, 19, and 20) have focused on two types of information. One is the trends in employment patterns *over time*. The other is *urban/rural* (metro/non-metro) differences and similarities.

Looking first at time trends, we see that:

- There has been minimal increase in temporary contracts from 1997 to 2017.
- The per cent of teachers reporting a part-time (less than 30 h a week) job during that time frame has shown a slight decline.
- There has been little or no change in the average number of months teachers report working for the same employer.
- There has been a slight decline in the number of teachers employed in smaller schools (with less than 20 employees).

[29] We also looked at reports of unpaid overtime, thinking that there might be more pressure on rural teachers, especially those in smaller schools, to "volunteer" for coaching or other volunteer/unpaid activities. We found no rural–urban differences in unpaid overtime (Bollman 2020).

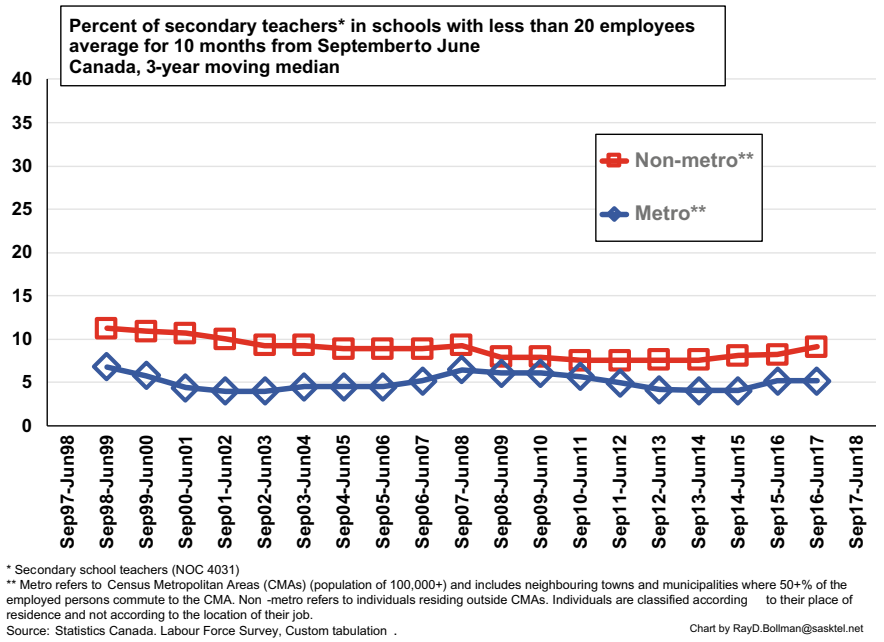


Fig. 20 Share of *secondary* school teachers in schools with less than 20 employees, by rural–urban location, 1997–2017, Canada

In other words, while there have been some changes in working conditions (as indicated by these limited measures) for teachers in Canada, these changes have been minimal.

What about rural–urban differences? The consistent message these results tell us there are not many rural–urban differences in these employment issues between metro and non-metro areas. Teachers in rural areas report no more and no fewer temporary contracts and no difference in the percentage with part-time positions. Interestingly, teachers in rural areas report slightly more time, on average, with their current employer. The overall fairly consistent pattern (of a lack of a large rural–urban difference) speaks, perhaps, to the power of teachers' unions in ensuring some parity across the different geographic regions.

The one rural–urban difference of note concerns the last employment issue examined above: school size. It is clear that there is a higher share of teachers in smaller schools in rural areas than is the case in urban communities. This finding is consistent with the research literature that documents concerns around school size in rural areas, particularly threats of school closures, and difficulties covering a wide range of specialty areas with a limited number of teachers in a given school.

17 Geographic Mobility as an Indicator of Teacher "Turnover"

In the discussion above, the "rate of new hires" and the "average months of tenure" were presented as indicators of teacher "turnover". The LFS data showed, for the average rural teacher, the indicators of turnover showed little difference between metro and non-metro areas and, if anything, longer tenure among rural teachers.

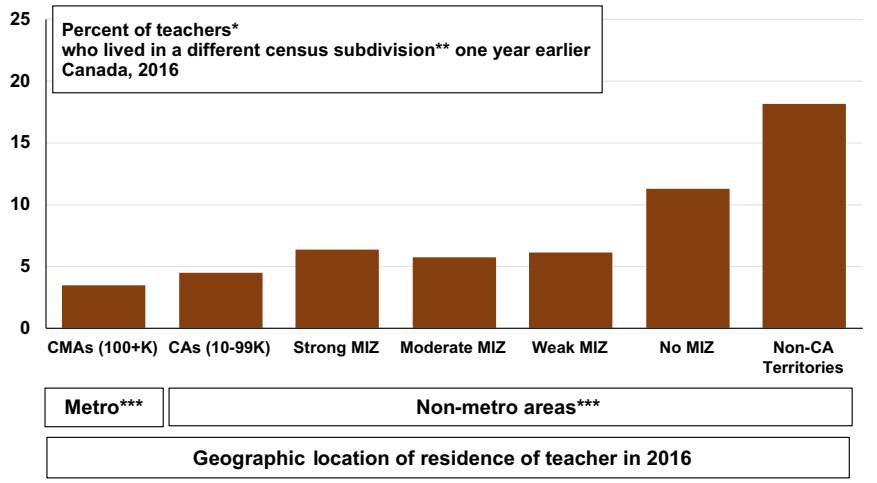
Here, we investigate differences in "turnover" for 2016 across degrees of rurality using Census of Population data. To indicate the degree of turnover, we use a measure of *geographic* mobility—specifically, did the individual reside in a different city/town/municipality[30] one year ago and five years ago. What is the "turnover" (or "stability") of teachers in rural schools? What is the likelihood that students in that area will be dealing with a new teacher on a frequent basis?

Given that "turnover" (as indicated by this measure of geographic mobility) is not very sensitive to mobility within cities, it is not surprising Fig. 21 shows that this geographic mobility is lower in metro areas. Geographic mobility[31] was higher for those far from urban centres (the no MIZ zones) and for those in the Territories. Specifically, compared to situation in the "core" rural areas (i.e. strong/moderate/weak MIZ areas), the turnover rates are 5 percentage points higher in no MIZ areas (for both one-year turnover [Fig. 21] and for 5-year turnover [Fig. 22]). Furthermore, the turnover rate in the territories (outside the CAs of Whitehorse and Yellowknife) is an additional 5 percentage points higher (for both one-year and five-year rates of turnover).

Thus, schools in "more remote" rural areas have a higher turnover of teachers. Keep in mind that, together, no MIZ plus the rural areas of the territories (i.e. all areas in the territories except Whitehorse and Yellowknife) comprise about 1% of

[30] By city/town/municipality, we are specifically referring to the Statistics Canada concept of a census subdivision. Census subdivision (CSD) is the general term for municipalities (as determined by provincial/territorial legislation) or areas treated as municipal equivalents for statistical purposes (e.g. Indian reserves, Indian settlements and unorganized territories) (Statistics Canada 2018). Generally, a CSD is a unit of local government to whom one pays property taxes and is the jurisdiction that maintains roads, collects garbage, etc. Many CSDs are small—both small in population size and small in geographic area. For example, Plenty, Saskatchewan is a CSD because it is an incorporated place. Its land area is 0.65 square kilometres and the 2016 population was 164 residents. However, the CSD of the City of Ottawa has a land area of 2790 square kilometres and a 2016 population of 934 thousand. One could move over 90 kilometres within the CSD of Ottawa still be classified as "not moving" (i.e. not changing the CSD of residence from one-year ago or from five-years ago). We would expect our measure of geographic mobility as an indicator of "turnover" of teachers in schools would underestimate the geographic mobility of teachers in cities as city teachers could change schools but not change their CSD of residence. However, in sparsely population areas (such as Plenty, Saskatchewan), most teachers who change schools would also change their CSD of residence. Thus, we suggest that geographic mobility as a measure of teacher mobility provides more useful information on teacher turnover specifically in rural areas.

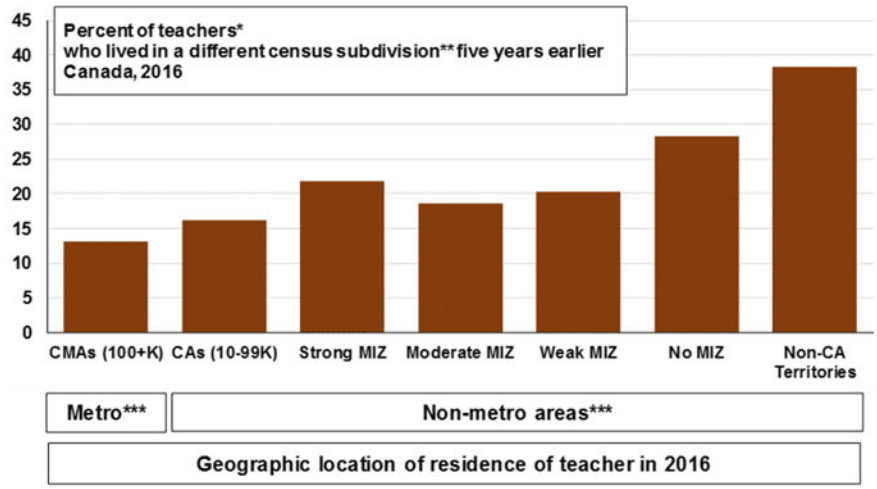
[31] Bollman (2020) repeated Figs. 21 and 22 for three different age groups for each province and territory. "Turnover", as indicated by geographic mobility, was consistently higher, in all population areas, for younger teachers—those under 35 years of age.



* Teachers include elementary school and kindergarten teachers (NOC 4032) plus secondary school teachers (NOC 4031).
** A census subdivision is an incorporated town or incorporated municipality.
*** Metro refers to Census Metropolitan Areas (CMAs) (population of 100,000+) which includes neighbouring towns and municipal ities where 50+% of the employed persons commute to the CMA.
*** Non-metro refers to individuals residing outside CMAs. Census Agglomerations (CAs) have a population of 10,000 to 99,999 and include the population of neighbouring towns and municipalities where 50+% of employed persons commute to the CA. Metropolitan Influenced Zones are delineated on the basis of the share of the workforce commuting to a CMA or CA (Strong: 30 -49%; Moderate: 5 -29%; Weak: 1 -4%; No MIZ: 0%)
Source: Statistics Canada. Census of Population, 2016, Custom tabulation .

Chart by RayD.Bollman@sasktel.net

Fig. 21 Per cent of teachers who lived in a different census subdivision one year earlier, by Metropolitan Influenced Zone, 2016, Canada



* Teachers include elementary school and kindergarten teachers (NOC 4032) plus secondary school teachers (NOC 4031).
** A census subdivision is an incorporated town or incorporated municipality.
*** Metro refers to Census Metropolitan Areas (CMAs) (population of 100,000+) which includes neighbouring towns and municipalities where 50+% of the employed persons commute to the CMA.
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Source: Statistics Canada. Census of Population, 2016, Custom tabulation.

Chart by RayD.Bollman@sasktel.net

Fig. 22 Per cent of teachers who lived in a different census subdivision five years earlier, by Metropolitan Influenced Zone, 2016, Canada

the Canadian population, 4% of the "non-metro" population and 6% of the "rural and small town" (non-CMA/CA) population.

Figure 22 shows the same[32] rural–urban difference when we look at mobility from five years' earlier. All the non-metro areas report higher mobility than metro and, the further from an urban area one lives, the more likely one is to have moved. Note that there are some important variations in this pattern insofar as the pattern for moderate and weak MIZ areas is more like the CAs (census agglomerations). They do not follow the pattern of a higher turnover among those in areas further from an urban centre.

A caution is in order here: we do not know if the move reported by these teachers was from one rural area to another, or from an urban to a rural area (or, for those in urban areas from one urban area to another). We only know they reported living in a different census subdivision than was the case five years prior.

Figure 23 gives a slightly different perspective. It shows the per cent of teachers who were *born* in a different province or territory than where they were employed as teachers in 2016—what those in Atlantic Canada would call "Come From Aways".

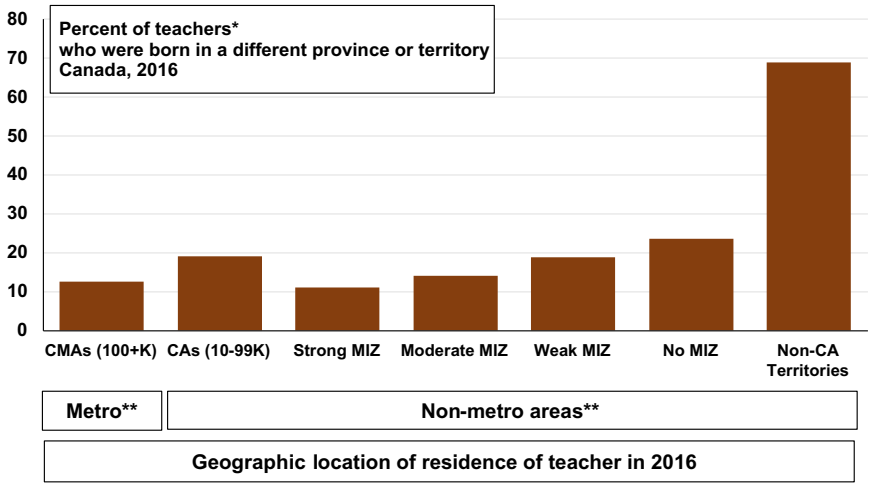
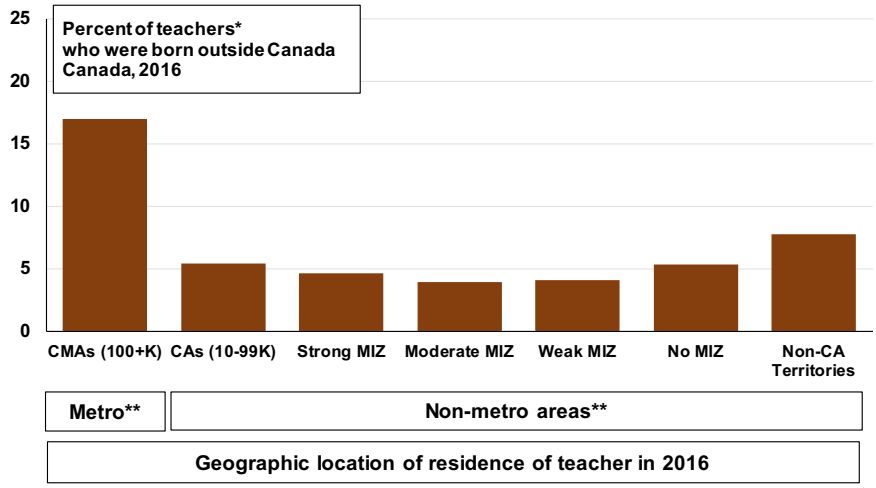


Fig. 23 Per cent of teachers who were born in a different province or territory, by Metropolitan Influenced Zone, 2016, Canada

[32]Note that the scale in the two figures (the vertical axes) is different, to accommodate the higher turnover rate over a five-year period (Fig. 22) compared to the one-year turnover rate (Fig. 21). This difference creates a difference in the visual impact of the rural–urban difference in the two graphs. However, it is important to take into account the corresponding numbers and size of the actual difference when interpreting them.



* Teachers include elementary school and kindergarten teachers (NOC 4032) plus secondary school teachers (NOC 4031).
** Metro refers to Census Metropolitan Areas (CMAs) (population of 100,000+) which includes neighbouring towns and municipalities where 50+% of the employed persons commute to the CMA.
** Non-metro refers to individuals residing outside CMAs. Census Agglomerations (CAs) have a population of 10,000 to 99,999 and include the population of neighbouring towns and municipalities where 50+% of employed persons commute to the CA. Metropolitan Influenced Zones are delineated on the basis of the share of the workforce commuting to a CMA or CA (Strong: 30-49%; Moderate: 5-29%; Weak: 1-4%; No MIZ: 0%)
Source: Statistics Canada. Census of Population, 2016, Custom tabulation.
Chart by RayD.Bollman@sasktel.net

Fig. 24 Per cent of teachers who were born outside Canada, by Metropolitan Influenced Zone, 2016, Canada

Those living in or near a metro area tended to come from the same province. But as one looks at those in weak or no MIZ areas, and especially at those in the territories, we see a higher per cent who were born in another province or territory.

What about immigrants from abroad? Figure 24 shows that the pattern is quite different than we saw in mobility from another province or territory. Metro centres have a much *higher* per cent of teachers who were born outside Canada than is true in any of the less populated areas. This pattern parallels the fact that immigrants more generally tend to be concentrated in metropolitan areas. Nonetheless, it is worth noting.

There is a higher per cent of teachers born outside Canada in the Territories, compared to the other non-metro areas, reinforcing the notion that the experience in the Territories is different from other rural areas in important ways. That said, the per cent of teachers from outside Canada in the rural areas of the territories is a fraction of that in the larger metropolitan areas.

18 Age of Teachers

Does the age structure of teachers suggest that there are a lot of vacancies that are likely to be created in teaching in the next few years? Not really. Figure 25 shows that the age distribution of teachers has, in fact, changed little over the twenty years

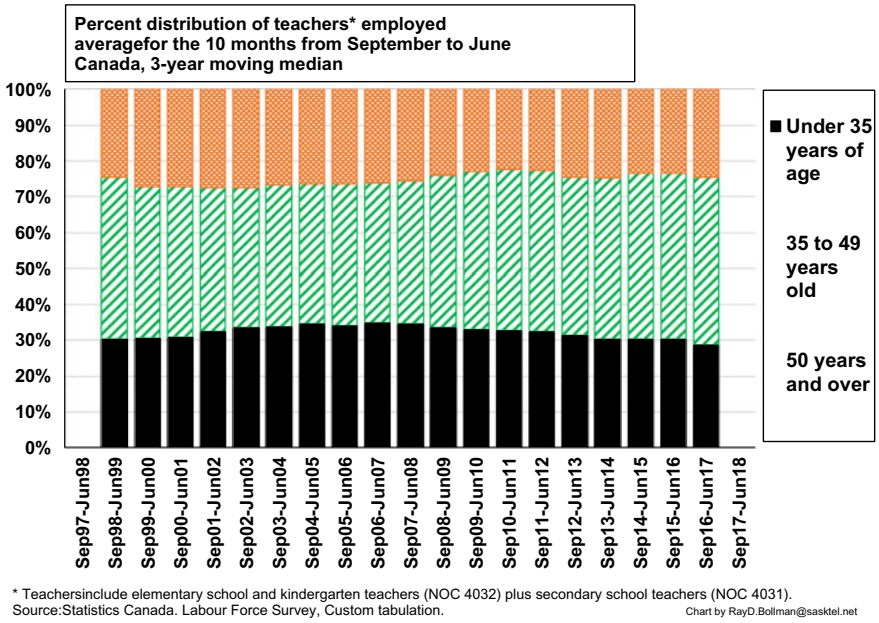


Fig. 25 Per cent distribution of employed teachers by age, 1997–2017, Canada

for which we have data. There is some variation, but the general pattern is that nearly 30% of employed teachers are 50 years of age and older; and about 30% are in the youngest age group (those under 35 years of age).

Over time, a (slightly) higher share of metro teachers have been under 35 years of age (Fig. 26), consistent with more growth in the number of students in metro areas.

Within non-metro areas, the share of teachers under 35 years of age has hovered around 30% since 2000. As noted in the previous footnote, there is a higher turnover among younger teachers but the overall share of younger teachers has remained essentially unchanged over time.

More relevant here, perhaps, is the fact that slightly smaller share of rural teachers is younger (under 35 years of age) compared to the situation in metro centres. Correspondingly, slightly more of the rural teachers are in the 50 years and older group (Bollman 2020). On the one hand, the overall age distributions in rural and urban areas are very similar. On the other, the difference that does exist, slight as it is, suggests rural teachers are no younger than others, and if anything, for many years prior to 2015, they are, if anything, somewhat older.

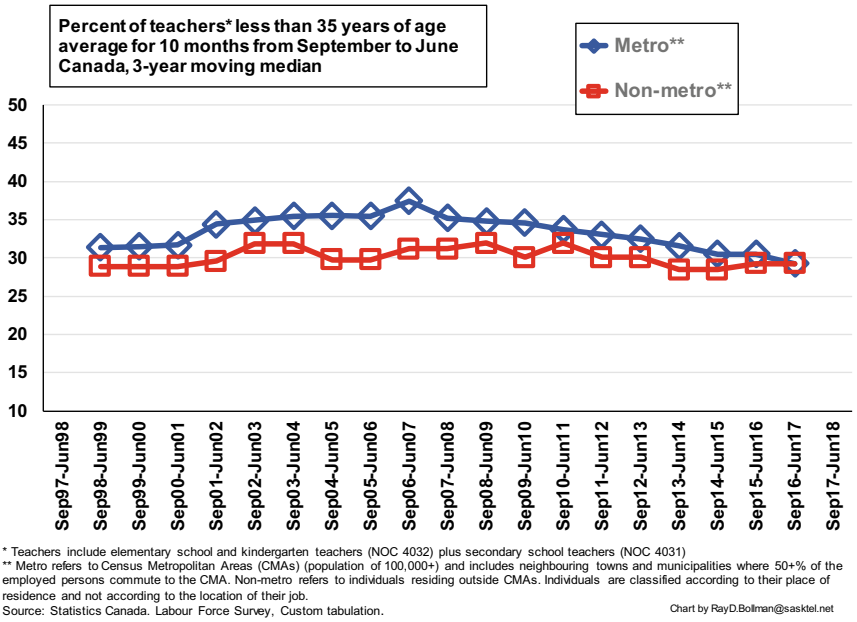


Fig. 26 Per cent of employed teachers, less than 35 years of age, by rural–urban location, 1997–2017, Canada

19 Summary, Teacher Geographic Mobility and Age

Using data from the 2016 census that allows for a detailed breakdown by distance from urban centres (the "MIZ" classification), we see that there are some interesting and potentially important differences "within" rural areas. There is evidence of higher levels of mobility in those areas furthest from urban centres (the no MIZ areas). While we do not have information on where these moves originated, the pattern suggests higher teacher turnover in these more remote areas.

It is perhaps unsurprising to anyone familiar with schooling in the northern territories that a large per cent of teachers there come from another province or territory—most likely a southern province.

Immigrants to Canada who take up teaching positions, however, do not seem to flock to rural areas or the northern territories. Rather, they are concentrated in the larger metro areas.

Finally, moving back to time trend data from the Labour Force Survey, information on the age structure of teachers in Canada suggests that (a) there has been little change in this age structure since 1997, and (b) that there is little difference in the age of the teachers employed in rural versus urban (non-metro versus metro) areas. However, the census data on geographic mobility show higher rates of turnover for younger teachers.

20 School Attendance and High School Graduation Rates

The previous section looked at a variety of employment and other issues for teachers in rural and urban Canada. What of the students?

Figures 27 and 28 show the school attendance rates by rural[33] versus urban location. School attendance is essentially the same in metro and non-metro areas for individuals 15–16 years of age—but there is a slightly lower attendance rate (95%) in rural areas compared to 97% in urban areas. These high rates of school attendance no doubt reflect the fact that school attendance is mandatory up to age 16 in most provinces.

Figure 28 shows the same trend lines for the somewhat older age group, those 17 or 18 years of age. Here, we see lower school attendance rates in rural areas. In 2017–2018, 84% of those 17 or 18 years of age in urban areas compared to 76% of those in rural areas reported attending school[34] that year.

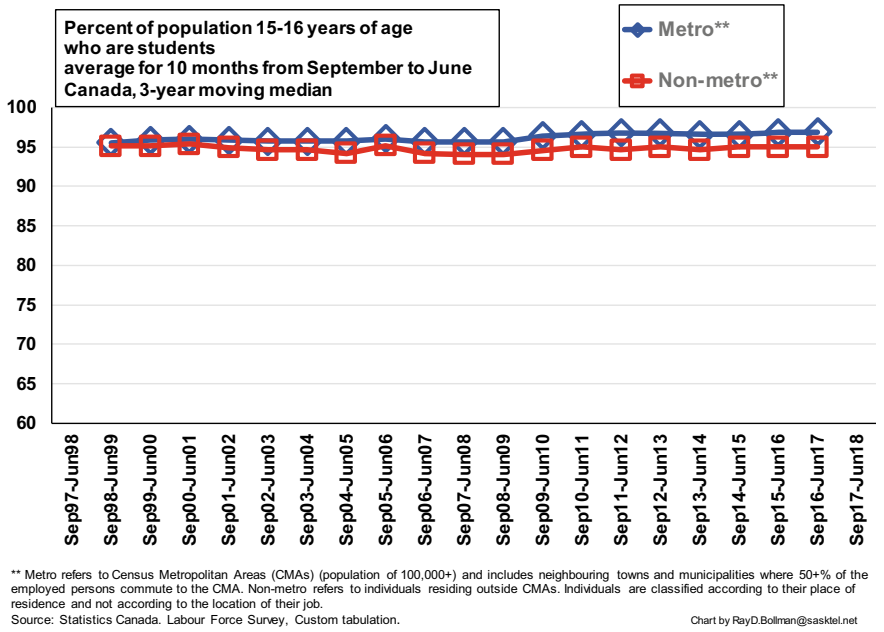


Fig. 27 Per cent of population 15–16 years of age who are students, by rural–urban location, 1997–2017, Canada

[33] More detailed analyses (not shown) make it clear that using a population cut-off of less than 10,000 rather cut-off of less than 100,000 makes no difference to these trends. The trend line for rural areas is identical for the two ways of representing "rural".

[34] In these two figures "school" attendance includes attendance at any educational institution, including a CEGEP, a community college, trade school or university.

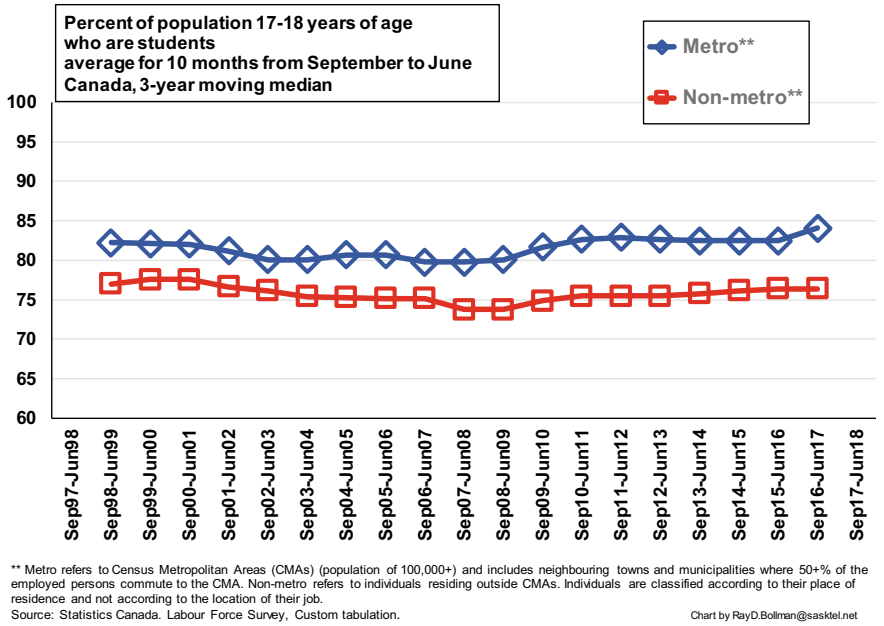


Fig. 28 Per cent of population 17–18 years of age who are students, by rural–urban location, 1997–2017, Canada

What is more, as we see in Fig. 29, there is evidence that those in rural areas are more likely to have left school without completing a high school diploma. This graph shows the number of those, 20–22 years of age in 2016, who do not have a high school diploma. They are classified by their location[35] five years prior (in 2011) when they were of high school age.

A higher percentage of those from rural areas report that they have no high school diploma. Further, the more "rural" (the weaker the MIZ), the higher the per cent without this diploma. Note the very high levels in the northern territories; over 50% of those in this age group say they have no high school diploma.

This graph illustrates that students of rural schools are less likely to graduate from high school and thus is one key ingredient in the argument that rural individuals have lower levels of education. The other ingredient in the discussion is that individuals with a higher level of education tend to move away from rural areas to find a job.

[35]The decision to consider high school drop-out (non-completion) rates by the location of the individual's residence when they were 15–17 years of age was to allow an examination of the differential graduation rates of the rural versus urban schools they attended earlier.

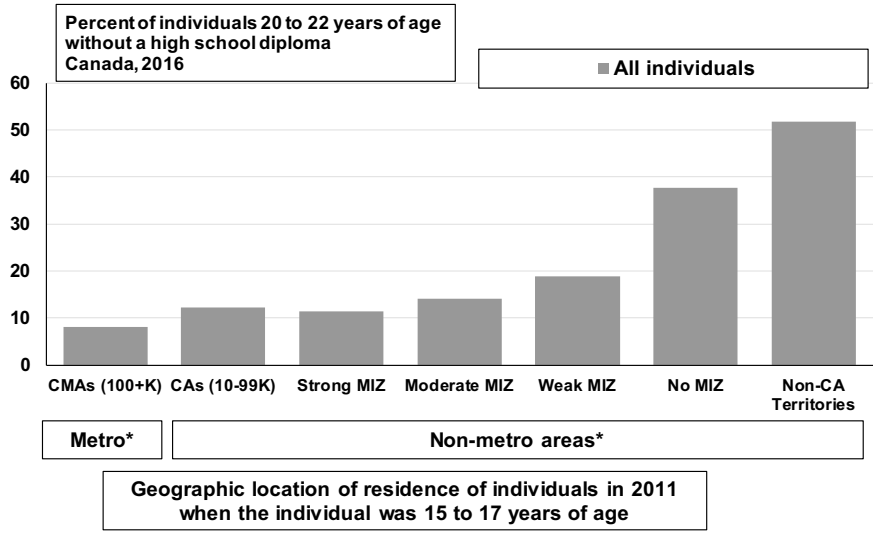


Fig. 29 Per cent of individuals 20–22 years of age without a high school diploma, by Metropolitan Influenced Zone, 2016, Canada

21 Summary, School Attendance and High School Completion

Given the compulsory school attendance rules, it is not surprising that there is little rural–urban difference in the school *attendance* rates of those 15–16 years of age and that there is little change since 1997 in these rates. The equivalent rates for those 17–18 years of age show little change over time, but *do* suggest a consistent rural–urban difference. Those 17–18-year-olds living in rural (non-metro) areas are less likely than their counterparts in urban (metro) areas to be attending school.

Furthermore, the further one lives from an urban centre (the weaker the "MIZ"), the more likely one is to have left school without completing a high school diploma, according to our information from those aged 20–22 years of age. This finding presents one key to the observation of lower levels of educational attainment among residents in rural areas.

22 Aboriginal Issues

There are few issues of importance in Canada that do not require one to take into account the very different experiences of those who identify as Aboriginal. Education is no exception.

In this section, we will provide some data[36] that will hopefully highlight some relevant points to take into account when looking at education in Canada, and particularly education in rural Canada.

Let us look first at the age distribution of those with an Aboriginal Identity. Figure 30 provides the relevant information. Here, we see that there is a much higher concentration of children (0–14 years of age) with an Aboriginal Identity, compared to the adult population. This fact means that, even without any new individuals self-identifying as Aboriginal, the number of those with Aboriginal Identity will rise as these children age.[37] This shift will have an impact on the number of school-aged

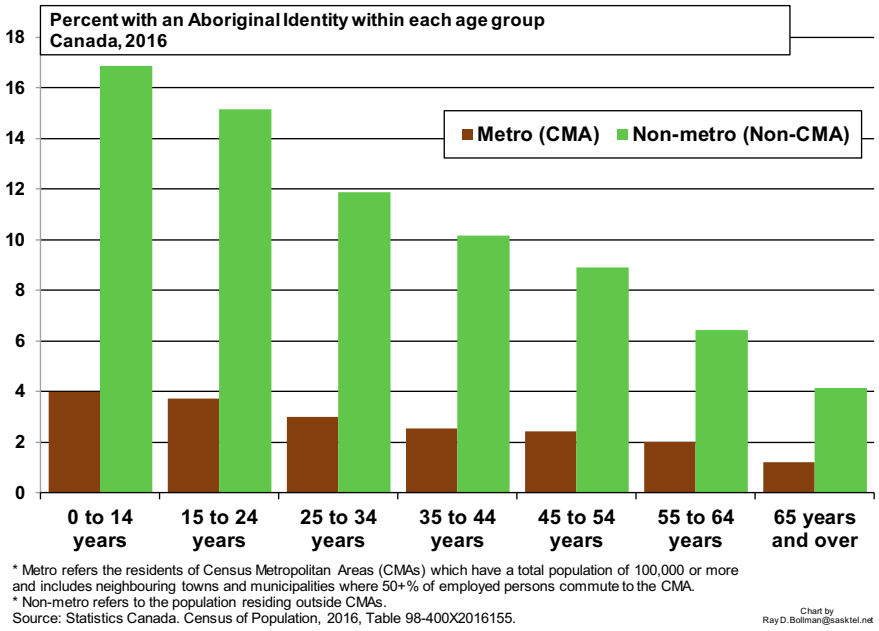


Fig. 30 Population with an Aboriginal Identity, by age and by rural–urban location, 2016, Canada

[36] Data sources for those with an Aboriginal Identity are more limited than is true for some of the other data we have reported. The LFS, the source of our time trends, does not include residents of Indian Reserves. Since identification of Aboriginal Identity in census data relies on self-identification, and the numbers self-identifying in this way have increased with each census, it is difficult to interpret changes over time. Therefore, this section focuses on data from the 2016 census.

[37] See Bollman (2020) for data on the percent of Aboriginals in each age group within metro and nonmetro areas in each province and territory . There are considerable differences in the concentration of those with an Aboriginal Identity by province/territory, and there are also important

children, especially in those locales where there is a concentration of those with an Aboriginal Identity.

Figure 30 also gives us some important information about those locales as well. It is clear that there is a much higher concentration of those with an Aboriginal Identity in rural/non-metro than in the metro (over 100,000) centres. In general, the more "rural" (the further one lives from an urban centre; i.e. the weaker the MIZ) the higher the concentration of those with an Aboriginal Identity (Bollman 2020).

Further, if one looks at the rates of those 20–22 years of age without a high school diploma (Fig. 31), there are a number of important findings.

First of all, in all geographic areas shown, more of the youth with an Aboriginal Identity than others report that they do not have a high school diploma. This difference exists in metro centres, in small urban centres and in each type of rural area. What is more, the further one gets from an urban centre (the weaker the "MIZ") the larger the

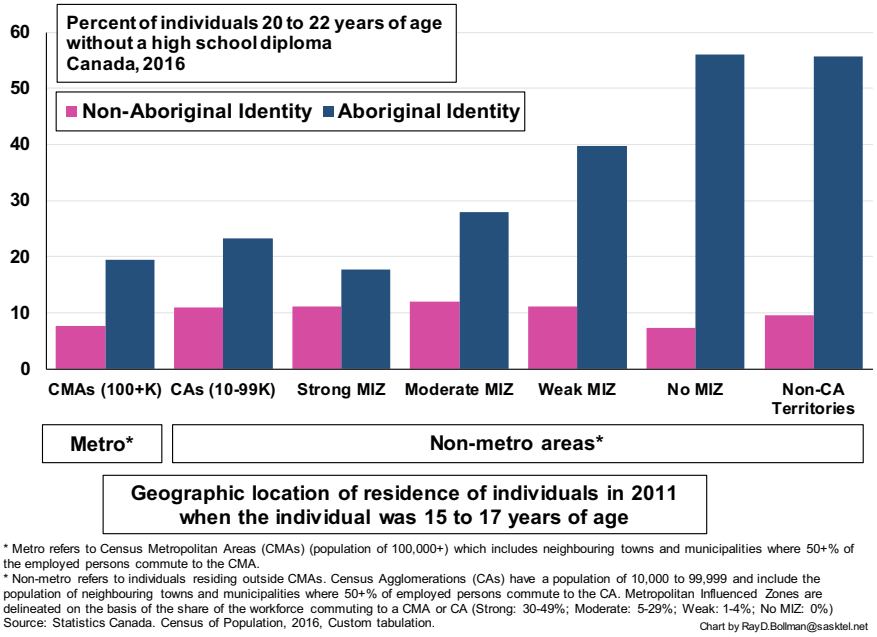


Fig. 31 Per cent of individuals 20–22 without a high school, by Aboriginal Identity and Metropolitan Influenced Zone, 2016, Canada

differences in the concentration of those with an Aboriginal Identity by *age* and province/territory. Not surprisingly, there are high concentrations of those self-identifying as Aboriginal in the three northern territories. Note also the high concentrations in both metro and non-metro areas in Manitoba and Saskatchewan. The age distribution of those with an Aboriginal Identity in these provinces means that, in the next few decades, 35–40% of those entering the labour force in non-metro areas, and just under 20% of those in metro areas in those provinces, will be those with an Aboriginal Identity.

difference in high school dropout rates of those with an Aboriginal Identity compared to the non-Aboriginal population in the same type of geographic area.

Secondly, the pattern we saw in Fig. 29 (the more rural the area, the higher the per cent without a high school diploma), *only* appears to hold for those with an Aboriginal Identity. If one looks at the bars in Fig. 31 for those who do *not* report an Aboriginal Identity, there is little rural–urban difference. About 8% of those in the metro centres (of 100,000 or more), compared to about 11–12% or fewer of those in smaller centres have no high school diploma by the time they are 20–22 years of age.

Compare this to the difference by locale for those an Aboriginal Identity. About 19% of those in metropolitan areas and 23% in smaller urban centres report they have no high school diploma. This per cent mushrooms to 40% in weak MIZ areas and is over 50% in the sparsely populated no MIZ areas and the territories.

In other words, some if not much of the perceived current "problem" of rural youth getting less education may well be less of a specifically rural issue and more a reflection of the perennial problem of the position of Aboriginal peoples in Canada.[38]

Of course, one way to start addressing this educational gap is to have Aboriginal teachers available to teach Aboriginal students. As of 2016, 3.3% of teachers reported having an Aboriginal Identity. Figure 32 shows that the percentage of teachers with such an identity is higher within areas that are more distant from metro centres. That is, the geographic areas where the number of students (and high school dropouts) with an Aboriginal Identity is highest are also the areas where there are more teachers with an Aboriginal Identity. Whether there is a solid match between the need and the teaching staff remains to be seen.

23 Summary, Aboriginal Issues

While, in 2016, 5% of the total Canadian population identified as Aboriginal, 7.6% of those under 20 years of age so identified. In other words, the proportion of those who identify as Aboriginal will increase in coming years as these children age. This projected trend means that Aboriginal issues will be even more prominent, especially when dealing with policies relating to children and schooling.

Further, it is clear that rural areas have a higher concentration of individuals with an Aboriginal Identity, compared to urban areas. Indeed, the further one moves from

[38]Comparing the pattern found in Fig. 31, for the year 2016, with the equivalent results for 2001 (Bollman 2020) it is evident that (a) the overall finding is the same in both years: most of the rural—urban difference in high school completion rates is a reflection of rural–urban differences in concentrations of those with an Aboriginal Identity. (b) From 2001 to 2016, high school completion rates have increased (i.e. drop-out rates have declined) for both those with and those without an Aboriginal Identity. For those 20–22 years of age with an Aboriginal Identity, the drop-out rate went from 46% in 2001 to 29% in 2016; for non-Aboriginal youth 20–22 years of age the rates declined from 16 to 8% over the same time period.

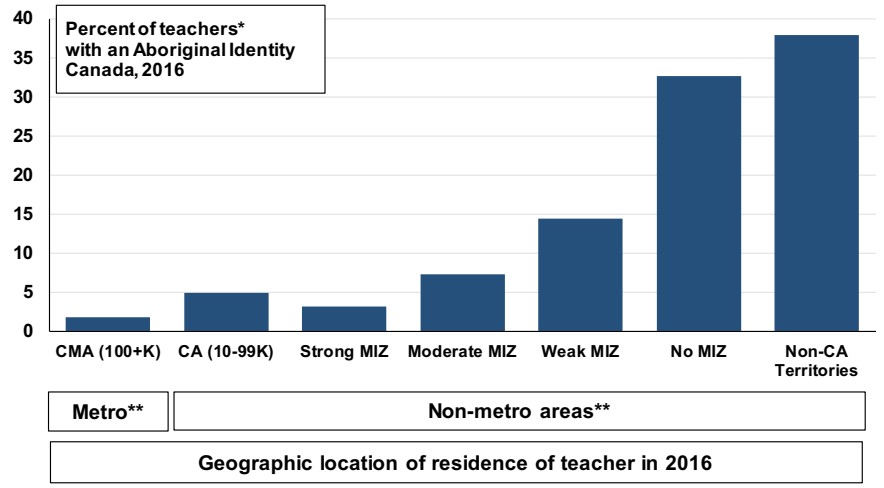


Fig. 32 Per cent of teachers with an Aboriginal Identity, by Metropolitan Influenced Zone, 2016, Canada

urban areas (the weaker the MIZ), the higher the concentration of those with an Aboriginal Identity.

Looking at high school completion rates, the rural–urban difference in high school completion rates, documented in Fig. 29, almost entirely reflects the differences in high school completion rates by Aboriginal status, and the differential concentration of those with an Aboriginal Identity in the more rural areas. In other words, much of this particular "rural" issue is really an issue of the complex status of Aboriginal peoples in Canada.

One way of dealing with (a) the increasing need for teachers for Aboriginal children and (b) the higher concentrations of those with an Aboriginal Identity in more rural areas is to hire more Aboriginal teachers, especially in these rural areas. We have seen that there are, in fact, more Aboriginal teachers in the more rural areas. It is clear from the data we present that there will be an increasing need for such teachers, especially in the more rural and remote regions of the country.

24 Overview of Findings

In the past two decades, depending upon the province or territory, there has been a decline in the demand for teachers (proxied by the population of school-aged children). Alberta and Nunavut are exceptions. In most jurisdictions, there has been

a recent increase in the population 6–14 years of age. A projection scenario using "medium growth assumptions" indicates that the population of school-aged children is expected to grow in the coming decades. The exceptions are the provinces of Newfoundland and Labrador, Prince Edward Island, and Nova Scotia.

Not surprisingly, the historical trends have shown more decline in rural/non-metro areas. However, the non-metro areas of some provinces have shown an *increase* in their population, 6–18 years of age, in recent years (non-metro areas of Quebec, Manitoba, Saskatchewan, Alberta, British Columbia, the Northwest Territories and Nunavut).

The number of employed teachers did not decline at the same pace as the population of school-aged children, 6–18 years of age. The ratio of the population 6–18 years of age per employed teacher fell gradually from the early 2000s to 2017/2018. The pattern for this ratio in urban/metro areas and in rural/non-metro areas is essentially identical. In some years, there were marginally more students per teacher in rural areas.

The number of graduates from Bachelor of Education programs has been equivalent to 6–7% of the number of employed teachers from 2000/2001 to 2015/2016. However, the decision in Ontario to halve the enrolment in Bachelor of Education graduates and to extend the programme from a 1-year to a 2-year programme will significantly impact this relationship.

The literature has noted numerous challenges facing rural teachers and facing administrators in attracting and retaining rural teachers. Our general conclusion is that the experience of the average rural teacher is very similar to the experience of the average urban teacher. However, and importantly, the experience of teachers in remote rural and northern areas appears very different.

We did find a consistent rural–urban difference in the share of teachers by size of school. More teachers in rural than in urban areas were employed in smaller schools (that is, those with less than 20 employees). This rural–urban difference is more evident among elementary than secondary school teachers.

25 Discussion

This chapter has presented some original analyses, based on Statistics Canada data, that "sets the stage" for a discussion of schools and schooling in rural areas.

It is interesting that the employment situation of teachers differs so little for the average rural teacher compared to the average urban teacher. This may reflect the power of teachers' unions to ensure consistent terms of employment for its members.

We had expected to find more overall rural–urban differences, given that the research literature documented the challenges rural areas have attracting and retaining teachers, and the higher levels of mobility in rural areas.

Based on this literature, we expected a number of differences that were not evident in the rural–urban comparisons we examined. Specifically:

a. We expected to find the ratio of annual hires to employed teachers would be greater in rural areas as the difficulty of retaining teachers would be expected to generate a higher teacher turnover in rural areas. Instead, we found the *same* per cent of employed teachers are hired on an annual basis in both rural/non-metro areas as in urban/metro areas. In addition, the rate of hiring is declining, not increasing, as was our expectation. This indicator did not show a higher rural teacher turnover.
b. We expected more rural teachers to be employed on temporary contracts as rural administrators would be expected to hire an available teacher on a temporary basis while searching for a candidate with a needed specialization for a permanent position. We found (virtually) no urban–rural difference in the share of teachers with a permanent contract. Within non-metro areas, the share of teachers with a temporary contract was marginally greater in some years, including recent years.
c. As another indicator of turnover, we tabulated the average months of tenure of rural and urban teachers. If turnover was a greater problem in rural areas, we expected teachers would report fewer months of tenure with the current employer, on average. In fact, non-metro teachers have a slightly *longer* tenure compared to metro teachers and this level of tenure has not changed much in the last ten years. Thus, this indicator of turnover suggests *lower* turnover of rural teachers—and turnover is not increasing.
d. Another indicator of turnover that we considered was the age distribution of teachers. If there is difficulty of retaining rural teachers, we would expect there to be a higher share of younger teachers in rural areas. We found, in fact, a (slightly) *lower* share of younger teachers in rural/non-metro areas—and this share has changed very little over time (with a slight decline in the most recent 10 years).
e. The above indicators of turnover compared the average rural teacher with the average urban (metro) teacher. To look at the situation across *types* of rural areas, we looked at census data on the geographic mobility of teachers—did the individual change communities in the previous year and in the previous five years? In most rural (non-metro) areas, turnover, as indicated by geographic mobility, was slightly higher than in metro areas (with the caveat that this measure likely underestimates the mobility in urban areas). More importantly, *within* rural areas turnover, as measured by geographic mobility, was much higher in remote rural and northern areas. Researchers studying the situation facing rural teachers should be specific on whether they are studying the situation in metro-adjacent rural areas or in rural remote and northern rural areas. Turnover appears to a significant issue specifically in rural remote and northern areas.

One key to understanding these findings might be the recognition in the literature of the important variation *across* rural areas (Alberta Teachers' Association 2002; Canadian Council on Learning 2006; Dibbon 2002; Eaton et al. 2015; French 2019; Hamm 2015; Lamb et al. 2014; Saskatchewan Learning 2007; Saskatchewan School Boards Association 2010).

Our results do show that the situation in areas far from metro centres is *quite* different from those in more metro-adjacent "rural" areas. In other words, the well-documented "challenges" facing rural communities seem to represent the issues facing those in *remote* rural areas. Those closer to urban areas seem to have experiences that often match the situation in urban areas. If this is the case, it is important that research on rural areas and rural schools be clear about the fact if it is the "distance from urban" component of some rural communities that is creating some of the challenges and not the smaller size associated with being a rural community, per se.

While we also document that those who live in communities in weak MIZ, no MIZ and "Non-CA communities in the Territories" make up only about 5% of Canada's population as a whole: (a) there is important provincial variation in this distribution, (b) the share of the population in these areas that identifies as Aboriginal is higher than in other areas, and (c) the absolute (smaller) size of the problem does not negate its importance.

So, in addition to presenting some previously unpublished data on Bachelor of Education graduates and the employment situation experienced by Canadian teachers, over time, we were able to confirm some important challenges facing schools in some rural communities. One challenge is evident in these higher levels of teacher mobility in remote rural areas. This mobility creates issues for rural students who face high turnover in their teachers, and it creates hiring issues for school administrators, especially when trying to match teachers to the range of specialties required in a given year. And, as Kitchenham and Chasteneuf (2010) note, beyond the challenge of finding teachers to *fill* a position, many northern and remote schools face the additional challenge of finding teachers who are aware of the demands of teaching in a remote area, and who are sensitive to the culture and experience of their students.

Finally, we looked at one indicator of the situation of rural students. We looked at individuals 20–22 years of age in the 2016 census and classified them according to the urban or rural place of residence in 2011 (when they were 15–17 years of age and would be expected to be attending high school). We then determined whether these individuals had attained a high school diploma. Individuals residing in rural areas near to metro centres were generally equally like to have completed a high school diploma as were metro residents. However, the more rural the place of residence when the individual was 15–17 years of age, the greater the share of individuals who had not attained a high school diploma.

Importantly, when these individuals were classified according to whether they reported as having an Aboriginal Identity, we found:

(a) In each type of metro or non-metro area, individuals with an Aboriginal Identity were much less likely to have attained a high school diploma.
(b) The share of non-Aboriginal individuals who had not attained a high school diploma was essentially the same across all geographic areas.
(c) Thus, the urban to rural gradient in the share of youth without a high school diploma is largely due to the higher share of individuals with an Aboriginal Identity in rural remote and northern areas.

In schools with a high proportion of those with an Aboriginal Identity, one proposed solution to these challenges has been to train and hire more Aboriginal teachers. However, as Eaton et al. (2015) note there is simply not enough access to teacher certification programmes for those in remote rural areas, nor to certification programmes to train Aboriginal teachers (see also Frennette 2002; Looker 2010b).

We recognize the complexity of dealing with high school completion rates in rural, remote, and Aboriginal communities. As Corbett and Beck (2016) and others note, completing high school may make little sense for some rural students, if there are (a) few jobs available to them that require higher levels of education and (b) if getting further education requires them to leave their home community (Corbett 2007). Then, the issue would be more of ensuring that high paying, high skilled jobs are available across a range of settings, and that these jobs be more available to youth in remote rural communities.

An important caveat to this message is the fact that the demographic shift in the population, over the last few and the next several years as the baby boomers retire, has created and will create a situation where there are fewer young people coming onto the labour force than there are older individuals exiting into retirement. That is, there will be a labour *shortage* in all population areas, likely to 2029 (Bollman 2014, 2020). This shortage appeared in non-metro areas of Canada in 2008, and in metro areas as of 2013.[39] This shift could well create circumstances where rural youth, rather than "Learning to Leave" (as Corbett 2007 argued), they may "leave to learn" (Foster and Main 2018)—and then have more options to return as jobs open up in both rural and urban areas.

Teachers in remote rural areas need access to supports that are often unavailable or are limited. These include: professional development options, access to reliable high-speed Internet, and mentoring in understanding local cultural norms (Eaton et al. 2015; Kitchenham and Chasteneuf 2010). Beyond simple access to computers and the Internet, teachers in all rural areas, but especially in remote and northern areas, need IT support and ongoing access to training (Looker and Naylor 2010b).

So, while not all rural areas face all the challenges documented in the research literature, these challenges are real enough for those who do face them. Our analysis has helped to set the stage for identifying *where* particular challenges might lie so that they can be better addressed.

[39]The labour shortfall (fewer individuals projected to enter the labour force than are exiting it) has been and will be more pronounced in some provinces than others. It has been and will be less pronounced in Manitoba, Alberta and Saskatchewan (Bollman 2020).

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