

Impact of Teachers' Professional Development on the Reading Achievement of Canadian Allophone Students

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Abstract

This study examines the impact of teachers' professional development on Canadian allophone students' learning and reading performance levels. We used the data from the Pan-Canadian Assessment Program 2016 involving Grade 8/Secondary II Canadian allophone students ($N = 2,244$) and teachers in French and English Language Arts ($N = 598$). Our correlation results show that Canadian allophone students' reading achievement was positively associated with teachers' professional development activities such as academic pursuits (e.g., university courses) and marking or scoring sessions. The correlations also demonstrate that teachers' professional practice of curriculum development had a positive influence on the learning levels of Canadian allophone students who were born in Canada, while teachers' participation in professional learning communities had a positive effect on Canadian allophone students who were not born in Canada.

Keywords: student achievement, Canadian allophone students, teacher professional development, student linguistic diversity, Pan-Canadian Assessment Program

Introduction

The number of immigrants in member countries of the Organisation for Economic Co-operation and Development (OECD) is on the rise, particularly due to the increase in international conflicts and natural catastrophes that have led to a growing diversity in immigration on many levels (e.g., language, ethnic, social, cultural, and religious) (Coste & Cavalli, 2018a; Population Division, 2020; Vertovec, 2007). In turn, this increasingly diversified immigration flux has had major repercussions on host societies in terms of education and the students' linguistic and cultural dimensions (Appave & David, 2017; Castles, 2010; Castles et al., 2002; Czaika & De Haas, 2014; Dalton-Puffer et al., 2014; Demireva, 2019; Directorate-General for Communication, 2018; Goldin et al., 2011; Newland, 2017; OECD, 2018; Silver, 2015; Somers, 2018; Triandafyllidou, 2018; Zetter et al., 2006). For this reason, we are now seeing more allophone students younger than 16 years of age who were born in or outside of the welcoming country and whose first language differs from the language of instruction in the host country.

It is with this in mind that many student assessment programs, such as the prominent Programme

for International Student Assessment (PISA), focus on student achievement by considering students' different language-related characteristics and their teachers' professional development to propose actions based on these profiles and needs (OECD, 2016a). In Canada, the Pan-Canadian Assessment Program (PCAP) informs on the learning levels of students across Canada, including those of students whose first language differs from the language of instruction. This program evaluates the reading level of students who are 13–16 years of age and the impact of their teachers' professional growth activities on their learning processes.

Canada has ranked highly among OECD countries with a strong education system (O'Grady et al., 2016; OECD, 2016a). However, recent PISA and PCAP results show that student performance levels in Canada have declined in the last 10 years (O'Grady et al., 2016). One factor that may explain this decrease is the increase in the number of new arrivals in the country, which went from 6,328,755 to 7,540,830 people between 2011 and 2016, signifying 1,212,075 additional immigrants (Statistics Canada, 2017). Within this immigrant population are students younger than 16 years of age whose first language differs from the languages of instruction in Canada (Council of Ministers of Education, Canada, 2016; OECD, 2018). When there is an increased number of these students in Canadian schools, it becomes an immense struggle for teachers who often lack the proper preparation and training to adequately respond to the specific needs of this student population (Brown & Medway, 2007; Kanouté et al., 2008; Larochelle-Audet et al., 2013; OECD, 2018).

Current teacher training practices fail to adequately prepare teachers—in terms of relevant knowledge, abilities, and aptitudes—for the challenges of cultural and language diversity (Appave & David, 2017; Arapi et al., 2019; Cenoz & Gorter, 2014; Demireva, 2019; Larochelle-Audet et al., 2013; OECD, 2015; Somers, 2018). Moreover, immigrant students in OECD countries estimate that their teachers do not know how to best address their needs (Brown & Medway, 2007; OECD, 2018) and that teacher professional development is out of touch with students' realities and learning difficulties (Larochelle-Audet et al., 2013). Consequently, when teachers do not receive the training required to properly address and respond to the needs of this student population, the disparities observed in immigrant students' academic results are bound to continue (Bouchamma, 2008; OECD, 2016b, 2018). Given these, we sought to learn more about the impact of teacher development on the learning and achievement of students whose first language differs from the language of instruction.

Review of the Literature

Professional development is an opportunity for teachers to constantly improve their competencies in line with the needs and expectations of their school system or to explore professional collaborations (Bouchamma, 2005; Goï, 2015; Le Boterf, 2002; Sergiovanni et al., 2014; Zepeda, 2012). Therefore, professional growth activities are instrumental in improving teaching practices and student learning—and ultimately meeting the students' needs in this regard (Leithwood & Jantzi, 2008; Nolan & Hoover, 2008; Northouse, 2012; Sergiovanni et al., 2014). Leithwood et al. (2004, 2020) reported that teachers' professional development practices that have a significant effect on both teaching and student achievement include the following: improving teaching practices; acquiring better adapted knowledge and know-how; and developing, coordinating, and implementing effective educational plans and programs (Bouchamma, 2005, 2009; Cotton, 2003; Marshall, 2005; Nolan & Hoover, 2008; Silva & Dana, 2001).

In the literature, studies are unfortunately rare on the subject of diversity in teacher training, and the reported effects fail to quantitatively consider the teacher's point of view (Bouchamma, 2009). According to Branch et al. (2012), a more thorough examination of teachers' perceptions of the impact of their professional development activities on their students' academic results—in the context of language diversity—would help to better understand how these practices affect student achievement. Hence, we address three key concepts in the present study, namely, teachers' professional development, factors determining language competencies, and allophone student achievement.

Student Achievement

The notion of academic achievement refers to the attainment of educational objectives associated with the mastering of a determined set of knowledge related to the students' learning path within their school system (Bouchard & St-Amant, 1996; Lefebvre, 1999). Student achievement is thus characterized by the

level of acquisition of a learning objective, as determined by the student's performance or success in a given curriculum, such as reading, for example. Although this level of expected achievement is the same for all students—including those whose first language differs from the language of instruction—the latter continue to experience integration issues in the form of academic, social, cultural, and even psychological difficulties that affect their results (Coste & Cavalli, 2018b; Jacquet & Masinda, 2014). Reinforcing teacher competency through targeted continuing education and training would serve to better support the integration of these students and, in turn, their achievement. In this sense, the academic success of this student population is often linked to the teachers' ability to deal with language diversity in their day-to-day pedagogical practices (Armand et al., 2008; Candelier, 2003; OECD, 2018; Perregaux et al., 2003).

Professional Development Practices and Resources

Professional development practices help prepare teachers to reinvest and more easily integrate newly acquired skills and strategies. Teachers perceive several of these pedagogical practices as having a considerable impact on student learning and achievement. These include differentiated teacher supervision, adapted modes of supervision, and collaborative initiatives and practices that have been shown to not only complement formal training but also better prepare educators for concrete situations in which their skills are clearly deficient (Azovide & Bouchamma, 2021; Bouchamma, 2005; Colletette et al., 2013; DuFour et al., 2004; Marks & Printy, 2003; Marshall, 2005; Nolan & Hoover, 2008; Sergiovanni et al., 2014; Silva & Dana, 2001).

Indicators of Language Competency in Allophone Students

There appears to be a connection between reading achievement and certain student characteristics, regardless of the child's origin (e.g., prevalent attitudes and behaviours within the family unit, such as the difficulty the parents have in using the host language, and the importance they give to literacy practices and support actions, such as having regular communication with their child regarding school). In the case of immigrant families, some families support actions to help their child develop a productive work ethic, autonomy, and creativity (McAndrew et al., 2015) and to influence the child's language skills when learning a new language of instruction or social codes vital to their integration (Colletette et al., 2013; Coste & Cavalli, 2018b; Dalton-Puffer et al., 2014; Duval et al., 2014; Goï, 2015; Jacquet & Masinda, 2014; Little, 2010; Vienneau, 2004).

That said, when this connection is challenged because of socioeconomic status and the parents' education level and relationship with the host culture (Kanouté et al., 2008; Thamin, 2015), studies show that this student population tends to integrate fewer specific skills. The abilities needed to effectively interact (e.g., communication, stress management, or acceptable social behaviour) are often misunderstood or unrecognized by teachers who lack the necessary intercultural experience, knowledge, and tools to undertake proper action and provide support (Armand et al., 2008; Ballinger et al., 2017; Coste & Cavalli, 2018b; Jacquet & Masinda, 2014).

Objectives

How teacher professional development affects student learning and achievement is a major factor influencing the choice of professional growth activities. Using quality professional development serves to improve teaching practices and student performance and better meet the students' needs. However, few studies on the subject of the professional development of teachers who work with different language groups quantitatively examine their perceptions of how their continuing education affects their students' academic growth and success (Bouchamma, 2009; Leithwood & Jantzi, 2008; Leithwood et al., 2020). The present study therefore addresses the connections between reading achievement and the teachers' views of the impact their professional development activities have on their students' performance.

Methodology

Questionnaire

This study drew from secondary data from the student and teacher surveys in the PCAP 2016. The student questionnaire covered students' sociodemographic characteristics, including gender (Question S01) and birth in Canada (Question S03A), and academic characteristics, including reading achievement (performance level), first language (Question S05), language of instruction (Question S06), and language they use outside of school to communicate with family (Question S07) (Appendix A). The teacher questionnaire covered teachers' professional experience (Question T2) and view of the impact of their professional development activities on how well their students learned (Questions T12A, T12B, T12C, T12D, T12E, T12F, T12G, T12H, T12I, and T12J) (Appendix B).

Sample

The sample consisted of Canadian allophone Grade 8/Secondary II students ($N = 2,244$) taken from the PCAP 2016 secondary data on Canadian students aged between 13 and 16 years of age. Among the participants, 51.5% were female ($N = 1,155$), 47.5% were male ($N = 1,066$), and 1% either identified themselves differently, preferred not to say, or did not respond ($N = 23$), with 34.9% born in Canada ($N = 783$), 64.8% born elsewhere ($N = 1,455$), and 0.3% not indicating where they were born ($N = 6$). These allophone students, whose first language was different from the language of instruction (French or English), presented diverse characteristics in terms of language competency (Table 1).

Table 1

Language Competency Characteristics of Canadian Allophone Students in PCAP 2016

| | | Language of instruction | | | | | |
|-------------------------------------------------------|---------------------------------------------------------|-------------------------|-------|----------|-------|----------|------|
| | | English | | French | | | |
| Frequency and % of language(s) used outside of school | | <i>N</i> | % | <i>N</i> | % | <i>N</i> | % |
| | English only or mostly English | 308 | 13.73 | 274 | 12.21 | 34 | 1.52 |
| | French only or mostly French | 18 | 0.80 | 2 | 0.09 | 16 | 0.71 |
| | English and French equally | 63 | 2.8 | 12 | 0.53 | 51 | 2.27 |
| | English and a language other than French | 1146 | 51.07 | 993 | 44.25 | 153 | 6.82 |
| | French and a language other than English | 126 | 5.61 | 6 | 0.27 | 120 | 5.34 |
| | Mostly another language | 554 | 24.69 | 443 | 19.74 | 111 | 4.95 |
| | Did not indicate the language(s) used outside of school | 29 | 1.30 | 12 | 0.54 | 17 | 0.76 |

Note. $N = 2,244$. $N = 29$ did not indicate the language(s) used outside of school.

The teachers ($N = 598$) of the sampled students taught French or English Language Arts. In terms of the number of years of teaching experience, 16.55% ($N = 99$) had less than 5 years, 26.58% ($N = 159$) had between 5 and 10 years, 21.5% ($N = 128$) had more than 11 years, 16.55% ($N = 99$) had more than 16 years, and 18.89% ($N = 113$) had more than 20 years. From 2011 to 2016, these teachers attended professional growth activities that had a certain level of impact on the achievement of their Canadian allophone students (Table 2).

Table 2
Impact of Teachers' Professional Development on Canadian Allophone Student Achievement

| | Level of the impact of professional development activities on Canadian allophone students | | | | | | | | <i>N</i> (students) |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------|----------|--------|----------|--------|----------|--------|---------------------|
| | None | | A little | | Some | | A lot | | |
| | <i>N</i> | % | <i>N</i> | % | <i>N</i> | % | <i>N</i> | % | |
| 1. Academic courses (e.g., university) | 644 | 28.7 % | 170 | 7.6 % | 362 | 16.1 % | 385 | 17.2 % | 1561 |
| 2. Workshops or conferences | 61 | 2.7 % | 350 | 15.6 % | 923 | 41.1 % | 519 | 23.1 % | 1853 |
| 3. Professional learning communities | 201 | 9.0 % | 323 | 14.4 % | 753 | 33.6 % | 468 | 20.9 % | 1744 |
| 4. Curriculum development | 581 | 25.9 % | 340 | 15.2 % | 435 | 19.4 % | 244 | 10.9 % | 1600 |
| 5. Development of common assessment items | 251 | 11.2 % | 416 | 18.5 % | 696 | 31.0 % | 344 | 15.3 % | 1707 |
| 6. Marking or scoring sessions | 447 | 19.9 % | 512 | 22.8 % | 443 | 19.7% | 244 | 10.9 % | 1646 |
| 7. Online (e.g., webinars, videos) | 739 | 32.9 % | 516 | 23.0 % | 256 | 11.4 % | 63 | 2.8 % | 1574 |
| 8. Integration of information technology into French/English Language Arts | 244 | 10.9 % | 548 | 24.4 % | 641 | 28.6 % | 324 | 14.4% | 1757 |
| 9. Assessment and evaluation | 129 | 5.7 % | 311 | 13.9 % | 898 | 40.0 % | 408 | 18.2 % | 1746 |
| 10. Differentiated instruction/resources to adapt to the students' interests and needs | 79 | 3.5 % | 407 | 18.1 % | 768 | 34.2 % | 546 | 24.3 % | 1800 |

Note. Students: $N = 2,244$.

Variables

Our dependent variable, namely, reading achievement level, housed three levels corresponding to the expected results in reading for Grade 8/Secondary II students: (a) below expected level, (b) expected level, and (c) above expected level.

Our independent variables were as follows: (a) the teacher's perspective of the impact of specific professional activities, such as university courses, workshops or conferences, professional learning communities, curriculum development, development of common assessment items, marking or scoring sessions, online (e.g., webinars and videos), integration of information technology into French or English Language Arts, assessment and evaluation, and differentiated instruction or resources to meet the students' interests and needs; and (b) the Canadian allophone students' sociodemographic characteristics (gender and birth in Canada).

Data Analysis

We used the IBM SPSS Statistics (Version 28) package to perform a Spearman analysis of the correlations between the Canadian allophone students' reading achievement level, gender, and birth in Canada and the teachers' perceptions of the impact of their professional development activities on student learning. This analysis method uses categorical variables (Glass & Hopkins, 1984; Vallerand & Hess, 2000).

Results

From our analysis to identify the correlations between the Canadian allophone students' reading achievement level, gender, and birth in Canada and the teachers' perceptions of the impact of their professional development activities on student learning (Table 3), we observed a weak negative yet significant correlation between Canadian allophone students' reading achievement level and gender. For gender ($r_s = -.097$; $p < .01$), the reading achievement level was higher for females and lower for males.

We found weak positive yet significant correlations between Canadian allophone students' reading achievement level and three variables. For birth in Canada ($r_s = .085$; $p < .01$), the reading achievement level increased when the student was born in Canada and decreased when the student was born outside of Canada. For the impact of teachers' professional development on student learning – *university courses* ($r_s = .074$; $p < .01$), the reading achievement level increased when the teacher perceived that the impact this practice had on student learning was more important and decreased when they viewed it as being less important. For the impact of teachers' professional development on student learning – *marking or scoring sessions* ($r_s = .068$; $p < .01$), the reading achievement level increased when the teacher perceived that the impact this practice had on student learning was more important and decreased when they considered it as being less important.

We found a weak negative yet significant correlation between the allophone students' birth in Canada and the impact of teachers' professional development on student learning – *professional learning communities* ($r_s = -.048$; $p < .05$). The teachers considered that this variable was more important when the allophone student was born outside of Canada than when they were born in Canada.

We noted a weak positive yet significant correlation between born in Canada and the impact of teachers' professional development on student learning – *curriculum development* ($r_s = .052$; $p < .05$). The teachers considered this variable as being more important when the allophone student was born in Canada rather than outside of Canada.

Table 3*Correlations of Three Variables with the Teachers' Perceptions of the Impact of Their Professional Development Activities on Student Learning*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|------------------------------------------------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1. <i>Reading achievement</i> of the Canadian allophone students | - | | | | | | | | | | | | |
| 2. <i>Birth in Canada</i> of the Canadian allophone students | .085** | - | | | | | | | | | | | |
| 3. <i>Gender</i> of the Canadian allophone students | -.097** | 0.035 | - | | | | | | | | | | |
| 4. Impact of PD – <i>university courses</i> | .074** | 0.002 | 0.011 | - | | | | | | | | | |
| 5. Impact of PD – <i>workshops and conferences</i> | 0.009 | 0.026 | 0.003 | .216** | - | | | | | | | | |
| 6. Impact of PD – <i>professional learning communities</i> | -0.024 | -.048* | -0.015 | .151** | .466** | - | | | | | | | |
| 7. Impact of PD – <i>curriculum development</i> | 0.011 | .052* | 0.017 | .210** | .362** | .317** | - | | | | | | |
| 8. Impact of PD – <i>development of assessment items</i> | 0.005 | -0.017 | 0.002 | .148** | .394** | .457** | .488** | - | | | | | |
| 9. Impact of PD – <i>marking or scoring sessions</i> | .068** | 0.002 | 0.002 | -0.010 | .184** | .251** | .316** | .454** | - | | | | |
| 10. Impact of PD – <i>online (e.g., webinars, videos)</i> | -0.002 | 0.038 | 0.034 | .236** | .297** | .272** | .233** | .273** | .206** | - | | | |
| 11. Impact of PD – <i>integration of information technology</i> | 0.025 | -0.044 | 0.005 | .259** | .379** | .306** | .233** | .307** | .076** | .440** | - | | |
| 12. Impact of PD – <i>assessment and evaluation</i> | 0.015 | -0.022 | 0.016 | .176** | .357** | .393** | .329** | .498** | .411** | .175** | .269** | - | |
| 13. Impact of PD – <i>differentiated instruction/resources</i> | -.030 | -0.044 | 0.033 | .244** | .471** | .396** | .264** | .387** | .213** | .296** | .357** | .572** | - |

Note. PD = Professional development.

* $p < .05$; ** $p < .01$

Discussion and Conclusion

We examined the impact of teachers' professional development practices and resources to meet the specific needs of Canadian students whose first language differed from the language of instruction (English or French). Our findings reveal that the impact of teachers' professional activities involving university courses (academic courses) and marking or scoring sessions had a positive effect on the reading performance of Canadian allophone students.

Our results also show that the teachers' professional practice of curriculum development had a greater impact on learning for Canadian allophone students born in Canada than it was for those born outside of Canada. In contrast, professional learning community activities had a greater impact on learning for the students born outside of Canada and less so for those born in Canada. Furthermore, reading achievement decreased for allophone students born outside of Canada and for male students and increased for allophone students born in Canada and for female students.

This study thus demonstrates the positive effects of teachers' professional practices of university courses and marking or scoring sessions on the reading achievement of Canadian allophone students, the significant impact of curriculum development on how well Canadian allophone students learn, and the important influence of professional learning communities on the performance of Canadian allophone students born outside of Canada.

The correlation between performance in reading and professional development activities, such as university courses and marking or scoring sessions, can be explained by their role in helping teachers to better understand the particular challenges associated with the academic success of Canadian allophone students and in enhancing their existing capabilities to interact more effectively and provide vital feedback to meet the needs of this student population (i.e., students whose first language differs from the language of instruction) (Armand et al., 2008; Beacco et al., 2016; Cenoz & Gorter, 2014; Clement & Vandenberghe, 2000; Day, 1999; Hargreaves & Fullan, 1992; Moreira, 1996). Reading achievement was shown in this study to be better among Canadian allophone students born in Canada who experienced an easier integration in school and had earlier access to the language of instruction since their birth in the host country (Armand et al., 2008).

When considering these school characteristics, the teachers' professional development practice of curriculum development had a greater impact on the learning achievement of Canadian allophone students born in Canada, as opposed to those born outside of Canada who had more difficulty integrating in school because they had to learn the language of instruction in addition to the different societal codes of the new country. For this particular group to learn better, the teachers felt that professional learning communities were crucial. In recent years, these practices have proved to be an invaluable support tool and collective professional growth practice to promote the sharing of experiences, best practices, and new ways of doing that alleviate the teachers' lack of experience in intercultural contexts and better address the learning difficulties of allophone students born outside of Canada (Bainski et al., 2010; Moreau et al., 2013; Panagiotopoulou & Rosen, 2018).

Implications and Limitations

The findings of this study show that teacher professional development activities such as pursuing university courses and participating in professional learning communities can help improve the learning and achievement of Canadian allophone students. The observed correlations with this particular student population warrant that teacher trainers, supervisors, and principals not only support but strongly encourage professional development practices such as curriculum development and marking or scoring sessions. Teachers should also welcome collaborative practices and feedback from peers to help improve their teaching practices (Dionne et al., 2013; Lindsey et al., 2009; Mitchell & Sackney, 2011; Oliva & Pawlas, 2001). As for continuing education, it is vital that universities providing teacher training include, encourage, and promote courses, knowledge, and tools that best meet the needs of Canadian allophone students. As for the limitations of this study, because one aspect of our study pertained to reading achievement, we intentionally chose data from the PCAP 2016 in which reading was the main assessment domain. In the PCAP 2019, reading was the secondary assessment domain. Moreover, the teacher survey focuses on the impact of teacher professional development in academic courses and aligns this with university courses. However, it can also be offered by various providers.

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Appendix A
Pan-Canadian Assessment Program 2016 Student Questionnaire

| | |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 1. How do you identify yourself? | 1. Female |
| | 2. Male |
| 3a. Were you born in Canada? | 1. Yes |
| | 2. No |
| 5. What language do you consider to be your first language (the language you first learned and still understand)? | 1. English |
| | 2. French |
| | 3. Aboriginal (e.g., Cree, Inuktitut) |
| | 4. Other (e.g., German, Mandarin) |
| 6. In what language are most of your school subjects taught? | 1. English |
| | 2. French |
| | 3. Aboriginal (e.g., Cree, Inuktitut) |
| | 4. Other (e.g., German, Mandarin) |
| 7. Which language or languages do you use outside the school (e.g., with family, friends, or in the community)? | 1. English only or mostly English |
| | 2. French only or mostly French |
| | 3. English and French equally |
| | 4. English and a language other than French |
| | 5. French and a language other than English |
| | 6. Mostly Aboriginal (e.g., Cree, Inuktitut) |
| | 7. Mostly other (e.g., German, Mandarin) |
| 8. Do you identify yourself as Aboriginal? If YES, with which Aboriginal peoples do you identify yourself? | 1. No |
| | 2. Yes, First Nations |
| | 3. Yes, Inuk (Inuit) |
| | 4. Yes, Métis |

Appendix B
Pan-Canadian Assessment Program 2016 Teacher Questionnaire

2. Including this year, how many years of teaching experience do you have?

1. Fewer than 5 years

2. 5 to 10 years

3. 11 to 15 years

4. 16 to 20 years

5. More than 20 years

12. Have you participated in any of the following types of professional development activities in the past five years? If YES, to what extent did this impact your students' learning?

a) Academic courses (e.g., university)

1. Not considered at all

b) Workshops or conferences

2. Considered with low importance

c) Professional learning communities

3. Considered with moderate importance

d) Curriculum development

e) Development of common assessment items

4. Considered with high importance

f) Marking or scoring sessions

g) On-line (e.g., webinars, videos)

h) Integration of information technology into English Language Arts

i) Assessment and evaluation

j) Differentiated instruction/resources to adapt to students' interests and needs
