

CANADIAN TEACHERS' PERCEPTIONS OF ONLINE PROFESSIONAL DEVELOPMENT

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ABSTRACT

This study used a survey method to explore the perceptions of online professional development (PD) from a sample of Canadian teachers. Ninety-two practicing teachers completed an anonymous online survey between July and September 2020. Results were analyzed using both quantitative and qualitative methods. Findings highlight Canadian teachers' previous experiences with online PD, their perceptions of different approaches to online PD, and their motivations for participating in online PD. Investing in teacher PD is a critical factor in maintaining quality education in Canada and across the globe. Generating feedback directly from teachers can contribute to PD opportunities that are conducive to teacher learning.

Keywords: *professional development, online professional development, online learning, teacher learning, teachers' perceptions, Canadian teacher learning*

INTRODUCTION

In Canada, the vast majority of teachers (> 90%) engage in various forms of professional development (PD) (Campbell et al., 2017; Froese-Germain, B., 2014). This is not surprising given that teaching is a highly complex professional responsibility and requires continuous learning to support diverse student needs across all subject areas. With the daily demands of the teaching profession, practicing teachers require PD that is accessible, interest-driven, research-informed, and directly connected to their current practice. The internet has become a principal source of PD (Marcià & García, 2016) since teachers can access multiple platforms to engage with professional material and collaborate with teachers globally to gain insight into educational issues (e.g., differentiated instruction) or to answer specific questions about content or pedagogical techniques (Donohoo & Velasco, 2016; Parsons et al., 2019). Access to "just-in-time" learning resources and participation in local and global online networks during or

outside their workday expands the opportunities for teachers' PD (Learning Forward, 2017). The flexibility that online PD affords allows teachers to process information at their own pace, return to online content as needed, and collaborate with other teachers through various networks (Wynants & Dennis, 2018).

Although there is ample research about teacher PD, research examining the extent to which teachers use the internet for their PD is limited (Marcià & García, 2016). This is particularly true in the Canadian context (Beach et al., 2021; Campbell et al., 2017). Therefore, our study used a survey method to explore the perceptions of online PD from a sample of Canadian teachers. We were influenced by a recent article by Parsons et al. (2019) who, in their work, examined U.S. teachers' perceptions of online PD. The authors suggested that their results provide "a good starting place for other researchers to conduct a similar study in different contexts to build a collective research base on teachers' perceptions of online PD" (p. 41). Thus, we decided to build

onto Parsons et al.'s (2019) work by introducing Canadian teachers' voices into the conversation. As such, our research questions are adapted from the questions asked by Parsons et al. (2019):

1. What are Canadian teachers' previous experiences with online PD?
2. What are Canadian teachers' perceptions of different approaches to online PD?
3. What are Canadian teachers' motivations for participating in online PD?

REVIEW OF THE LITERATURE

Teacher Learning

Teachers, like their students, should have access to multiple and varied opportunities to learn new content, gain insights, and apply new understandings (Campbell et al., 2017). *The State of Educators' Professional Learning in Canada* emphasizes that teacher PD is multifaceted and there is not a one-size-fits-all approach to PD in Canada, nor should there be (Campbell et al., 2017). Teachers report engaging in multiple professional learning activities, including formal and informal PD. Formal PD (e.g., a face-to-face workshop) is often guided by a facilitator and usually revolves around a community of teachers who all share a common goal (Jurasaite-Harbison & Rex, 2010). Jurasaite-Harbison and Rex (2010) describe formal learning as prescribed PD that occurs when "educational innovations are introduced to teachers through systems of workshops, presentations, or projects" (p. 267). Informal PD, on the other hand, occurs "in interactions among teachers and their reflections upon their practice, sometimes planned and often happenstance" (Jurasaite-Harbison & Rex, 2010, p. 267). Eraut (2004) identified three levels on which informal learning is based: deliberative learning (projected learning), reactive learning (spontaneous, in which the level of intentionality varies according to situation and context), and implicit learning (in which there is no intention and awareness to learn).

Whether formal or informal, there is a general agreement about the key features of effective PD: learning opportunities incorporate research-based content; learning is collaborative and job-embedded; and learning is supported, sustained, and self-directed (Campbell et al., 2017; Darling-Hammond & Richardson, 2009). These features have been supported by numerous studies and empirical findings.

For instance, in their study that examined instructional leaders' beliefs about effective PD, Lutrick and Szabo (2012) found that instructional leaders agreed upon five common qualities necessary for effective PD to occur (Lutrick & Szabo, 2012). According to the instructional leaders, PD should be ongoing, collaborative, data-driven in design, interest-driven in design, and interactive (Lutrick & Szabo, 2012). Trust and Prestridge (2021) used course evaluations and survey data to identify five elements that appear to play a role in teachers' professional learning communities: professional goals, meaningful time, confidence, relationships, and space dynamics. These elements influenced their participants' actions during professional learning—how they engaged with their learning in both online and in-person spaces. Additionally, in their mixed-methods study that examined the effects of sustained classroom-embedded teacher professional learning, Bruce et al. (2010) highlighted several key elements of professional learning activities, including sustained professional learning, classroom-embedded support, teacher goal setting, professional experience, and persistence. These elements played a pivotal role in teacher efficacy and student achievement.

Evidence from research in teacher learning over the past 30 years shows that PD can lead to improvements in instructional practices and student learning (e.g., Borko, 2004). As Borko discussed in her seminal 2004 paper:

For teachers, learning occurs in many different aspects of their practice, including their classrooms, their school communities, and professional development courses or workshops. It can occur in a brief hallway conversation with a colleague, or after school when counseling a troubled child. (p. 6)

To understand teacher learning we must study it within multiple contexts, taking into account both the individual teacher-learners and the context in which they are participants.

Online Professional Development

Online professional development provides new opportunities for teachers who can choose particular programs they find personally meaningful (Elliott, 2017). Elliott (2017) reviewed the literature on the history and evolution of PD and how it affected the eventual development of online PD, which they describe as "any Internet-based

form of learning or professional growth process that an educator can engage in” (p. 119). Various types of online PD exist including distance education courses offered by universities, webinars on specific topics of interest offered by local or international organizations, virtual coaching and collaboration, social networks, discussion boards and other communication methods, self-paced online courses (MOOCs—massive open online courses), and resource-sharing websites like Pinterest. These latter types of PD opportunities are usually asynchronous in nature and self-directed by the teacher.

Many studies have examined how PD opportunities in online environments can provide a space for teacher learning and collaboration. For instance, Colwell and Hutchison (2018) considered a Twitter-based professional learning network as a learning space to support preservice teachers in developing their understanding and perceptions of disciplinary literacy. The authors describe this informal online learning space as a type of PD that provides teachers ongoing opportunities to discuss and share resources efficiently and with a network of educators that transcends teachers’ local community (Colwell & Hutchison, 2018). Twitter provides PD opportunities for teachers to gather and share advice, links, relevant resources, and timely news. One of their main findings suggested that there is value in having access to multiple teachers, platforms, and teacher resources. By following other educators on Twitter who share common interests, teachers can find resources, learn about new approaches, and inquire about educational issues in a relatively short time-frame (Colwell & Hutchison, 2018).

Bates et al. (2016) suggested that online PD is a particularly good choice when: 1) a subset of teachers needs specific to PD that is not part of the school/district plan for that year; 2) particular expertise is not available in a school or district but is available online; 3) teachers need access to colleagues with similar interests, but these colleagues are not available at their home schools; 4) teachers’ immediate needs prohibit more powerful professional learning experiences; and 5) online professional development is significantly cheaper or more feasible than in-person development, but the quality is equivalent. These factors point to the main benefits of online PD: that teachers can access relevant information from educators and

experts across geographical contexts at any point in their workday or after school, meaning online PD is not restricted by time or location.

While research in the area of online PD has grown over the past decades, there is still limited research investigating teachers’ perceptions of their online learning experiences (Marcià & García, 2016; Parsons et al., 2019). The online PD that Canadian teachers engage in comes from a range of sources, some based on solid evidence and others on opinion, experience, and incentives, and thus their quality and relevance vary. It is therefore important to the state of the teaching profession to understand teachers’ perceptions of online PD. Understanding Canadian teachers’ perceptions will provide feedback directly from Canadian teachers about their previous experiences with online PD, their opinions of different approaches to online PD, and their motivations for participating in online PD. This feedback is essential for the continued development and refinement of effective PD platforms that are context specific and will be of interest not only to educational stakeholders, but also to website designers and usability researchers. The results will also enrich the international conversation about teachers’ perceptions of online PD and contribute to potential trends across diverse countries. Before we report on the methods we used, we discuss the theoretical perspective that set a foundation for our study.

THEORETICAL PERSPECTIVE: ADULT LEARNING THEORY

This research is framed by adult learning theory (Knowles, 1975; Knowles et al., 2015). According to Knowles et al. (2015), there are six underlying assumptions about adult learners: a) the need to know; b) the learner’s self-concept; c) the role of the learner’s experiences; d) readiness to learn; e) orientation to learning; and f) motivation. We briefly discuss each of these characteristics in relation to teacher learning in online environments.

The Need to Know

Teachers can be considered goal-oriented and often need to know the reason behind their learning. They value the application of theory to practice and often want to determine how new learning material connects to their current practice. As with other adult learners, the need to know is particularly true before undertaking a PD opportunity

(Knowles et al., 2015). When teachers can visualize the practical application of a theory and deem PD as meaningful to their classroom environment and professional goals, they may be more likely to invest their energy and resources in the learning process.

The Learner's Self-Concept

As Knowles et al. (2015) states, “adults have a self-concept of being responsible for their own decisions, for their own lives” (p. 46). Teachers, as with other adult learners, often resist and resent learning situations that feel imposed and mandatory. As opposed to PD opportunities that are directed by a facilitator through a top-down approach, teachers are more likely to engage in their learning process when it is self-directed. Self-directed learners are free from external control and constraint, and they choose educational topics that directly relate to their individual practice and classroom context (Trotter, 2006). Choice in PD activities is important for two reasons: It reinforces the teachers’ status as a professional, and it increases the chances that activities will apply to an individual teacher’s learning needs and professional interests (Brockett & Hiemstra, 1985; Knowles, 1975; Merriam, 2001; Sandholtz, 2002). Teachers who pursue meaningful topics are active participants during the learning process—they independently make choices that relate to their distinct learning pursuits (Cercone, 2008; Knowles, 1975). Self-directed learning is a process in which the learner takes the initiative and responsibility for setting their own learning goals, identifying and addressing gaps in their learning, identifying resources, selecting and carrying out learning strategies, and evaluating their own learning needs (Knowles, 1975; Merriam, 2001).

The Role of the Learner's Experiences

Professional experience is a source of information for teachers and can be very valuable during the process of learning. That is, when teachers create connections between new incoming information and past experiences, the new information is more likely to be retained for future use. Teachers can use their experience to verify the relevance of newly learned material and to envision possible future implications (Cercone, 2008). As Knowles et al. (2015) describe “for many kinds of learning, the richest resources for learning reside in the adult learners themselves” (p. 46). As such, PD should

be designed and delivered with the learner in mind.

Readiness to Learn

Adults become ready to seek out and learn new information when they see its relevance to an aspect of their lives (Knowles et al., 2015). Teachers, specifically, are ready to learn about new material when they see an opportunity to build onto what they already know or see a gap in their knowledge and practice. As teachers construct new ideas from PD resources, they might envision how the new information relates to their classroom and ultimately how it can contribute to meaningful student learning experiences. Initially, teachers might experiment with their newly formed knowledge, often tailoring new information to their unique environment. Teachers are also more likely to commit to new instructional methods on a long-term basis when these methods are successful with their students (Guskey, 2002).

Orientation to Learning

Knowles et al. (2015) suggest that adults’ orientation to learning is a task- or problem centered approach that is situated in real-world contexts and situations. Teachers are motivated to learn when they perceive learning opportunities as useful to their daily teaching practice and helpful in performing a task or dealing with a problem. For instance, a teacher might seek out information related to a particular educational issue (e.g., differentiated instruction) or to answer specific questions about content or pedagogical techniques.

Motivation

The application of newly acquired knowledge is more likely to occur when teachers are intrinsically motivated—when engagement in learning is inherent without the mediating effects of external rewards (Gorozidis & Papaioannour, 2014). That is, an internal drive to learn and willingness to engage in PD activities increases when the demands of external factors (e.g., mandatory workshops) are absent. In addition, engagement increases when the material is relevant and personally meaningful to the learner (Chametzky, 2014).

Taken together, these assumptions about the adult learner are relevant to teacher PD, both online and in person. Teachers may be more willing to engage in PD opportunities that they perceive as meaningful; they may be more likely to gain greater subject knowledge and transform their

instructional practices when PD fosters self-directedness, connects to their experiences, and is easily and immediately transferrable. In addition, when online PD is internally driven, positive outcomes in teacher learning and in the application of theory to practice are more likely to occur.

METHODS

Research Design

We used a survey method to address the research questions. This method was deemed most appropriate because our main goal was to capture the perspectives of online PD from a sample of Canadian teachers. We also wanted to ensure that our study design aligned with Parsons et al. (2019), who established construct validity through several phases of survey development including cognitive interviews, teacher feedback, and ongoing discussions about the

Table 1. Demographic Information (N=92)

		n (%)
Current Teaching Assignment	Kindergarten	7 (7.6)
	Primary	27 (29.3)
	Junior	13 (14.2)
	Intermediate	9 (9.8)
	Senior	16 (17.4)
	Multiple levels	20 (21.7)
Year of Teaching Experience	Less than 1 year	11 (12.0)
	2–3 years	37 (40.2)
	4–5 years	12 (13.0)
	6–10 years	11 (12.0)
	11 or more years	21 (22.8)
Current Teaching Subjects	All subjects	50 (54.3)
	English	6 (6.5)
	Mathematics	3 (3.3)
	Science	2 (2.2)
	Social Studies	3 (3.3)
	French	3 (3.3)
	The Arts	6 (6.5)
	Special Education	6 (6.5)
	Two of the above subjects	13 (14.1)

survey items among the research teams. Thus, as we discuss below, the survey we used was adapted with permission from Parsons et al. (2019).

Survey Distribution and Participants

Multiple forms of social media platforms were used to disseminate the survey. These included our public Facebook and Twitter feeds, as well as private educational Facebook groups. We received permission to post the survey information from the private group administrators prior to distribution within these platforms. We acknowledge that our survey distribution was limited to social media; however, the timing of distribution (July–September 2020) was impacted by COVID-19 and we were therefore unable to use school boards to help us with dissemination. In total, 92 practicing teachers completed the survey between July and September, 2020. All participants provided informed consent prior to beginning the survey. The majority of participants were practicing teachers in Ontario (84%). Additionally, the majority of participants taught at the primary level (29%), had 2–3 years of teaching experience (40%), and indicated that they taught all of the subject areas (54%). Tables 1 and 2 present more detailed information about the survey participants.

Table 2. Geographic Information (N=92)

Location	n (%)
Ontario	77 (83.7)
Alberta	4 (4.3)
British Columbia	2 (2.2)
Saskatchewan	1 (1.1)
New Brunswick	1 (1.1)
Nova Scotia	1 (1.1)
Quebec	1 (1.1)
Did not indicate	5 (5.4)
Total	92 (100)

Data Source

The survey we used was based on a survey distributed in the United States by Parsons et al. (2019). The authors of the Parsons et al. (2019) study permitted us to adapt the survey to the Canadian context. The survey was anonymous and hosted on the survey platform, Qualtrics. The survey included a total of 35 items: four demographic items, 27

closed-ended items, and four open-ended items. Examples of the closed-ended items included Likert scale items (e.g., To what extent was the online professional development beneficial to you?; On a scale of 1–5, how important is it to have the following benefits when you participate in online professional development?) as well as multiple-choice items (e.g., What is the primary reason you participated in the professional development in an online format rather than face-to-face format?; What, if anything, primarily prevented you from applying what you learned from the online PD to your classroom instruction?) and ranking items (e.g., How likely would you be to engage in an online video lesson study?). An example of an open-ended item is: Please describe any other ideas you have for conducting or participating in online or technology-enhanced professional learning. We also asked an additional question pertaining to COVID-19: Have any of your survey responses been influenced by the current COVID-19 pandemic? If so, please explain.

Data Analysis

All closed-ended survey responses were analyzed descriptively, with a focus on percentages, frequencies, mean values, and standard deviations. Several of the descriptive results are presented in tables to provide a detailed view of the participant responses. Given the timing of our survey distribution, we decided to analyze the open-ended item pertaining to the impact of COVID-19 on participants' responses. These responses were analyzed using an inductive approach to qualitative analysis (Creswell & Plano Clark, 2007). More specifically, all written responses related to this survey item were compiled, read through reflectively noting any immediate insights related to the topic, then coded using an open-coding technique. The last stage of this qualitative analysis involved grouping the most salient codes into themes related to the third research question (What are Canadian teachers' motivations for participating in online PD?). As a result of this qualitative analysis, we identified three main themes: out of necessity, requiring new resources for remote teaching, and opportunities to create new connections. These themes are discussed in detail in the Results and Discussion sections.

RESULTS

Given the nature of our study, we present our results corresponding to the research questions. We

highlight results that are central to understanding Canadian teachers' perceptions of online PD and provide detailed tables that present the full array of survey item responses. Following the results, we discuss our findings in relation to the research literature and adult learning theory.

What are Canadian Teachers' Previous Experiences with Online PD?

A total of 75 participants (81.5%) indicated that they had previously participated in online PD. The majority of participants (75.7%) also indicated that they had participated in informal online PD (e.g., Facebook group, Twitter meet-up). Participants reported on the delivery of their PD, with course management systems (22.4%) (e.g., Blackboard) and self-paced learning (22.4%) as the two modes of delivery most often reported. Topics covered during online PD were vast and included special education, guided reading, Indigenous education, inquiry in the classroom, assistive technology, and various additional qualification courses, which provide certified teachers with additional skills.

What are Canadian Teachers' Perceptions of Different Approaches to Online PD?

Most participants who participated in online PD (85.4%) perceived the PD they experienced as beneficial. Additionally, most participants (65.2%) reported that they were able to apply what they learned during their online PD in their teaching. Specific benefits to online PD were also reported. For instance, 73.9% were able to access materials anytime, 64.1% felt that they could connect with people outside of their immediate geographical area, and 57.6% of participants felt that they could go at their own pace. Table 3 presents a full list of benefits to participating in online PD.

In terms of informal PD, the results were similar in that the majority of participants (82.3%) indicated that this form of PD was also beneficial and they were able to apply their informal PD learning to their practice (62%).

What are Canadian Teachers' Motivations for Participating in Online PD?

Most participants (32.6%) indicated that the primary reason for participating in online PD over other forms of PD was because it was more convenient. Participants also reported that the online PD they participated in was mandatory (23.9%) and there were no face-to-face options (20.7%).

Table 3. Benefits to Participating in Online PD

Benefit	n (%)
I could access materials anytime.	68 (73.9)
I was able to connect with people outside of my immediate geographic area.	59 (64.1)
It gave me the opportunity to reflect on my teaching and discuss it with educators.	59 (64.1)
I could go at my own pace.	53 (57.6)
It provided real-time solutions to problems in my classroom.	41 (44.6)
It provided support for needs in my classroom.	41 (44.6)
It gave me access to resources not available in my local area.	33 (35.9)

Additionally, 22.8% of respondents reported other reasons for participating in online PD. These included: The local university did not offer all the courses I wanted to take; living abroad at the time; go at my own pace; geographically, it made attending feasible, with a family travel time is an issue; and due to COVID-19. See Table 4 for the list of reasons for participating in online PD.

Table 4. Primary Reason for Participating in Online PD

Reason	n (%)
Convenient	30 (32.6)
Mandatory	22 (23.9)
Other	21 (22.8)
No option to participate face-to-face	19 (20.7)
Total	92 (100)

In terms of not participating in online PD, 36.2% of participants said that they preferred face-to-face PD. Additionally, 31% of participants reported that they were not aware of online PD. Only three participants (5.2%) reported that online PD would not be useful. Table 5 presents a full list of reasons for not participating in online PD.

Table 5. Reasons for Not Participating in Online PD

Reason	n (%)
Prefer face-to-face	21 (22.8)
Not aware	18 (19.5)
Too expensive	9 (9.8)
No credit from school	7 (7.6)
Not useful	3 (3.3)
Did not respond	34 (37.0)
Total	92 (100)

The final section of the survey asked participants how likely they were to engage in particular forms of online PD. The most popular activities were online communities of practice, video libraries of teachers modelling exemplary instruction, and access to instructional videos of teachers working with students who have a variety of needs. The least popular activities were gamified PD and real-time feedback. Table 6 presents the full list of the online activities.

Table 6. Online PD Activities

Activity	M	SD
Online community of practice with a small group who are all interested in a particular topic	7.64	2.13
A video library of teachers modelling exemplary instruction	7.34	2.69
Student profiles including instructional videos of teachers working with students who have a variety of needs	7.28	2.57
Student perspectives including access to videos of students sharing their thoughts of how they engage with their academic experiences	7.21	2.30
Book club where you would discuss a selected book with a small group	7.03	2.82
Online video lesson study that allows you to upload videos and reflect on videos	5.92	2.63
An expert teacher app that allows you to ask a question of an educational expert	5.63	3.13
Challenges where you complete a series of challenges related to your professional goals	5.13	2.78
Virtual reality where you would learn about a particular strategy in a virtual classroom	4.31	2.54
Badges for participating in various online PD activities	4.21	3.07

Scavenger hunt where you would locate and share resources in a particular area	3.96	2.99
Gamified PD that utilizes aspects of games including levels, teams, rankings, etc.	3.89	2.76
Real-time feedback where you receive feedback from an expert while teaching	3.70	2.53

*Note: 10=very likely to 1=very unlikely

As previously mentioned, we also asked participants to indicate whether any of their responses were impacted by COVID-19. The majority (56.9%) indicated that they were not impacted by COVID-19 when considering their participation in online PD. For those who indicated that they were impacted by COVID-19, several explanations were given. Given the percentage of participants who indicated that their responses were impacted by COVID-19 (43.1%), these explanations were analyzed qualitatively and categorized into three main themes: out of necessity, requiring new resources for remote teaching, and opportunities to create new connections. These themes are described briefly below. Sample participant quotes are included to support each theme.

Out of Necessity

Several participants referred to the necessity of moving to online learning platforms as a result of lockdowns and closures. One participant, for instance, stated: “the informal PD I participated in occurred in response to distance learning. They would have been in person otherwise.” Similarly, a participant described how “Microsoft for education came in response to using the platform for emergency online learning and I was looking to learn how to better integrate the tools provided into my teaching in the classroom, or if need be, online again.” Another participant discussed how their experience of being forced to move online was related to their positive views of online PD:

Due to COVID-19 I was forced to teach 100% remote learning and had to look for resources that were offered online. However, I often prefer to participate in PD online because I can select what I need. I had to search other teachers’ blogs/twitter to get some ideas and to see what other apps/platforms I could use to enhance the remote learning experience for my students.

Requiring New Resources for Remote Teaching

Participant responses also referred to the need to seek out new information related to remote teaching. Online teaching, in particular synchronous online teaching, appeared to be a new mode of teaching for the majority of teachers. As a result of this emergency switch in the middle of the school year, teachers required resources and material that were more conducive to online learning. One participant described how the move to online teaching motivated them to pursue PD:

I did much more PD than I would have without the pandemic. I needed new tools and I needed to ensure I was using all my time during distance learning so I wasn’t at a loss. It gave me a feeling of accomplishment plus helped with new learning.

Similarly, another participant stated that “due to COVID-19 most teachers have had to rely on remote and electronic resources to support their program, inform them and guide their lessons effectively as well as virtually.”

Opportunities to Create New Connections

Some of the participants discussed that while the move to online teaching and learning due to COVID-19 was stressful and demanding, opportunities became available to create new connections with other educators and discover new resources. Additionally, “more informal online PD was offered during the pandemic” making online PD more accessible than ever. One participant noted: “Everything is so much more online, it has made me think much more about the global teaching community rather than my local school.” Similarly, a participant highlighted how “there are ways to collaborate and get new ideas from people all over the world online.” Another participant discussed their exposure to new technologies: “I have been exposed to more technology than ever before and have seen the benefits and drawbacks.” Finally, a participant stated how the switch to online teaching and learning further emphasized how “this pandemic has made it very evident how flexible we need to be in this profession—always learning and always changing.”

DISCUSSION

While this study includes only a sample of Canadian teachers, it appears that online PD is

indeed being accessed by practicing Canadian teachers. Our results suggest that the teachers in this study find both formal and informal online PD beneficial for a variety of reasons. Moreover, our survey results begin to answer important questions about Canadian teachers' online learning experiences, specifically teachers' previous experiences with online PD, their perceptions of different approaches to online PD, and their motivations for participating in online PD. Below we discuss these questions and our findings in relation to the relevant literature and theory on adult learning. We also discuss the key similarities and differences between the Canadian teachers who participated in our study and the U.S. teachers from Parsons et al.'s study (2019).

Experiences and Perceptions of Online PD

The participants in this study indicated that they access a variety of types of online PD, both formal and informal, and that these forms of online PD are beneficial. The main benefits reported by participants were related to the accessibility of information, connections to teachers and educators across geographical locations, and the ability to move at their own pace. This finding highlights Campbell et al.'s (2017) recommendation that teachers need to have access to multiple and varied learning opportunities. This is particularly true given the range of PD topics reported by participants, including special education, guided reading, Indigenous education, inquiry in the classroom, assistive technology, and various additional qualification courses. While we did not ask participants to provide a reason why they selected these topics, it is possible these topics were selected based on teaching new subjects, advancing teaching qualifications, updating skills in response to new technologies and resources, and also as a response to Canada's Truth and Reconciliation: 94 Calls to Action, which includes the call for all public servants to be educated on the history of Indigenous peoples, including the history and legacy of residential schools (Truth and Reconciliation Commission of Canada, 2015).

While there are some similarities in content between the Canadian and U.S. teachers (Parsons et al., 2019), including technology and special education, there are indeed differences that highlight the diversity across our two countries. Campbell et al. (2017) examined the state of educators'

professional learning in Canada, and while the report did not focus specifically on online learning, the authors stressed the need to continue to "appreciate and respect the rich mosaic of educational experiences and the diversity of approaches and outcomes from professional learning within and across provinces and territories" (p. 67). Each of the 13 jurisdictions in Canada (10 provinces and three territories) is unique in its educational policies, organization, and curriculum design and delivery. Decisions are independently made by the ministries of education within each province and territory, in part to respect the interests of the different populations across regions (Robson, 2019). Given that our study found diverse topics of interest, there is a need for PD administrators and policy makers to continue to develop content that is relevant to the current professional interests of Canadian teachers. An array of PD topics are available in online formats; however, they are not always specific to the Canadian context and to the needs of the Canadian teacher (Beach et al., 2021). Furthermore, the Canadian online resources and PD opportunities that are available are not always known by Canadian teachers (Beach et al., 2020). Canadian administrators and policy makers must continue to invest in and promote online PD that targets Canada broadly, and each jurisdiction more specifically. We would also like to reiterate that our sample of Canadian teachers were mainly Ontarians. As such, our results are likely specific to teachers from this province. We highlight this in our limitations section and note the need for a future survey study that reflects a more representative sample of Canadian teachers across the 13 provinces and territories.

The main benefits reported by participants seem to align with findings from previous studies examining the effectiveness of teachers' PD in general. As discussed above, previous empirical studies recommend that PD should be collaborative and interactive, as well as interest and goal-driven (Darling-Hammond & Richardson, 2009; Lutrick & Szabo, 2012; Trust & Prestridge, 2021). The teachers in our study reported how their online PD provides opportunities to gain new information they might not otherwise be able to access. Additionally, online PD provided the teachers in our study with opportunities to create new connections with other teachers and educators across

geographical locations. This collaboration can be viewed as a fundamental feature of ongoing, rich, and timely discussions about teaching methods and resources (Colwell & Hutchison, 2018). Access to a wide-reaching network of educators has the potential for new insights and differing perspectives (Trust & Prestridge, 2021).

Finally, one of the main benefits of online PD reported by the teachers in our study is the ability to move at one's own pace. Self-directed learning is central to adult learning theory (Knowles et al., 2015) and was clearly viewed by the teachers in our study as an important element of learning. Online PD provides ample opportunities for teachers to take initiative and responsibility for their learning; it provides teachers the convenience to select and seek out information directly related to their current teaching practice. Indeed, online PD fosters self-directed learning leading to possibilities of continued knowledge growth and motivation to learn (Knowles, 1975; Merriam, 2001).

It is also possible that moving at one's own pace was one of the main benefits reported by participants because of the impact COVID-19 had on teaching and learning when we disseminated the survey. As the results related to the COVID-19 survey question indicate, participants felt that they needed to access online resources in their own time. Because of the pandemic, participants also found opportunities to create new connections online. These new experiences and global connections appeared to be positive, suggesting that self-directed online learning could become part of these participants' ongoing PD.

Interestingly, our findings related to informal online PD (e.g., social networking sites like Facebook and Twitter) differ quite significantly from Parsons et al.'s (2019) results. Only 5.4% of the participants in their study mentioned participating in informal online PD, whereas 75.7% of the Canadian teacher participants indicated that they had previously participated in informal online PD. There are a couple of possible reasons for this discrepancy. First, the sample of Canadian teachers who completed the survey could have been biased towards informal online PD. There is no way of confirming this, but those who responded to the survey announcement most likely viewed the post on social media (unless it was passed along by word-of-mouth). It is possible that participants

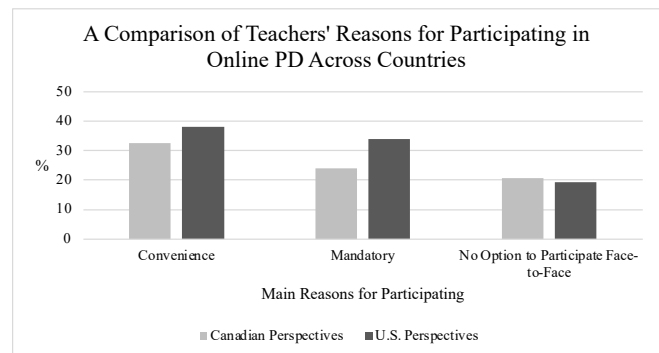
may have already been using social media for their professional learning when they came across the survey information.

Second, the timing of our survey was in the middle of the COVID-19 pandemic. Many participants stated that their survey responses were impacted by the pandemic and when schools closed, they independently sought out information online. The global pandemic significantly increased the use of online resources and platforms across public sectors and organizations (De' et al., 2020); thus, it is possible that the teachers in our study were already seeking out information and PD through informal means. These two reasons are only speculations, and it is quite possible that as a result of COVID-19, teachers' newly formed habit of accessing PD online might become part of their ongoing professional learning. Moreover, the majority of participants indicated that their responses were not impacted by COVID-19. As such, the difference between the use of informal PD by Canadian and U.S. teachers should be further investigated in future studies.

Motivations for Participating in Online PD

In terms of teachers' motivations for participating in online PD, participants indicated how online PD is convenient, feasible, and accessible regardless of geographical location. Some participants also indicated that their motivation was driven by a mandate, perhaps from a school board or administrator. These findings directly align with Parsons et al.'s (2019) findings related to teachers' motivations. In fact, the percentages in both studies are quite similar (see Figure 1).

Fig. 1. A Comparison of Teachers' Reasons for Participating in Online PD across Countries



Participants also indicated that they were motivated to participate in online PD because there were no face-to-face options. While these results are similar for both the teachers in our study and those in Parsons et al. (2019), one valid reason that the Canadian teachers did not have face-to-face options was in part due to the timing of the survey distribution occurring in the midst of COVID-19. As previously stated, many participants referred to the necessity of moving to online learning platforms as a result of lockdowns and closures. As many individuals experienced, events and activities were forced to move online.

In terms of teachers' reasons for not participating in online PD, several participants who responded to this survey item indicated that they preferred face-to-face PD (22.8%). This response only slightly differed from Parsons et al. (2019), who indicated that 27.6% of their U.S. participants preferred face-to-face PD. Similar findings between Canadian and U.S. teachers also related to online PD being too expensive. Where the two studies greatly differed was that 63.8% of U.S. teachers indicated that they were not aware of any online PD offerings, whereas only 19.5% of Canadian teachers indicated that this was true. A possibility for this discrepancy is again related to COVID-19 and the likelihood that as teachers were seeking out more information online, they were also seeing more available opportunities. This question could be further investigated in a future study that targets both Canadian and U.S. teachers. If Canadian teachers are indeed aware of more online PD offerings, questions related to why this is true could lead to more effective approaches to PD dissemination across countries.

Finally, we found that the participants in our study were more likely to engage in certain forms of online PD over others, if provided the opportunity. The most popular forms included online communities of practice, video libraries of teachers modelling exemplary practice, instructional videos of teacher-student interactions, and access to videos of students sharing their thoughts on how they engage with their academic experiences. Interestingly, all of these potential PD opportunities were also deemed the most popular in Parsons et al.'s (2019) study. The same is true for the least popular forms of online PD, with gamified PD and real-time feedback from an expert while teaching

rated as low for both Canadian and U.S. teachers (Parsons et al., 2019).

It is worth noting that the more popular forms of online PD in which teachers would engage all include some aspect of interaction, either with other community members or videos of real educators and students sharing practices and strategies. This relates to how adults orient their learning, according to Knowles et al. (2015), and where learning and knowledge growth are likely to occur when the learning is situated in real-world contexts and situations. Teachers are motivated to learn when they hear about or observe successful learning opportunities (Guskey, 2002; Knowles et al., 2015). Viewing a video of a teacher successfully engaging with students, for instance, might contribute to increases in confidence where a teacher might think, "if they can do it, I can do it too." Parsons et al. (2019) also noted that the most popular forms of online PD do not involve receiving feedback about their instruction. Similar to the U.S. teacher participants, the Canadian participants may have been less likely to select a form of online PD that involves feedback because it can be viewed as evaluative, leading to feelings of stress and the possibility of reducing expectations for success (Parsons et al., 2019). These internal factors would likely reduce motivation to engage in this type of activity (Parsons et al., 2019).

Overall, our study presents new insights into Canadian teachers' experiences and perceptions of online PD, as well as their motivations for participating in online PD. Based on our results, online PD is perceived as a positive learning space where relevant material can be accessed any time and interactions can occur beyond one's geographical location. Online PD fosters self-directed learning and aligns with expectations for effective PD. We also describe the uniqueness of Canadian teachers' perspectives of online PD, when compared with U.S. teachers, and discuss the many similarities across the Canadian and U.S. contexts. Comparing our Canadian study results with the findings from Parsons et al.'s study (2019) is significant because it shows not only the uniqueness of each context—teachers' needs and interests—but also the potential collaborations that can occur between different contexts and countries. By collaborating with researchers across countries, the possibilities for new online PD opportunities, additional teacher

supports and dissemination of resources, as well as learning about potential approaches to making online platforms most conducive to teacher learning, can be shared. Additionally, continuing the conversation with researchers from other countries and continuing to bring in new voices can lead to a more comprehensive model of teachers' online PD experiences.

Study Limitations

Our study has two main limitations that should be taken into consideration when interpreting the results. First, our sample size represents only a small proportion of Canadian teachers. While we had hoped for a larger sample size, our survey was only distributed through social media as a result of COVID-19. Moreover, the majority of our participants were limited to Ontario. This was likely due to the fact that we are researchers in Ontario and our most direct contacts for survey dissemination were Ontarians. A future survey examining teachers' perceptions of online PD should aim to reach a more representative sample of Canadian teachers across the 13 jurisdictions. Second, as with most surveys, our findings are based solely on self-reported data. It is possible that the teachers in our study were limited by their recollection of past events and affected by social desirability of responses. Future research examining teachers' perceptions of online PD should continue to use a diverse range of methods to capture all aspects of teacher learning in online environments, including the impact of their online PD on their pedagogical and content knowledge and whether online PD can positively impact student achievement.

CONCLUSION

Online PD enables teachers to enrich their current curriculum content and pedagogical techniques, and it can have a powerful effect on their practice and, ultimately, on student learning. Based on our study findings, we feel that there are two main implications on how to improve online PD opportunities in Canada. First, it is imperative that website creators and online learning administrators continue to consider the professional needs of teachers according to their individual teaching context—based on geographical location, teaching topics, and grade levels. We know that online learning platforms vary in terms of content and source credibility. Since teachers in our study indicated

their interest in self-directed online learning and reported that they are independently accessing online resources on a regular basis, online platforms targeted towards the Canadian teacher need to continue to be created and, perhaps even more importantly, thoughtfully disseminated through staff activities and board-wide events. Second, improvements can be made to how school boards continue to approach PD in general. For instance, during professional activity days in which teachers are provided PD through various means, self-directed online PD should continue to be included as an option for teachers. When teachers have choice in the learning activity their motivation increases to seek out information to improve teaching and learning. This can have a positive impact on teachers' beliefs and practices, and, ultimately, on student learning.

As we continue the conversation about teachers' perceptions of and experiences with online PD across contexts, we will capture more awareness about the value of online PD for practicing teachers, and how this mode of professional learning does in fact impact teacher practice. Investing in teacher PD is a critical factor in maintaining quality education, and direct feedback from teachers about their perceptions of online PD can contribute to making online platforms and opportunities more conducive to teacher learning.

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