

Touro Scholar

College of Education & Health Sciences (TUC) Publications and Research

College of Education & Health Sciences

2017

Working Conditions for K-12 Distance & Online Learning Teachers in Canada

Michael K. Barbour Touro University California, michael.barbour@tu.edu

Follow this and additional works at: https://touroscholar.touro.edu/cehs_pubs

Part of the Online and Distance Education Commons

Recommended Citation

Barbour, M. K. (2017). Working conditions for K-12 distance & online learning teachers in Canada. Cobble Hill, British Columbia: Canadian eLearning Network.

This Article is brought to you for free and open access by the College of Education & Health Sciences at Touro Scholar. It has been accepted for inclusion in College of Education & Health Sciences (TUC) Publications and Research by an authorized administrator of Touro Scholar. For more information, please contact Timothy J Valente timothy.valente@touro.edu.



Working Conditions for K-12 Distance & Online Learning Teachers in Canada

September 2017

A special report of the State of the Nation: K-12 E-Learning in Canada project.

Michael K. Barbour Touro University, California The image on the front cover was selected through a Creative Commons search of *Google Images* for "online teacher." This particular image was from the Office of Educational Technology in the US Department of Education.

Thanks to Randy LaBonte, Chief Executive Officer of the Canadian eLearning Network, for feedback on various drafts of this report.

Working Conditions for K-12 Distance and Online Learning Teachers in Canada

Executive Summary

"Teacher unions in Canada have had concerns about developments in online learning, but have generally been supportive if they have felt conditions were appropriate," according to the Director of Research and Technology at the British Columbia Teachers' Federation (BCTF). This sentiment has been echoed by the researchers involved in the annual *State of the Nation: K-12 E-Learning in Canada*. These researchers have also underscored the fact that teacher unions have also been active in conducting research to investigate how teaching in the distance education and online learning environment is different than teaching in the classroom, and what impact that has on the nature of work and quality of work life for its members. The present study is an example of this exploration.

This report describes a study conducted to explore written provisions for the working conditions of K-12 distributed learning teachers in Canada (i.e., distance education and online learning are generally referred to as distributed learning throughout the report). At present, there is one provincial jurisdiction that includes language in their collective agreement with teachers related to distributed learning. There are also two provinces where there is language in one or more local contracts focused on distributed learning. Finally, there was one province where the provincial teacher union had a significant policy related to distributed learning.

Within these documents, there were consistent themes around 1) defining distributed learning; 2) clauses focused on teacher working conditions in the distributed learning environment; 3) responsibilities for the schools and/or school boards that choose to operate distributed learning programs; and 4) mechanisms to allow for consultations between those operating the distributed learning program and the union. In all of these themes, there are actually few regulations that go beyond what would be expected for traditional brick-and-mortar education. The main areas where distributed learning teachers were treated differently than face-to-face teachers were for legal reasons, as well as the provision for consultations between distributed learning operators and their respective unions. These unique aspects are reflective of stakeholders' efforts to examine what constitutes the equivalent experiences for teaching in the distributed learning environment relative to traditional classroom teaching.

Introduction

The use of K-12 distance and online learning in Canada has grown significantly over the past two decades. The first estimates suggested that there were approximately 25,000 K-12 students learning at a distance in Canada (Canadian Teachers Federation, 2000). During the 2015-16 school year, Barbour and LaBonte (2016) conservatively estimated that there were approximately 300,000 K-12 students engaged in distance or online learning. Since the *State of the Nation: K-12 E-Learning in Canada* research project was first introduced following the 2008-09 school year, British Columbia has consistently led the country in either the actual number or the proportion of students engaged in K-12 distance and online learning – often both.

On a blog entry posted on August 15, 2013, the Director of Research and Technology at the British Columbia Teachers' Federation (BCTF) wrote that "teacher unions in Canada have had concerns about developments in online learning, but have generally been supportive if they have felt conditions were appropriate" (Kuehn, 2013, \P 1). The appropriate conditions, according to the BCTF, were outlined in a policy – 51.11 Distributed Learning – that the organization had adopted in 2001 (see Appendix A for a copy of this policy). Among other things, those conditions included: adequate staffing, funding and resources; teachers should have input on policies adopted by the school district; and programs should be delivered under the provision of the collective agreement. However, over a decade and a half later few jurisdictions have actually codified any provisions related to K-12 distance or online learning in their collective agreements. This study was conducted to explore written provisions for the working conditions of K-12 distance and online learning teachers in Canada.

At the time the research was conducted, the Government of British Columbia had limits on class size for face-to-face courses. However, there were no limits on the size of classes in distributed learning (i.e., the terms used for K-12 distance or online learning in British Columbia). The BCTF was concerned that schools may begin assigning students to the distributed learning classes when the class size limit was reached in the face-to-face course. This action, if it were occurring, would significantly increase the workload of distributed learning teachers – and formed much of the rationale for undertaking this study.

This report begins with a brief examination of the literature related to teaching in an online or distributed learning environment, with a specific focus on the concerns raised by labour organizations. It continues with an overview of the methodology and data collection processes used to generate the data for this report. The bulk of this report is focused on themes in the collective agreement language and specific policies provided by teachers' unions in Nova Scotia, Ontario, Saskatchewan, and Alberta. It should be noted that distance education is referred to by a variety of terms across Canada (e.g., distance education/learning, online education/learning, distributed learning, e-learning, etc.) – often depending in the particular jurisdiction. Throughout this report, the terms distance education, online learning, distributed learning and e-learning are used synonymously and interchangeably.

Literature Review

It has long been accepted that teaching in a distance (i.e., online), or distributed learning, environment is different or requires different skills than teaching in a face-to-face context (DiPietro, 2010; DiPietro, Ferdig, Black, & Preston, 2008; Harms, Niederhauser, Davis, Roblyer, & Gilbert, 2006; Kearsley & Blomeyer, 2004; Rice, 2011; Smith, 2009). In fact, the different roles for teachers that exist within the distributed learning environment have been formally delineated in three, generally accepted roles (although others have proposed a more diffuse structure [Ferdig, Cavanaugh, DiPietro, Black, & Dawson, 2009]).

- 1. Virtual School Designer Design instructional materials. Works in team with teachers and a virtual school to construct the online course, etc.
- 2. Virtual School Teacher Presents activities, manages pacing, rigor, etc. Interacts with students and their facilitators. Undertakes assessment, grading, etc.
- 3. Virtual School Site Facilitator Local mentor and advocate for students(s). Proctors & records grades, etc. (Davis, 2007).

Barbour and Adelstein (2013) described the research that was available at the time related to these three teacher roles. Of these three virtual schooling roles that a teacher may undertake, the researchers indicated that the one with the least amount of literature was the Virtual School Designer. Alternatively, the Virtual School Teacher was the role that had seen the greatest amount of research – examining both asynchronous and synchronous forms of teaching. Finally, the researchers indicated that there was a limited amount of research into the Virtual School Facilitator – which is also known as a mediating teacher, eDean, learning coach, or mentor; but that literature indicated that the individual physically present with the student while they undertook their online learning played a critical role on students' success.

While the role of the teacher has changed for those engaged in the distributed learning environment relative to the classroom environment, unions throughout Canada have generally been supportive of distributed learning as a learning option for students. Researchers involved in the annual *State of the Nation: K-12 E-Learning in Canada* project have frequently stated that unions in Canada are supportive of distributed learning. However, at the same time unions are also focused on understanding how teaching in this environment is different than teaching in the classroom, and what impact that has on the nature of work and quality of work life for its members (Barbour, 2009, 2010, 2011a, 2012, 2013; Barbour & Stewart, 2008). In fact, Barbour and Adelstein (2013) described, in significant detail, the nature of research that had been conducted by unions (e.g., BCTF and the Alberta Teachers' Association [ATA]) to investigate how the role of the teacher has changed in the distributed learning environment.

These research efforts were not the first efforts by Canadian unions to understand how the role of the teacher was changing due to distributed learning. The Canadian Teachers' Federation (CTF) (2000) produced a series of fact sheets that were designed to describe the current state of distance and/or online education and discuss the various labour issues that this form of education raised. Following a fact sheet focused on defining online education and providing statistics on its level of use, the CTF included fact sheets on the following issues:

- intellectual property rights of the online course content;
- working conditions of teachers in the online environment;
- job security for those engaged in online courses dependent on student enrollment;
- access to training and resources needed to teach online; and
- privacy concerns around the access to electronic facilities.

Interestingly, even at this time the BCTF, ATA, and Saskatchewan Teachers' Federation (STF) all had policies related to distance learning (which were provided as appendices to the fact sheets). Additionally, there was already language in the Nova Scotia Teachers' Union (NSTU) collective agreement – and had been since at least 1997 – related to the delivery of distance education. A year later, the Ontario Secondary School Teachers' Federation (OSSTF) (2001) released a monograph as part of their "Critical Issues Series" focused on e-learning. The document appears to have been used to provide information about e-learning, and the union's concerns about this form of education, in advance of a round of collective bargaining. The issues that they raised included: a lack of research to guide e-learning; intellectual property rights and academic freedom; quality control over curriculum and assessment; the nature of teacher workload; how e-learning was going to be funded; the need for specialized professional development; equity of student access; and the increased potential for commercialization. Almost two decades later, many of these issues raised by the CTF and OSSTF are still relevant in the discussion around distributed learning today.

Methodology

The goal of this study was to explore the mandated working conditions for K-12 distance and online learning teachers across Canada. This general goal led to the following two guiding questions:

- 1. What contract language exists related to working conditions in K-12 distance or online learning environments?
- 2. What formal union policies exist that define working conditions in K-12 distance or online learning environments?

The methodology used for the study was an interpretative, naturalistic inquiry.

Reeves (2000) described interpretive research as being designed to understand a phenomenon by describing and interpreting it; while LeCompte and Preissle (1993) argued that interpretive research was typically focused on explaining a specific situation or context. Further, research with broad and exploratory goals is often associated with naturalistic inquiry. Naturalistic research design "is usually not fully established before the study begins but emerges as data are collected, preliminary analysis is conducted, and the content becomes fully described" (Erlandson, Harris, Skipper, & Allen, 1993, p. 66). Following this guidance, a general but fluid plan for data collection was developed (Reiss & Gable, 2000).

The data collection process primarily involved a survey that was sent to all the teachers' unions in Canada (see Appendix B for a copy of this survey). The survey was also shared as a part of the CTF National Teacher Research Network. In addition to the survey, both the

researcher and a representative from the BCTF contacted union officials directly in instances where either was aware of existing contract language or union policies related to K-12 distance or online learning. The data were analyzed using a thematic analysis (Braun & Clark, 2006), which was designed to "capture something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (p. 82). Braun and Clark recommended a six-stage process that included: 1) becoming familiar with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report.

Results and Discussion

There was only one jurisdiction that had contract language related to K-12 distance or online learning in the provincial agreement between the teachers' union and the respective provincial government: the NSTU. Additionally, there were two unions that had language related to K-12 distance and/or online learning in some local level agreements: the OSSTF, which submitted five examples from local agreements, and the ATA, which submitted a single example. Finally, the STF did have a policy related to "Technology and Education," that included several clauses related to online education.¹ Finally, of these four jurisdictions, the provisions included in the NSTU collective agreement were the most extensive and longstanding. Given this reality, the results were organized around the general themes from that agreement.

Defining Distributed Learning/e-Learning

The second clause of the collective agreement between the Government of Nova Scotia (2017) and the $NCTU^2$ stated that distributed learning is defined as:

a method of instruction that relies primarily on communication between students and teachers through the internet or other electronic-based delivery, teleconferencing, video conferencing or e-correspondence. It allows teachers, students, and content to be located in different, non-centralized locations so that instruction and learning can occur independent of time and place. (p. 56)

While there is some reference to distributed learning/e-learning in local collective agreements in both Ontario and Alberta, the only other instance of defining distributed learning/e-learning is in the STF's (2016) policy on "Technology and Education." In that document, online education is defined as "the delivery of educational materials by a teacher through the use of the Internet or other technologies. This can include distance classes, cyber-schools, exclusively online education and in-classroom online instruction tools" (p. 90).

These definitions included a couple of key features: 1) communication generally occurs through some form of electronic means, and 2) the teacher and student are physically and/or

¹ All of the raw data is presented in Appendix C.

² It is important to note that the first clause in this section specifically stated that, "in order to fully prepare students for the future, all students need to have access to distributed learning opportunities" (Government of Nova Scotia, 2017, p. 56).

temporally separated. It is important to underscore that distance is not solely defined by geography, but can also be a distance of time. For example, Barbour (2011b) described a situation encountered in New Zealand where the teacher:

had begun to use the asynchronous course content he had created for his online courses with his face-to-face students and had also began to teach in a manner consistent with his online teaching (i.e., where he would provide limited direct instruction and used class time to facilitate his students' movement through the activities in the asynchronous course content). One of his social science courses had an enrollment of 15 students, but eight of the students were physically present in the room when he was scheduled to teach the course. The other seven were scheduled for this course at times that fit into their timetable, but while this teacher was scheduled to teach other courses. Under this model, the students who were scheduled for this particular humanities course during period when the teacher was scheduled to teach it came to his classroom and he would introduce the topic, tasks, and/or activities for the day; and then begin to facilitate the students as their progressed through the curriculum. For the seven students who were scheduled to take this course during our periods, they would go to the library or a computer lab. The teacher would have sent the same instruction provided to the face-to-face students electronically. If the students needed assistance from their teacher, they would e-mail him or send him a *Skype* message. In some instances, the teacher would take a few minutes to go to where the student was located or the student might be told to come to the teachers' classroom if the assistance was more involved than could be efficiently communicated in text-based medium. As the teacher structured all of his courses in the same manner, it wasn't as if these students would be interrupting the teacher while they were "teaching" another course. (pp. 22-24)

Many would describe this model as a form of blended learning. However, using the definition of distributed learning from the Nova Scotia collective agreement, in this situation the teacher and student are separated by time, and often by distance (admittedly a relatively short amount of distance). The teacher and student also spend much of their time interacting with each other through electronic means (e.g., the content in the learning management system, e-mail or *Skype*). By strict definition, this situation is an example of distributed learning.

While not included in its collective agreement, the *Schools Act, 2006* in British Columbia defined distributed learning as "a method of instruction that relies primarily on indirect communication between students and teachers, including internet or other electronic-based delivery, teleconferencing or correspondence" and a distributed learning school as "a school or francophone school that offers instruction to its students by means of distributed learning only" (Government of British Columbia, 2006, p. C-13). While not specifically stated in the legislation, it has generally been applied that if a student receives more than 50% of their instruction in a manner consistent with this definition they are considered to be enrolled in a distributed learning course. As such, within British Columbia context, the students enrolled in the in-school online courses described in the situation above would be considered regular students because both the students and their teacher are at the same school. This regular student status would be the case even if the student's sole means of interaction with the teacher were electronically-based.

Teacher Working Conditions

In each of the collective agreements that were examined, clauses related to teacher working conditions were the most common items represented. These clauses had several thematic commonalities (see Table 1).

Table 1. Collective Agreement Clauses Related to Distributed Learning (DL) Teacher Working Conditions

Theme	NS	ON	AB	SK
Requirement that the teacher be certified	Х	Х		
Requirement that DL be considered part of the teacher's formal	Х	Х		х
workload				
Maximum DL class size	Х	Х	Х	
Mandated professional development for DL teachers	Х	Х		х
School day can be different, must be equivalent	Х			
DL teacher workspace assignment		Х	Х	
Formal evaluation structure for DL teachers		Х		
Mandated teacher behaviours		Х		х

Note that, with the exception of two items, all of the themes were represented in multiple sources.

There were three themes that appeared in three of the four jurisdictions. First, the requirement that distributed learning be considered a part of the teacher's formal workload – and not be assigned in addition to a full workload - was included in the NSTU collective agreement, three of the five samples provided by the OSSTF, and the STF policy. Second, collective agreements in Nova Scotia, Ontario, and Alberta have included class size limits for distributed learning courses. In the case of both Nova Scotia and Alberta, the maximum class size is set at a specific limit – 25 students per course and 117 students per full time equivalent respectively. In two of the five samples provided by the OSSTF, there is no limit on the class size of an elearning course; only a statement that e-learning courses must follow the class size limits for face-to-face courses. Interestingly, the STF policy simply advised that, "teachers' workloads must be carefully considered in relation to online education to ensure students' needs are being met and that teacher workloads are reasonable, clearly defined and encourage balance." Third, the NSTU collective agreement, one of the five samples provided by the OSSTF and the STF policy all reference the unique nature of teaching in a distributed learning environment and, as such, require additional and specific professional development. The OSSTF example specifies that the professional development be focused on "the delivery of courses on the e-learning platform," while the NSTU specifies that the school board should be the one to fund such professional development.

The NSTU collective agreement and three of the five samples provided by the OSSTF made specific reference to the fact that all distributed learning/e-learning courses should be taught by a certified teacher. The NSTU collective agreement described this requirement as "certified teachers under contract with a school board;" while the OSSTF samples speak of

"teachers covered by the provisions in Article XIX," "a member of the teacher's bargaining unit," or "secondary day school teacher who is a member of the OSSTF bargaining unit."

Further, four of the five samples provided by the OSSTF and one of the examples provided by the ATA spoke to the nature of distributed learning teacher workspace. All four OSSTF samples referenced that the e-learning teacher "will be assigned a work station [and a] work area in the teacher's secondary school with the necessary resources." Essentially, the teacher must be provided with a location and the necessary technology to teach their e-learning course. The example provided by the ATA was from one local agreement which focused on the fact that safe work environments required a minimum of two teachers. This requirement would have prevented a distributed learning teacher from working from home or another off-site location by themselves.

Interestingly, three of the five samples provided by the OSSTF – as well as the STF "Technology and Education" policy – made reference to specific behaviours that distributed learning teachers must undertake. Some of these behaviours included:

- Classroom teachers delivering E-Learning courses through the LMS shall be solely responsible for the teaching, monitoring, assessment and evaluation of students taking the course.
- A teacher teaching E-Learning courses is assigned by mutual consent and shall correspond with students solely through the LMS and using Board email.
- The teacher will not use their personal email in any aspect of the delivery of the E-Learning program.
- All lesson preparation, teaching, monitoring, evaluation, testing and reporting of marks to the home school of the student for students taking e-learning credit courses will be the responsibility of the teacher assigned to the e-learning course.

Collectively, these OSSTF clauses specify that e-learning teachers must use the learning management system and the school board's official e-mail for the delivery of their courses and their communication, and that the e-learning teachers are solely responsible for the delivery of their courses. Further, the STF policy indicates that, "teachers must be involved in the development and delivery of supports for students at the receiving end of online education." This statement implies that the teacher's role in the distributed learning environment should extend beyond the delivery of the course to include both the design and support of the distributed learning course.

Finally, the three themes that were only represented once were a clause that appeared in three of the five samples provided by the OSSTF and one clause from the NSTU collective agreement.

A teacher teaching e-learning courses will report to school board personnel only and will be evaluated only by the principal or vice-principal and/or supervisory officers employed by the Board. *OSSTF, Samples #3 (clause 4.2), 4 (clause 9), 5 (clause 7)*

49.10 (i) The structure of the school day for a teacher assigned to teach distributed learning, whether synchronous or asynchronous, may be different but equivalent to the length of school day for teachers assigned to teach non-distributed learning courses.

(ii) Any changes to the structure of the school day pursuant to (i) which impacts an individual teacher teaching distributed learning shall not occur without the agreement of the teacher. Should the Employer determine that the structure of the school day is to be different from what was assigned, should the distributed learning teacher decline the change, the Employer may still proceed with the change, in which case local provisions would apply to that teacher. (Government of Nova Scotia, 2017, p. 58)

With respect to the OSSTF clauses, it is important to remember that in Ontario all e-learning courses are offered at the school board level. As such, it is appropriate for the e-learning teacher to report to and be evaluated by a school board officer for that portion of their teaching assignment.

School and School Board Responsibilities

In addition to setting out regulations and guidelines for distributed learning teachers, these documents also outline numerous responsibilities for the schools and/or school boards that choose to operate distributed learning programs. For example, the NSTU collective agreement requires that:

- schools must have student supervision at the local level when students are engaged in distributed learning (48.05),
- schools must have a local distributed learning coordinator (48.06), and
- if the course exists in the student's local school, they must receive approval from the school in order to take the course in a distributed learning environment (48.07).

Three of the five samples provided by the OSSTF also focused on requirements for schools and/or school boards. For example, several of the samples stated the school board was required to appoint a district e-learning coordinator to oversee the implementation of the board's distributed learning plan. The remaining clauses in the OSSTF samples focus on how schools and/or school boards implement their distributed learning programs. Issues such as scheduling, registration, and whether the program is part of the day school or continuing education offerings are specifically referenced.

The final reference to the responsibilities of schools and/or school boards can be found in the STF policy, which reads:

(d) When possible, online education should be based on a decentralized model of delivery that reflects local contexts and supports, rather than replaces rural, remote or northern schools.

(e) Online education may be a viable alternative for student engagement. The referral process must be collaborative, respect student autonomy, meet students' needs and ensure ongoing supports are available.

These two clauses are in a specific section that is prefaced by stating, "exclusively online education is an important and growing sector of the public education system and requires particular attention in the following ways." As such, these clauses are things that systems should pay attention to, but not necessarily be responsible for undertaking.

Formal Consultation Mechanisms

The final aspect present in several of the collective agreements has focused on mechanisms for consultation. One example of this consultation can be found in the final clause of the NSTU collective agreement which calls for the creation of a provincial advisory committee. The clause reads:

49.12 A standing Distributed Learning Committee consisting of two (2) representatives from the Department of Education and Early Childhood Development, two (2) representatives from School Boards and four (4) representatives from the Union shall be established to address issues surrounding the ongoing development of distributed learning. The Committee shall meet at the request of either the Department of Education and Early Childhood Development or Union but in any event not less than twice a year and provide a written report to the parties bound by this Agreement. Without limiting the scope of the Committee, the following are expected topics:

- The application of reasonably equivalent hours of work
- Appropriate time and resources for those teaching distributed learning courses
- Professional development
- Technological change

Interestingly, the union representation of this committee is 50% of the overall committee membership.

Two of the five samples from the OSSTF contain clauses that provide for even more direct consultation with the union. These clauses read:

Sample 3

XX.2.7.2 The Board will consult with the Bargaining Unit prior to offering electronic credits to other regular day school students.

Sample 4

1. The Board agrees to inform the Union prior to implementing the electronic and distance education delivery of secondary school credits in a school.

12. In the event there are changes to the Education Act with respect to Provincial guidelines, funding or protocols, the Board and the Union agree to meet and review how such required changes will be implemented.

In these clauses, the school board has to consult or inform the union if they want to implement a distributed learning program. Further, if the province were to change regulations related to distributed learning the school board is required to consult with the union on how to implement those changes.

Summary

In all of these examples, there are actually few regulations that go beyond what would be expected for traditional brick-and-mortar education. Within any public school system, it is an expectation that teachers are certified and that the courses they teach are considered part of their formal workload. It is expected they undertake continuous professional development, but in some distributed learning programs specific training for teaching online may be required and provided. It is also expected that schools and/or school boards will provide teachers with the resources – including the teaching resources, physical space, and training – they need in order to complete their job. This is no different if teaching in a classroom or distributed learning environment.

In areas where distributed learning teachers are treated differently than face-to-face teachers, the regulations are often completed for legal reasons. For example, the requirement that teachers use the learning management system and their official school e-mails is designed to protect both students and teachers. Similarly, the guidelines related to distributed learning teachers were generally quite vague in nature. For example, suggestions focused on the involvement of teachers in the design, delivery, and support of distributed learning.

In fact, the only areas where distributed learning appears to be treated in unique ways – at least in comparison to brick-and-mortar education – are the various mechanisms that were put in place in Nova Scotia and Ontario to allow for consultations between those operating the distributed learning program and the union. The potential topics outlined in the NSTU collective agreement – reasonably equivalent hours of work, appropriate time and resources, professional development, and technological change – provide some of the rationale for the necessity of these consultation processes. The well defined differences between face-to-face teaching and distributed learning teaching require stakeholders to engage in what Simonson and Schlosser (1995) referred to as the theory of equivalency. The basic premise was that, "the more equivalent the learning experiences of distant students are to that of local students, the more equivalent will be the outcomes of the learning experience" (p. 13). As such, the main question for these consultations are what constitutes the equivalent experiences for teaching in the distributed learning environment to traditional classroom teaching.

References

- Barbour, M. K. (2009). State of the nation: K-12 online learning in Canada. Vienna, VA: International Council for K-12 Online Learning. Retrieved from <u>http://k12sotn.ca/</u>
- Barbour, M. K. (2010). State of the nation: K-12 online learning in Canada. Vienna, VA: International Council for K-12 Online Learning. Retrieved from http://k12sotn.ca/
- Barbour, M. K. (2011a). State of the nation: K-12 online learning in Canada. Vienna, VA: International Council for K-12 Online Learning. Retrieved from <u>http://k12sotn.ca/</u>
- Barbour, M. K. (2011b). Primary and secondary e-learning: Examining the process of achieving maturity. Christchurch, New Zealand: Distance Education Association of New Zealand. Retrieved from <u>http://www.vln.school.nz/file/download/114023</u>
- Barbour, M. K. (2012). State of the nation: K-12 online learning in Canada. Victoria, BC/Vienna, VA: Open School BC/International Council for K-12 Online Learning. Retrieved from <u>http://k12sotn.ca/</u>
- Barbour, M. K. (2013). State of the nation: K-12 online learning in Canada. Victoria, BC: Open School BC. Retrieved from http://kl2sotn.ca/
- Barbour, M. K., & Adelstein, D. (2013). Voracious appetite of online teaching: Examining labour issues related to K-12 online learning. Vancouver, BC: British Columbia Teachers Federation. Retrieved from <u>http://www.bctf.ca/uploadedFiles/Public/Issues/Technology/VoraciousAppetite.pdf</u>
- Barbour, M. K., & LaBonte, R. (2016). *State of the nation study: K-12 e-learning in Canada*. Cobble Hill, BC: Canadian E-Learning Network. Retrieved from <u>http://k12sotn.ca/</u>
- Barbour, M. K., & Stewart, R. (2008). A snapshot state of the nation study: K-12 online learning in Canada. Vienna, VA: North American Council for Online Learning. Retrieved from <u>http://k12sotn.ca/</u>
- British Columbia Teachers Federation. (2001, March). *51.11 Distributed learning*. A policy adopted at the 2001 British Columbia Teachers Federation Annual General Meeting, Victoria, BC.
- Canadian Teachers Federation. (2000). Fact sheets on contractual issues in distance/online education. Ottawa, ON: Author.
- Davis, N. E. (2007, February). *Teacher education goes into virtual schooling*. Paper presented at the FIPSE Comprehensive Conference.
- DiPietro, M. (2010). Virtual school pedagogy: The instructional practices of K-12 virtual school teachers. *Journal of Educational Computing Research*, 42(3), 327–354.

- DiPietro, M., Ferdig, R. E., Black, E. W., & Preston, M. (2008). Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers. *Journal of Interactive Online Learning*, 7(1). Retrieved from <u>http://www.ncolr.org/issues/jiol/v7/n1/best-</u> practices-in-teaching-k-12-online-lessons-learned-from-michigan-virtual-school-teachers
- Erlandson, D. A., Harris, E. L., Skipper, B. & Allen, S.D. (1993). *Doing naturalistic inquiry: A guide to methods*. Newbury Park, CA: Sage Publication Inc.
- Ferdig, R. E., Cavanaugh, C., DiPietro, M., Black, E. W., & Dawson, K. (2009) Virtual schooling standards and best practices for teacher education. *Journal of Technology and Teacher Education*, 17(4), 479-503.
- Government of British Columbia. (2006). *Schools Act, 2006*. Victoria, BC: Author. Retrieved from <u>http://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/revisedstatutescontents.pdf</u>
- Government of Nova Scotia. (2017). Agreement between the Minister of Education and Early Childhood Development of the Province of Nova Scotia and the Nova Scotia Teachers Union. Halifax, NS: Author. Retrieved from <u>https://www.nstu.ca/data/negotiationsprov/TPA-</u> <u>Amended%20by%20Bill%2075%20Final%20Revised.pdf</u>
- Harms, C. M., Niederhauser, D. S., Davis, N. E., Roblyer, M. D. & Gilbert, S. B. (2006). Educating educators for virtual schooling: Communicating roles and responsibilities. *The Electronic Journal of Communication*, 16(1-2). Retrieved from http://www.cios.org/EJCPUBLIC/016/1/01611.HTML
- Kearsley, G., & Blomeyer, R. (2004). Preparing K-12 teachers to teach online. *Educational Technology*, *44*(1), 49-52.
- Kuehn, L. (2013, August 15). Union supports distributed (online) learning--with conditions. *edu-digicritic: Critical analysis of technology in education*. Retrieved from http://digicritic.blogspot.com/2013/08/union-supports-online-learning-with.html
- LeCompte, M. D. & Preissle, J. (1993). *Ethnography and qualitative design in educational research* (2nd ed.). San Diego, CA: Academic Press.
- Ontario Secondary Schools Teachers' Federation. (2001). E-learning: Challenges ahead. *OSSTF Monographs* #23. Toronto, ON: Author.
- Reeves, T. C. (2000). Socially responsible educational technology research. *Educational Technology*, 40(6), 19-28.

- Reis, H. T., & Gable, S. L. (2000). Event-sampling and other methods for studying everyday experience. In H. T. Reis & C. M. Judd, (Eds.), *Handbook of research methods in social* and personality psychology (pp. 190-222). New York: Cambridge University Press.
- Rice, K. (2011). *Making the move to K-12 online teaching: Research-based strategies and practices*. Boston, MA: Pearson
- Saskatchewan Teachers Federation. (2016). Saskatchewan Teachers Federation governance handbook. Saskatoon, SK: Author. Retrieved from <u>https://www.stf.sk.ca/resource/stf-governance-handbook</u>
- Simonson, M., & Schlosser, C. (1995). More than fiber: Distance education in Iowa. *TechTrends*, 40(3), 13-15.
- Smith, R. D. (2009). Virtual voices: Online teachers' perceptions of online teaching standards. *Journal of Technology and Teacher Education*, 17(4), 547-571.

Appendix A

51.11 – Distributed Learning

That BCTF policy on distributed learning be:

1. Distributed learning remains a positive offering within the B.C. public school system when fully supported by adequate staffing, funding and resources within provincial guidelines.

2. Distributed learning should not be used in place of sufficient staffing or adequate facilities.

a. Distributed learning and electronic delivery of public education programs should be delivered under the provision of the collective agreement.
b. Distributed learning programs and courses in B.C. public schools should be equivalent to other programs and courses in curriculum, assessment and reporting.

4. Policies on distributed learning should be adopted by any school district that intends to use distributed learning for any of its students, either in its own district, or in conjunction with another district that runs programs:

a. the teacher local should be involved in the formulation of the policy;

b. the policy should include criteria and processes for making a decision on whether distributed learning is an appropriate placement;

c. the policy should consider the social purposes of education, as well as the educational development of individuals.

5. The school district in which any public school student lives should receive funding for that student. Decisions on requests to place the student in a distributed learning program should be made by the school district according to established criteria and processes. If a school district believes that an out-of-district distributed learning placement is most appropriate, then it should make enrolment and financial arrangements with the other district.

6. Development of learning resources for distributed learning should be directed by the Ministry of Education, and BCTF members, identified through the BCTF process, should be involved in the development of the resources and compensated according to their rate of pay under the collective agreement provisions that apply in their local.

7. Distributed learning programs should not include marketing learning materials, courses and programs outside of B.C.

8. There should be no financial or other incentive for parents or school districts to enrol students in one program over another.

(01 AGM, p. 42-43) Members' Guide to the BCTF 2002-2003 (p. 146)

Appendix B

Working conditions of teachers in distance, online and/or blended learning

The BC Teachers' Federation has been working with Michael Barbour. We are particularly interested in how teacher federations, including locals, have been addressing issues affecting members work in these programs.

We would appreciate having your responses to these questions. We will share the information that we have gathered in a report.

Please send your responses to Larry Kuehn or Michael Barbour. Please contact either of us if you have questions or if you want to talk about the issues involved.

1. (a) Is there language in your contract related to distance, online and/or blended learning?

1. (b) If the answer to 1. (a) is yes, can you indicate the specific provisions within the contract?

2. (a) Has your teacher federation passed any policies or resolutions related to distance, online and/or blended learning?

2. (b) If the answer to 2. (a) is yes, can you indicate or provide a copy of the specific policies or resolutions?

3. (a) Has your teacher federation conducted any research or data collection related to distance, online and/or blended learning?

3. (b) If the answer to 3. (a) is yes, can you indicate or provide a copy of the specific research/data reports?

4. (a) Has your teacher federation partnered with any distance, online and/or blended learning program or engaged in a project that focused on distance, online and/or blended learning?

4. (b) If the answer to 4. (a) is yes, can you indicate or provide information about the particular project?

5. (a) Are there issues or concerns from your members about the working conditions of those who work in distance, online and/or blended learning programs?

5. (b) How are these being addressed beyond collective agreements and union policies?

Appendix C

NOVA SCOTIA

Article 49 Distributed Education

49.01 It is recognized that in order to fully prepare students for the future, all students need to have access to distributed learning opportunities throughout their public education experience.

49.02 Distributed learning is a method of instruction that relies primarily on communication between students and teachers through the internet or other electronic-based delivery, teleconferencing, video conferencing or e-correspondence. It allows teachers, students, and content to be located in different, non-centralized locations so that instruction and learning can occur independent of time and place.

49.03 All distributed learning courses provided by a School Board shall be taught by certified teachers under contract with a School Board in a form approved under this Agreement.

49.04 The participation of a teacher in a distributed learning course shall be part of the teacher's regular assignment and shall not infringe upon the teacher's access to marking and preparation time, lunch periods, days pursuant to Article 25.05, School Year, or other such times provided to classroom teachers in the school.

49.05 The School Board shall provide that each school participating in a distributed learning course will ensure that a student supervision plan is in place. This plan shall include the name of the teacher or teachers responsible for ensuring that the students in the distributed learning class are supervised while at school

49.06 Each receiving site shall designate a teacher to coordinate distributed learning within the school. The role of the coordinating teacher shall be, as required:

(i) to make resources available, when needed, and designate a place where resources are to be stored;

(ii) to monitor student progress with the understanding that the distributed learning teacher is responsible for student evaluation;

(iii) to coordinate the availability of tutorial help for students when requested;

(iv) to ensure that student assignments and evaluations are sent to the delivery site and distributed when returned, where appropriate;

(v) to maintain regular contact with the teacher delivering distributed learning;

(vi) to maintain accurate registration records for distributed learning students;

(vii) to coordinate evaluation schedules under the direction of the distributed learning teacher;

(viii) to assist in dealing with parental enquiries and concerns as they arise.

The assignment shall be part of the co-ordinating teacher's regular assignment and shall not infringe upon the co-ordinating teacher's access to marking and preparation time, lunch periods, days pursuant to Article 25.05, School Year, or other such times provided to classroom teachers in the school.

49.07 Where the same course is offered within the school and fits a student's timetable, students shall require approval from the Director of Programs, or designate from the Board office, before taking the distributed learning course.

49.08 The maximum number of students permitted in a distributed learning course shall be twenty five (25).

49.09 Teachers participating in distributed learning programs shall be provided with access to ongoing professional development in distributed learning. Consideration shall be given to providing professional development activities as part of in-service days pursuant to Article 25 of this Agreement. Necessary costs for School Board approved professional development activities shall be paid by the School Board and may be claimed subject to Article 60 Professional Development Fund of this Agreement.

- 49.10 (i) The structure of the school day for a teacher assigned to teach distributed learning, whether synchronous or asynchronous, may be different but equivalent to the length of school day for teachers assigned to teach non-distributed learning courses.
 (ii) Any changes to the structure of the school day pursuant to (i) which impacts an individual teacher teaching distributed learning shall not occur without the agreement of the teacher. Should the Employer determine that the structure of the school day is to be different from what was assigned, should the distributed learning teacher decline the change, the Employer may still proceed with the change, in which case local provisions would apply to that teacher.
- 49.11 (i) Teachers in schools which transmit distributed learning courses shall have the option to request a distributed learning assignment.

(ii) A notice of assignment involving distributed learning shall be subject to assignment provisions in the Local Agreement.

49.12 A standing Distributed Learning Committee consisting of two (2) representatives from the Department of Education and Early Childhood Development, two (2) representatives from School Boards and four (4) representatives from the Union shall be established to address issues surrounding the ongoing development of distributed learning. The Committee shall meet at the request of either the Department of Education and Early Childhood Development or Union but in any event not less than twice a year and provide a written report to the parties bound by this Agreement. Without limiting the scope of the Committee, the following are expected topics:

- The application of reasonably equivalent hours of work
- Appropriate time and resources for those teaching distributed learning courses
- Professional development
- Technological change

ONTARIO

Sample Language from OSSTF/FEESO Teacher Collective Agreements

Sample 1 – Letter of Understanding

For the life of the 2008-2012 collective agreement E-Learning courses will comply with class size maximums.

Class Size language in the local collective agreement:

22.06 The following shall be the class size maxima and shall not be exceeded:

	Current	Sept 2009	Sept 2010
Academic Grade 9 & 10	32	32	32
Applied Grade 9 & 10	23	23	23
Essential (Locally Developed Compulsory)	18	18	18
College	30	30	30
College/University	34	34	32
University	34	34	32
Workplace	25	25	25
Technical - Constructions, Manufacturing, Transportation	24	23	22
Cooperative Education	24	26	26
Open Level Classes - Grade 9 and 10 - Civics/Career Studies - Grade 11 and 12 - Music/ Phys Ed/ Drama/ Dance	28 28 30	26 25 28 30	26 25 28 30

Up to 10% of these open level classes in each school, in each semester, may exceed the class size maximum by up to one student. Where, for program need e.g. band, drama, a teacher requests that an open level class be allowed to exceed either the class size maximum or the 10% limit, the request will be reviewed by the secondary staffing committee by May 31st.

Sample 2 - Article in the Collective Agreement

Article #XX – Electronic Education Programs

XX.01 E-Learning courses offered by the Near North District School Board will be offered through the provincial LMS (Learning Management System) and coordinated through the DELC (district E-learning Coordinator).

XX.02 The provision of E-Learning and scheduling is at the discretion of the board.

XX.03 Secondary school students under 21 years of age taking credit courses through an E-Learning course offered by day school program shall be recorded on the day school register of the student's home school.

XX.04 The provision of E-Learning may be part of the day school and/or continuing education programs.

XX.05 Classes consisting of both 21 years of age or over and under 21 years of age students, who are taking E-Learning courses shall be assigned to a class taught by a member of the Teacher's Bargaining Unit.

XX.06 E-Learning credit courses offered through the LMS will be conducted according to the requirements of the Education Act and Regulations.

XX.07 Classroom teachers delivering E-Learning courses through the LMS shall be solely responsible for the teaching, monitoring, assessment and evaluation of students taking the course.

XX.08 A teacher teaching E-Learning courses is assigned by mutual consent and shall correspond with students solely through the LMS and using Board email.

XX.09 The DELC will assign and manage all board accounts (student and teacher) in the secure environment of LMS.

XX.10 The DELC will be responsible for managing student user accounts; activate, disable, suspend, remove and changing passwords.

XX.11 A Teacher teaching an E-Learning course(s) shall have access to an appropriate work area with the appropriate resources. A member assigned to teach E-Learning courses shall be subject to the workload provisions set out in article 13 of this collective agreement.

XX.12 The employer shall provide the appropriate support personnel to maintain and repair computer hardware/software and computer networks required in order to deliver E-Learning courses.

XX.13 The District E-learning Coordinator (DELC) will work with all of the secondary schools to coordinate the scheduling and enrolment of all the students in E-Learning courses.

Sample 3 – Article in the Collective Agreement

XX.2.7 E-Learning

XX.2.7.1 Credits that are delivered through Contact North to northern reserves shall remain part of the continuing education contract.

XX.2.7.2 The Board will consult with the Bargaining Unit prior to offering electronic credits to other regular day school students.

XX.2.7.3 E-Learning courses for secondary school students shall be:

- taught by a secondary day school teacher who is a member of the OSSTF Bargaining Unit
- subject to the same class size restriction as other classed in secondary schools
- and scheduled during the regular work day.

XX.2.7.4 The secondary school teacher delivering the e-learning course shall:

- be assigned a work location in the member's secondary school with computer availability
- report to the school board personnel only and shall be evaluated only by the Principal or Vice-Principal of the member's school and/or Supervisory Officer employed by the board
- receive training on the delivery of courses on the e-learning platform.

Sample 4 – Letter of Understanding in a Collective Agreement

Re: Secondary School e-learning

The Board and the Union, in recognition that e-learning in Ontario is an evolving process, agree to the following provisions for establishing and implementing a delivery model for secondary program electronically through e-learning:

1. The Board agrees to inform the Union prior to implementing the electronic and distance education delivery of secondary school credits in a school.

2. Students enrolled in e-learning courses as part of their regular day school program will be recorded in either the full time or part-time day school enrolment register of the home board in the same manner as classroom delivered courses (as opposed to the Independent Study Register of the delivering board). (Ministry of Education 2007: SB19)

3. Credit courses offered by electronically delivered curriculum will be conducted according to the requirements of the Education Act and Regulations that apply to regular day school credit courses.

4. All electronically-delivered courses will be subject to the class size maxima as outlined in Article X of the Collective Agreement.

5. All lesson preparation, teaching, monitoring, evaluation, testing and reporting of marks to the home school of the student for students taking e-learning credit courses will be the responsibility of the teacher assigned to the e-learning course.

6. All e-learning courses will be scheduled as part of the teacher's timetable.

7. A teacher teaching an e-learning course(s) will be assigned a work station/work area in the teacher's secondary school with the necessary resources for teaching an on-line course.

8. A teacher teaching e-learning courses will correspond with students only through a Board server using software provided by the Board. The teacher will not use their personal email in any aspect of the delivery of the e-learning program.

9. A teacher teaching e-learning courses will report to school board personnel only and will be evaluated only by the principal or vice-principal and/or supervisory officers employed by the Board.

10. For purposes of staffing and surplus declaration, a teacher assigned to teach e-learning credit courses will be included in the staff complement of the secondary school which is the work location of the teacher, subject to the staffing provisions of the Collective Agreement.

11. All job postings for e-learning credit courses will be posted in accordance with Article XX.07 of the Collective Agreement.

12. In the event there are changes to the Education Act with respect to Provincial guidelines, funding or protocols, the Board and the Union agree to meet and review how such required changes will be implemented.

Course / Stream	Maximum	Flex
Locally-Developed	14	2
Learning Strategies	16	2
Workplace	20	2
Cooperative Education	24	3
Learning and Life Skills	10	0
Open (grades 9 and 10)	25	2
Applied	23	1
Open (grades 11 and 12), College	25	2
Academic	28	1
University, University/College (M)	29	2
International Baccalaureate and Advanced Placement	32	3
Limited Facility: Transportation, Construction, Integrated Technology, Manufacturing, Welding, Foods and Nutrition, Hospitality, Fashion and Design	20	2
Multi-stream / multi-grade classes	average of the class sizes	1

**Class Size language in this collective agreement:

<u>Sample 5 – Article in the Collective Agreement</u>

XX.07 E-Learning – Electronically Delivered Curriculum

1. Credit courses offered by way of electronically delivered curriculum shall be conducted according to the requirements of the Education Act and Regulations that apply to regular day school credit courses.

2. A teacher covered by the provisions in Article XIX shall teach all electronically delivered credits offered by the Waterloo Region District School Board.

3. All electronically delivered courses shall be part of a teacher's workload as defined in Article XX.04, XX.05 and XX.07 and counted toward a teacher's pupil-teacher contacts as outlined in Article XX.06.

** General class size language in this contract:

- Classroom Academic, University, University/College Level 30
- Classroom, College, Open Level 26
- Classroom Applied 24
- Modified/Essential/Workplace Level 16
- Limited Facility Family Studies/Technological Studies 20
- English as a Second Language Classes 17

4. All lesson preparation, teaching, monitoring, evaluation, testing and reporting of marks to the home school of the student for students taking e-Learning credit courses will be the responsibility of the teacher assigned to the e-Learning course.

5. A teacher teaching an e-Learning course(s) will be assigned a work station/work area in the teacher's secondary school with the necessary resources for teaching an on-line course.

6. The teacher will not use their personal email in any aspect of the delivery of the e-Learning program.

7. A teacher teaching e-Learning courses will report to school board personnel only and will be evaluated only by the principal or vice-principal and/or supervisory officers employed by the Board.

ALBERTA

Calgary School District No 19 (2012 - 2016)

CBe LEARN TEACHERS

One (1) Full Time Equivalent (FTE) assignment for instructional and assignable time for teachers in CBe learn is 585 student credits, determined by multiplying the number of active students by the number of course credits. If the number of courses multiplied by the course credit weight exceeds 20 (ie. 4 courses x 5 credits each), consideration will be given to reducing the number of students. A teacher in CBe Learn may agree to other configurations based on credit value of the courses and determined by shared decision-making as per the Staff Involvement in School Decisions document. A maximum of six hours per week may be assigned to non-instructional tasks such as curriculum development, staff meetings, and other district assigned inservice. This provision does not apply to teachers in a regular classroom setting. The parties shall jointly review the operation of this clause and report back to their respective parties by Dec 31, 2015.

Sturgeon School Division No 24 (2012 - 2016)

24.0 WORKPLACE HEALTH AND SAFETY COMMITTEE

24.3 The Employer shall ensure that teachers in YDP, MLC, SLC work in a safe work environment considerate of the safety issues unique at the school. To protect teachers, the staffing complement shall include a minimum of two staff members at all times.

SASKATCHEWAN

2.16 Technology and Education

2.16.1 Definitions

Information and communications technologies have instructional and administrative purposes in education. Examples include networks, computer hardware and information devices, mobile devices, software, online resources, audiovisual equipment and resources, data and communications media. In its application to education, technology requires the knowledge, techniques and support systems that are required to use these technologies and assist with student learning.

Online education refers to the delivery of educational materials by a teacher through the use of the Internet or other technologies. This can include distance classes, cyber-schools, exclusively online education and in-classroom online instruction tools.

Digital citizenship is a concept that outlines appropriate roles, responsibilities and rights within the digital world. Digital citizenship includes interacting in appropriate ways and being aware of the digital footprint being created through online usage.

2.16.2 Beliefs

(1) All use of information and communications technologies in the education system must be based on sound research and pedagogy, have clear links to the curriculum and be meaningful, purposeful and inclusive.

(2) As experts in pedagogy, teachers, principals and vice-principals must be involved in all areas of technological resource development and assessment, and have access to relevant online resources and materials that they can choose to integrate.

(3) Technology has the potential to positively transform the education system and improve student engagement through a pedagogical focus that includes collaboration, diverse learning environments and enhanced student autonomy.

(4) The inclusion of technologies in instruction requires appropriate time, resources and supports for teachers to both develop their own technical capacities and effectively integrate their knowledge into their teaching and student learning.

(5) All students should have access to technologies that will enhance their educational experience and further their engagement and their access should not be limited by geography or socio-economic status.

(6) All teachers, in accordance with the professional codes, must model positive digital citizenship and be aware of and accountable for their online actions, particularly in relation to social media.

(7) The collection and analysis of data in the classroom must be appropriate to the curriculum, the needs of the students and must not replace the fundamental teaching and learning relationship between students and teachers.

(8) Technology must be sufficiently flexible to support the professional autonomy of teachers in performing evaluation and assessment.

(9) Exclusively online education is an important and growing sector of the public education system and requires particular attention in the following ways:

(a) Teachers must be involved in the development and delivery of supports for students at the receiving end of online education.

(b) Online education is a unique mode of teaching and professional development, and professional growth opportunities must reflect these teaching and learning environments.

(c) Teachers' workloads must be carefully considered in relation to online education to ensure students' needs are being met and that teacher workloads are reasonable, clearly defined and encourage balance.

(d) When possible, online education should be based on a decentralized model of delivery that reflects local contexts and supports, rather than replaces rural, remote or northern schools.

(e) Online education may be a viable alternative for student engagement. The referral process must be collaborative, respect student autonomy, meet students' needs and ensure ongoing supports are available.

(10) Therefore, teachers individually and collectively:

(a) Work with partners in education to ensure teachers have the time, supports and resources to both develop their own technological literacy through continuous professional learning and implement technology in pedagogically sound ways.

(b) Advocate for equitable access to technology and technological instruction for students, and work to eradicate barriers to technology based on, among others, racial identity, gender, ability, geographical location or socio-economic status.

(c) Work to develop technological literacy within the profession to ensure students are creating and mastering technologies.

(d) Be aware of their own responsibility as digital citizens, and model and teach healthy digital citizenship with their students.

(e) Advocate for responsible use, storage, dissemination, repurposing and disposal of data that respects copyright and privacy laws.

(f) Advocate for well-resourced and sustainable plans around the ongoing purchasing of information and communication technologies across the province.

(g) Advocate for teacher involvement at all levels of online education.

(2015)

Source: STF Policy 2.16 (Technology and Education) STF Governance Handbook , July 2016, pp. 90-91.



State of the Nation: K-12 E-Learning in Canada – http://k12sotn.ca