DIGITAL TECHNOLOGY: MEETING THE CHALLENGE, PROVIDING THE SUPPORT

CSQ survey results
The Centrale des syndicats du Québec (CSQ) represents close to 200,000 members, 130,000 of whom work in the education sector.

The CSQ brings together 11 federations which include some 240 unions, affiliated based on their members’ area of activity. Also included is the AREQ-CSQ, the Association des retraitées et retraités de l’éducation et des autres services publics du Québec.

CSQ members hold positions spanning more than 350 job titles. They are involved in all levels of education (teaching, professional and support staff) as well as in the fields of educational childcare, health and social services (nursing, professional and support staff, educators), recreation, culture, community services, communications and municipal services.

Furthermore, 75% of all CSQ members are women while 30% are aged 35 and under.
Acknowledgments

We would like to thank all CSQ members who took part in this survey as well as the unions and federations affiliated with the CSQ who were invaluable to the success of this research.

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Managers of the digital technology survey
An irreversible shift

The digital age is redefining the employment sector and the world of work. These transformations are not only reshaping workloads and work organization but also the personnel’s support and training needs. They also have an impact on the quality, accessibility and provision of public services to the population.

Given the importance of this issue, the Centrale des syndicats du Québec (CSQ) began in spring 2017 a wide-ranging research project on digital technology to document its impacts on work and workplaces and to contribute to the development of guidelines and courses of action on the use of these new technologies in education. Our central union is the first in Québec to conduct a widespread survey of its members on the matter.

For the CSQ, there is no doubt that the new digital culture must bring about the reduction of social inequalities. And to do so, our society must commit to the democratization and accessibility, for one and all, of digital tools, by putting into practice a common vision of the measures required to succeed with this significant shift.

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<th>Year</th>
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<td>2014</td>
<td>Ottawa introduces the Digital Canada 150 strategy.</td>
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<td>2015</td>
<td>The OECD(^1) (Organisation for Economic Co-operation and Development) points out that most national digital strategies focus on telecommunication infrastructures and network capacity. It therefore encourages countries to address the profound shift caused by digital technology, particularly in regards to employment, so as to develop their digital economy and maximize its economic and social benefits.</td>
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<td>2017</td>
<td>Québec(^2) unveils its first digital strategy designed to, among other things, foster the development of digital culture in all environments as well as position itself as an actor in global digital transformation. It is in this context that the Digital Action Plan for Education and Higher Education was developed by the Ministère de l’Éducation et de l’Enseignement supérieur. Education personnel, for their part, have been dealing with these technological tools for close to 30 years.</td>
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Both opportunity and threat: the implications of the digital revolution

With the rise of automation, robotization, artificial intelligence and virtual work, does the digital revolution hold the promise of a better tomorrow or of increased inequalities? Technological development has been at the centre of discussions on the future of work.

Work organization is being reshaped by an increased reliance on technologies, challenging conventionally built employment relationships and accelerating the delocalization of labour. These changes are also blurring the lines between paid and unpaid work.

However, according to research done on the digital revolution’s actual impact on the world of work, many studies overestimate the rate of dissemination of new technologies and their degree of productive efficiency, while underestimating the social and organizational constraints that curb or mitigate their impacts. Therefore, the more significant impacts aren’t really affecting work volume but rather change the structure of work.

Digital technology and Education

The use of digital tools in education has a positive impact on student motivation, although it does not seem to have any direct short-term impact on their academic performances. Furthermore, technologies increase learning opportunities, if

feedback is taken into account, and, above all, if education personnel have undergone training on their educational and pedagogical use. Though some publications are more critical of these technologies’ contribution to academic success, there is significant research showing their many benefits in education. In fact, the OECD recommends the development of an education system, an expertise as well as skills that complement the performances of machines, technologies and other artificial intelligences.

Finally, current research on certain negative aspects of work, such as stress or professional burnout, or on certain positive aspects, such as fulfilment and self-realization, highlight the importance of autonomy in the organization of one’s work and the level of control over one’s own work environment. Therefore, we must collectively reflect on how best to maintain this autonomy and this control, with technologies becoming increasingly intelligent and ever present in workplaces.

Methodology

The survey targeted members of the seven education sector federations included in the CSQ, namely French—and English—speaking teaching, professional and support staff, working in the school, higher education and private institutions (school and college levels) networks.

Objectives: to identify the transformations which result from digital tools in terms of:

• work and workplaces;
• the impacts on working conditions;
• the needs and concerns of CSQ members.

Participation: 9,000 respondents took part in this survey, resulting in an adequate and significant representation of the members of the federations included in the CSQ.

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What are the findings of the CSQ digital survey?

Digital tools’ impact on work

Finding #1: Education personnel are in favour of digital technology.

97% of all education personnel – across all job, network (school, higher education or private institutions) and age group categories – are in favour of the use of digital tools.

This result debunks the myth that education personnel, particularly teachers and older individuals, are raising objections to the use of new technologies or are resistant to change.

Finding #2: The use of personal technological equipment to carry out professional tasks is a daily reality.

The use of personal equipment has become a reality for respondents across all job categories. 74% say they use their personal technological equipment (computer, phone and tablet) in the course of their work.

Whether by choice, obligation or to adequately carry out any required work-related tasks, the use of personal equipment reveals a significant transformation in the way work is now done.

Finding #3: The use of technological equipment narrows the boundaries between personal and professional life.

The use of personal equipment in and outside the workplace is a reality for 71.5% of all respondents.

“Work follows us in our homes. We’re expected to keep working with students and parents day and night, in the evening and on weekends.”

Tasks accomplished on one’s own time, outside regular work hours (reading emails, making/answering phone calls, other professional tasks related to digital technology), have increased and significantly increased for 76.5% of all respondents. As for telework, 47% of respondents say it is sometimes required.

“An impression of 24/7 availability that digital technology can create”

These findings are indicative of how the arrival of these technologies has transformed the manner in which work is done, thus reducing boundaries between personal and professional life.
Finding #4: Professional tasks are increasing in numbers and diversity.

As reported in the literature review, the use of digital technology redefines work, namely the professional tasks that must be completed. It should be noted that these transformations can lead to both better and worse working conditions.

“With digital technology, everything is faster, tasks increase and I run out of time.”

“My duties are the same, but I’m correcting less, planning better and creating more.”

Respondents have noted an increase or significant increase of different aspects of their work, namely:

- The diversity of their duties (76%);
- The control over the execution of their tasks (management of time and process, creating material whether educational or administrative or other) (74%);
- The number of tasks to carry out in a specific time period (65%).

Finding #5: Digital skills are difficult to assess\(^{13}\).

Technical skills, associated with the ability to use technologies efficiently, garner the highest assessments from the respondents. In fact, 51% believe they have extensive and excellent skills (11% report minimal or rudimentary skills). Assessments sorted by age suggest that, unlike their older counterparts, younger members believe their technical skills are more advanced.

Cognitive skills, namely the ability to choose, understand and assess digital information, rank second, with 46% of respondents estimating their skills as extensive and excellent, 37% as good, and 17% as minimal or rudimentary.

Collaborative skills, measured in terms of the ability to collaborate and solve problems in digital environments, come in third place; 43% of all respondents consider their skills as extensive and excellent, while 20% rate theirs as minimal or rudimentary. The lowest rate stems from the teaching staff at the school level.

Technopedagogical skills, which measure the ability of individuals to use technical, collaborative and cognitive skills in their pedagogical practices, received the lowest

\(^{13}\) UNESCO’s Competency Framework and the model developed by the CEFRIIO were used to identify the competencies to be assessed. It should be pointed out that the results of this portion of the questionnaire were based on the respondents’ self-assessment regarding their skills. The objective was not to have an accurate measurement of the respondents’ skill level through specific indicators but to let the aforementioned make their own assessment.
score. Yet these skills are crucial to support both pupils and students with the use of digital tools so as to allow them to improve their skills as well as produce new knowledge.

It is important to point out that neither the scientific literature nor any research has been able to determine the level of skill required to properly carry out one’s work in the education sector.

**The impact of digital tools in the workplace**

**Finding #6: Sharing tasks, collaborating with colleagues and communications among all stakeholders across the various education networks have improved or significantly improved.**

In total, 76.5% of respondents stated that the use of digital tools has improved or significantly improved communications at all levels, whether with colleagues, parents, the public or external collaborators, and even with pupils and students.

**Finding #7: Digital tools are conducive to pupil and student learning and motivation.**

Scientific literature, research and surveys have clearly established the positive impact of the use of digital tools on the motivation and learning of pupils and students. It thus comes as no surprise that close to 70% of respondents stated having noticed an improvement or a significant improvement of these two indicators. In this regard, it must also be noted that scientific literature has reported mixed results as to the impact of digital tools on the educational success of children and youngsters.

**Finding #8: The insufficient time to take ownership of and master various digital tools is the main obstacle to their use.**

“The additional amount of time required to integrate digital tools must be acknowledged.”

The five key obstacles to the use of digital tools for all personnel categories across the three education networks involved in this survey are:

1- The insufficient time to take ownership of and then master the various digital tools;
2- Technical problems;
3- Lack of training;
4- Insufficient technical support;
5- Lack of or limited access to digital tools or supporting material.
Thus, our results support a well-documented situation, in scientific literature, with regard to the obstacles linked to the use of digital tools.

**Pressing training needs**

Survey responses provide an up-to-date picture of the training related to the use of digital tools undergone by workers.

“Increasing the efficiency of digital technology by ensuring that individuals are adequately trained.”

**Finding #9: 70% of respondents have undergone training on the use of digital tools...**

An overall tally of all completed training (training on the basic use of digital tools or training regarding digital tool use specific to the field, or both) shows that 70% of workers have undergone some type of training. Accordingly, 30% of respondents reported not having received any training.

**Finding #10: ... but they were short training courses focusing on the basics of digital tools.**

“There’s a lot of on-the-job training. I would like to deepen my knowledge, to focus on improving instead of discovering. ”

In fact, 75.5% of respondents have stated having undergone eight hours or less of training related to digital technology in the past twelve months\(^\text{14}\). This should undoubtedly provide an opportunity to judge whether this is an adequate result for individuals working in the education sector.

**Finding #11: Stand-alone trainings, unpaid and outside regular work hours, are given priority over online trainings during working hours.**

The three most popular types of training on the use of digital tools are:

1- Additional training during working hours (not mandatory);
2- Mandatory training during working hours or during professional development days;
3- Stand-alone training, outside of working hours, unpaid by the employer.

By comparing results on the type of training with respondents’ preferred time of day to undergo digital-related training, findings show that stand-alone trainings outside of working hours are popular; 82% of respondents report having opted for this

\(^{14}\) Digital technology training may be offered but the personnel’s needs may call for other types of training better suited to their field’s professional duties and their work environment.
format.

This reinforces the finding regarding work’s transformations, namely that the boundaries between professional and personal life have shrunk, as well as those between paid and unpaid work.

**Conclusion:**

The CSQ survey on digital technology shows that the teaching, professional and support staffs of the school network, in higher education and in the private network are dedicated to their work and the educational mission with which they are entrusted, as well as being highly in favour of the use of digital tools.

However, it is essential to consider the use of digital tools in the education field through two different lenses. Transformations have improved work (collaboration, communication, student motivation and learning). However, some negative impacts on the working conditions of different professional categories have been reported.

In keeping with their assessment of their technopedagogical skills as well as the identification of obstacles to the use of digital technology (need for training and time to master said tools), the CSQ survey confirms that workers’ main concern is to improve and expand their digital skills so as to maintain their professional commitment toward their pupils and students, and to improve their working conditions.

**Three courses of action have been given priority by respondents:**

1- Ensure that sufficient, appropriate and recognized training be offered when digital tools are incorporated.
2- Ensure that the necessary digital tools are accessible to everyone.
3- Require that personnel be consulted about the choice of digital tools and their use.

The CSQ is committed to supporting a collective reflection with its members toward the development of more specific demands related to the challenges that digital technology brings—and will bring—in the coming years with regard to:

1- The duties of members increasing and becoming more complex, and the increasingly complex skills that will be required following the implementation of digital technologies in the workplace;
2- Training needs;
3- Access to the digital tools essential to members’ work;
4- Increasing encroachment of professional work on private lives, both in terms of duties performed outside of work hours and training.
Digital technology is changing work, namely the boundaries between private and professional life, between paid and unpaid work, as well as between physical and virtual workplaces. These transformations ease, upset and enhance the work of education personnel. However, these changes run the risk of calling into question regulatory and under-agreement frameworks related to the conditions under which this same personnel is—and will be—required to carry out its duties.
The CSQ reminds the Ministère de l'Éducation et de l'Enseignement supérieur and the Government of Québec:

- That the interests and needs of individuals must be central and take precedence in the Digital Action Plan for Education and Higher Education;
- That CSQ members are in favour of digital technology and want to benefit from the conditions which will allow its use to support children's learning and success;
- That Québec's transition to digital technology will not be successful if the training needs of the education personnel across all categories are not given priority, as they are key players in the development of the digital skills of children and youngsters, but also workers who will be called on to use digital tools in their work;
- That education workers are experiencing a significant increase in duties related to digital technology, carried out outside of regular working hours. They even use their personal time to overcome the obstacles encountered during digital technology’s development, to undergo training and master the tools needed to support the learning and success of pupils and students, which increases their already quite significant workload;
- That the Ministère must focus on collaboration, sharing tasks and communications with all education stakeholders, in workplaces, to secure a successful transition toward digital technology. Collaboration between technical, professional and teaching staff is crucial. Everyone must have access to training and has a right to it;
- That the implementation of the Digital Action Plan for Education and Higher Education must take the expertise of the education personnel in consideration and set up consultation mechanisms to plan the transition toward digital technology in the different environments. We would caution the Ministère against the temptation to foster an unhealthy competition among education stakeholders, namely between those who are digitally proficient and those who are not.