Connected to Learn:

Teachers' Experiences with Networked Technologies in the Classroom

MediaSmarts
YOUNG CANADIANS IN A WIRED WORLD

Canadian Teachers' Federation
Fédération canadienne des enseignantes et des enseignants

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EXECUTIVE SUMMARY

To get a better understanding of how networked technologies are impacting teachers and their teaching practices, in 2015 the Canadian Teachers' Federation partnered with MediaSmarts to survey 4,043 K-12 teachers and school administrators who were teaching in a classroom setting across the country. The survey explored the extent to which networked technologies are available in the classroom, the ways teachers are using networked technologies to support learning, the knowledge and skills teachers have developed to make the most of networked technologies as learning tools, and creative uses of networked technologies for learning activities.

In addition to the quantitative survey questions, teachers also had an opportunity to share their perspectives on their own pedagogical experiences, both good and bad, using networked technologies. These open-ended qualitative responses, which will be the subject of further analysis at a later date, reinforce the key messages that have emerged from the quantitative data.

KEY MESSAGES

1. TEACHERS FEEL THAT IT IS VERY IMPORTANT TO TEACH DIGITAL LITERACY SKILLS AND ARE GENERALLY CONFIDENT IN THEIR ABILITY TO DO SO

Over 90 percent of teachers consider it "very" or "somewhat" important that their students learn *the full gambit* of digital literacy skills,[1] and more than 80 percent of teachers consider it "very" important that their students learn at least six of the eight skills we asked about in our survey.

Teachers are fairly confident in their ability to teach these skills as well: at least seven in ten teachers report being "very" or "somewhat" confident in their ability to teach each surveyed skill respectively.

[1] Including searching for online information; verifying that online information is credible/relevant /accurate; understanding online privacy issues and settings; appropriate online behaviour; staying safe online; dealing with cyberbullying; deconstructing various messages embedded in the online environment; and understanding how organizations collect and use personal information online.

2. THE VAST MAJORITY OF TEACHERS AND STUDENTS HAVE AND USE NETWORKED DEVICES IN THE CLASSROOM

Networked technologies are ubiquitous in Canadian schools. Ninety-seven percent of respondents say that their school has provided some kind of networked devices in the classroom.

Moreover, Canadian teachers frequently make use of these devices and feel that they have a positive impact on learning. A strong majority uses networked technologies either "significantly" or "somewhat",[2] and a majority of teachers at all levels agree that "networked devices make it easier for my students to learn" and "networked devices make it easier for me to match my instructional practice to students' learning styles."

It is interesting to note that popular networked technologies such as desktop computers, laptops/notebooks and smart boards all have either a long history of use in classroom settings or directly replace an existing classroom technology, such as a blackboard or overhead projector. This suggests that technologies that mirror existing teaching practices are the most likely to be adopted in the classroom. Social media, which has no direct pre-existing correlate, has yet to be widely adopted by teachers, with just over one in ten using social networking in the classroom for educational purposes and just under one in five using it outside the classroom to communicate with students for educational purposes.

Kindergarten is a "low-tech zone" compared to elementary and secondary levels with respect to student-owned devices. Three-quarters of teachers at the kindergarten level report that students are not allowed to bring any of their own devices into the classroom for education purposes. Note however that when examining school supplied devices, survey results reveal that tablets and desktop computers are supplied more frequently at the kindergarten level. Tablets supplied by the school are also used most frequently at the kindergarten level, and smart boards supplied by the school are also slightly more likely to be used at the kindergarten level. "Laptops and notebooks" is the only examined school-supplied device that is significantly less likely to be supplied and used at the kindergarten level.

[2] Although rates of use differ for each type of device.

3. TEACHERS WOULD LIKE MORE SUPPORT AND AUTONOMY IN USING NETWORKED TECHNOLOGIES IN THE CLASSROOM

Teachers are generally positive about the potential of networked technologies as learning tools, but they are less likely to feel they have the support they need to realize these benefits. In responses to an open-ended question on least successful teaching experiences involving networked technologies, teachers were most concerned about a lack of technical support for maintaining and upgrading software, devices and networks (especially in remote and Northern schools) and the lack of proper training in how to use networked devices to meet curricular goals.

4. THE PERSONAL DEVICES THAT STUDENTS ARE LEAST OFTEN PERMITTED TO BRING TO CLASS ARE ALSO THE ONES THEY ARE MOST LIKELY TO USE WHEN ALLOWED

A small majority (59%) of teachers report that students are allowed to use at least one networked device that they own in class. However, there is a sharp divide in this practice, as more than 41 percent of classrooms do not allow children to bring in any personal device.

Student-supplied devices that are *least* likely to be allowed – MP3 players and smart phones – are the ones with the highest frequency of use: 92 percent of teachers who report that students are allowed to bring smart phones say they use them “significantly” or “somewhat” for educational purposes, while 87 percent of teachers whose students are allowed to bring MP3 players say their students use them “significantly” or “somewhat”.

In many cases, teachers are likely to have limited control over whether or not students are permitted to bring networked devices to class, since this is often a decision made at the school or district level.

5. TEACHERS ARE USING NETWORKED DEVICES IN THEIR CLASSROOMS TO DELIVER CONTENT TO STUDENTS AND TO EMPOWER THEIR STUDENTS TO CREATE CONTENT

A significant portion of teachers reports that networked technologies are great vehicles for introducing students to innovative content and for encouraging students to make content of their own.

More than 70 percent of teachers report that their students have accessed content through online videos, almost half (46%) through video games, and a third (33%) through digital comics or graphic novels. And almost four in ten (38%) have had their students create videos. This type of creation is an important part of developing digital literacy skills, which go beyond mere use

and understanding to position students as content creators in their own right.

At the same time, however, the vast majority of teachers have never taught their students to write computer code: just over five percent report having ever done this.

A GLIMPSE AT THE LANDSCAPE

Networked Devices Supplied by Schools

- The most common networked devices supplied by schools – Smart boards (72%), desktop computers (65%) and laptops/notebooks (64%) – are those with a long history of use in classroom settings or that directly replace an existing classroom technology.
- Overall, the networked devices provided by schools that teachers are most likely to say that they *use* "significantly" or "somewhat" with their students are desktop computers, followed by laptops and notebooks and smart boards.
- The *least* likely device used is a tablet: almost one in five teachers who have been provided with tablets by their schools does not use them at all with their students.
    - The exception to this is kindergarten teachers, who are most likely to report being provided with tablets (such as iPads) by their schools (71%) and are most likely to say they use them significantly (39% compared to 30% of elementary teachers and 18% of secondary teachers).

Networked Devices Supplied by Students

- Four out of ten teachers report that their students are not permitted to use their own devices in the classroom.
- Student-owned devices that are most often permitted are tablets (47%), laptops (43%) and smart phones (41%).
    - Older students are much more likely than younger students to be allowed to bring a device to school.
- When student-owned devices are permitted, smart phones (92%) and MP3 players (87%) are the most likely to be used for educational purposes in the classroom.

Using Networked Technologies to Support Learning

- In our survey, we listed a number of ways teachers could use networked technologies in the classroom. The most common use selected by teachers is "Breaking students into groups and use one or more technologies to match different learning styles" – 22 percent do this frequently, and 43 percent do this occasionally.
- Teachers are least likely to use networked technologies to facilitate students communicating with others outside of the classroom as part of a learning exercise – more than half say they never do this.
- Almost 8 in 10 teachers (79%) agree "strongly" or "somewhat" that networked devices make it easier for students to learn.
    - Teachers at English-language schools (80%) are more likely than teachers at French-language schools (69%) to agree with this statement.
- Three-quarters of teachers (74%) agree that networked devices have helped them to match their instructional practice to a variety of students' learning styles.
- Although the majority of teachers (60%) report that networked devices do not make it difficult for them to maintain classroom discipline, three in ten say that this is a problem.
    - Forty-six percent of secondary teachers agree ("strongly" or "somewhat") that networked devices disrupt learning in the classroom by making it difficult to maintain discipline, compared to 23 percent of elementary teachers and 16 percent of kindergarten teachers.
    - Male teachers (38%) are more likely than female teachers (28%) to report that networked devices disrupt learning in their classrooms.
    - Teacher experience is also a factor: one-third of teachers with fewer than five years' teaching experience agree that networked devices are disruptive, compared to one-quarter of teachers with more than 25 years' teaching experience.
- Over six in ten teachers (62%) "strongly" or "somewhat" disagree with the statement "Networked devices in the classroom erode the privacy and trust that is needed for students to feel confident about expressing themselves".

- At the same time, secondary teachers (27%) are considerably more likely than elementary and Kindergarten teachers (16%) to agree with this statement.

- Eighty-three percent of teachers have had websites they've wanted to use in the classroom for educational purposes blocked by school or board filters.

Social Networking in the Classroom

- Overall one in ten teachers (13%) report using social networking in their classrooms for educational purposes.

  - Those who do are most likely to report "frequently" or "occasionally" using Twitter (58%), an educational social networking platform designed specifically for teachers or schools (51%) or Facebook (30%).

- Teachers in English-language schools (14%) are twice as likely as teachers in French schools (7%) to say they use social networking platforms in their classrooms.

- When asked to specify any social networking platforms being used in the classroom that aren't on the list provided, platforms for blogging are most frequently mentioned.

Social Networking Outside of the Classroom

- Less than one-fifth of teachers (18%) report using social networking to communicate with their students for educational purposes outside of the classroom.

  - Secondary teachers (25%) are significantly more likely than elementary teachers (15%) to report doing this.

  - The majority (64%) of teachers who are using social networking outside of the classroom with their students use a dedicated account.

Support for the Integration of Technology into Teaching Practices

- Slightly more than half of teachers (54%) agree "strongly" or "somewhat" that their school district provides them with sufficient support and training on how to use networked technologies.

- A similar percentage (50%) also report that they receive sufficient support from their

schools and districts to help them use networked technologies to meet curricular goals.

- When asked about support relating to online conflict amongst students, teachers are more likely to agree (37%) than disagree (31%) that they have sufficient support from administration.
- About one-third (32%) of teachers feel that this question does not apply to them. Teachers in French language schools are particularly likely to indicate this (47% compared to 30% of teachers in English schools).
    - Almost six in ten kindergarten teachers (59%) report that having administrative support relating to online conflict is not-applicable them, compared to 35% of elementary teachers and 21% of secondary teachers.

Developing Student Skills using Networked Technologies

- When asked to rate the importance of students learning about several Internet topics, high percentages of teachers rank all of them as being "very important".
    - The top five topics are: Staying safe online (94%), appropriate online behaviour (93%), dealing with cyberbullying (89%), understanding online privacy issues and settings (88%) and verifying that online information is credible/relevant/accurate (87%).
    - Teachers in English language schools are more likely than teachers in French language schools to rank the listed topics as being "very important".

Knowledge and Skills Pertaining to Teaching with Networked Technologies

- Generally, teachers express fairly high levels of confidence in their ability to teach the topics examined in the survey (although the percentages for teachers who indicate being "somewhat confident" are higher than those who indicate being "very confident" for eight of the nine examined topics).
    - Kindergarten teachers are significantly more likely than elementary and secondary teachers to say that these questions are "not applicable" to them.
- When asked to rate their confidence in teaching their students about the listed Internet topics, teachers are most confident teaching online searching skills (95%), how to stay

safe online (90%) and skills for verifying online information (88%).

    - Newer teachers (<5 years teaching) are significantly more likely (95%) than more experienced teachers to indicate being "very confident" teaching about online safety (25+ years of experience – 85%).

- Despite their confidence in teaching online safety skills, teachers are much less confident helping their students deal with cyberbullying (77% indicate being confident doing this).
- The two topics that teachers are least confident teaching are how companies collect and use personal information online (27% indicate not being confident doing this) and in their ability to use networked technologies to support student learning (22% are not confident).

Creative Uses of Digital Technologies for Learning Activities

To help identify creative uses of digital technologies, teachers were asked to indicate the ways in which their students were accessing or creating content using micro blogs, videos, audio podcasts, digital graphic novels/comics and video games.

- The most widely used technologies are videos, with 79 percent of teachers reporting that their students have used videos to access and/or to create content.
- Videos are far ahead of video games, the next most-used technology: 48 percent of teachers report their students use these to access and/or create content.
- Teachers are more likely to report that their students use Blogs, Micro Blogs, Videos, Audio Podcasts, Digital Graphic Novels/Comics, or Video Games to access content created by someone else than they are to use these to create content.

Coding in the Classroom

- When asked if their students have learned computer coding, only a small percentage of teachers (6%) answered "Yes" to this question.
- Over one-quarter (27%) indicate that this question does not apply to them.
    - Student's grade levels also impact the applicability of computer coding. The share of

teachers reporting that students learning to write computer code was "not applicable" is significantly higher at the kindergarten level (59%) than at the elementary (25%) and secondary (21%) levels.

Connected to Learn: Teachers' Experiences with Networked Technologies in the Classroom is part of MediaSmarts' ongoing research project, *Young Canadians in a Wired World*. Previous reports can be accessed on the MediaSmarts website at http://mediasmarts.ca/young-canadians-wired-world-phase-iii-0.

INTRODUCTION

Canada established itself as a leader in bringing networked technologies into classrooms in 1993 when the federal government first launched the SchoolNet initiative.[3] While there is no question that Canadian students have been using networked technologies in the classroom since then, it is much less clear which devices are used and what teachers and students are doing with them.

To find out, the Canadian Teachers' Federation partnered with MediaSmarts to survey 4,043 K-12 teachers and school administrators who were teaching in a classroom setting in 2015[4] to get a better understanding of how teachers and their teaching practices are being impacted by networked technologies. Among the topics explored are the availability of networked technologies to support student learning, the ways teachers are using networked technologies in the classroom, the knowledge and skills teachers have developed to make the most of networked technologies as a learning tool and the creative uses of networked technologies for learning activities. As well, teachers had an opportunity to share their perspectives on actual experiences using networked technologies in their classrooms.

We hope the findings will be used to inform policy and practice regarding the use of networked technologies in education from the perspective of the teaching profession in Canada.

Connected to Learn: Teachers' Experiences with Networked Technologies in the Classroom is part of MediaSmarts' ongoing research project, Young Canadians in a Wired World. Previous reports include Young Canadians in a Wired World, Phase III: Teachers' Perspectives (2012), Young Canadians in a Wired World, Phase III: Talking to Youth and Parents About Life Online (2012) and seven reports based on our survey of 5,436 students in grades 4-11 living in all provinces and territories across Canada, published in 2014-2015. All of these can be accessed on the MediaSmarts website at http://mediasmarts.ca/young-canadians-wired-world-phase-iii-0.

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[3] Darragh, Ian. "SchoolNet." *The Canadian Encyclopedia*, first published December 3, 2012, last edited December 16, 2013. < http://www.thecanadianencyclopedia.ca/en/article/schoolnet/>

[4] More detailed demographic information about the participants can be found in Appendix II. The full survey can be found in Appendix I.

A note on interpretation

There are significant overlaps between gender, school size and school level in the data. For example, the vast majority of our respondents who are teaching in elementary schools in general and in kindergarten classes in particular are female (79% female compared to 17% male, and 90% female compared to 5% male, respectively); whereas the secondary school teachers in our sample are more evenly divided between male and female (55% female compared to 41% male).[5] This means that the gendered differences noted throughout the report may reflect the fact that female teachers are more likely to be focused on different classroom needs because younger students have different developmental needs than older students.

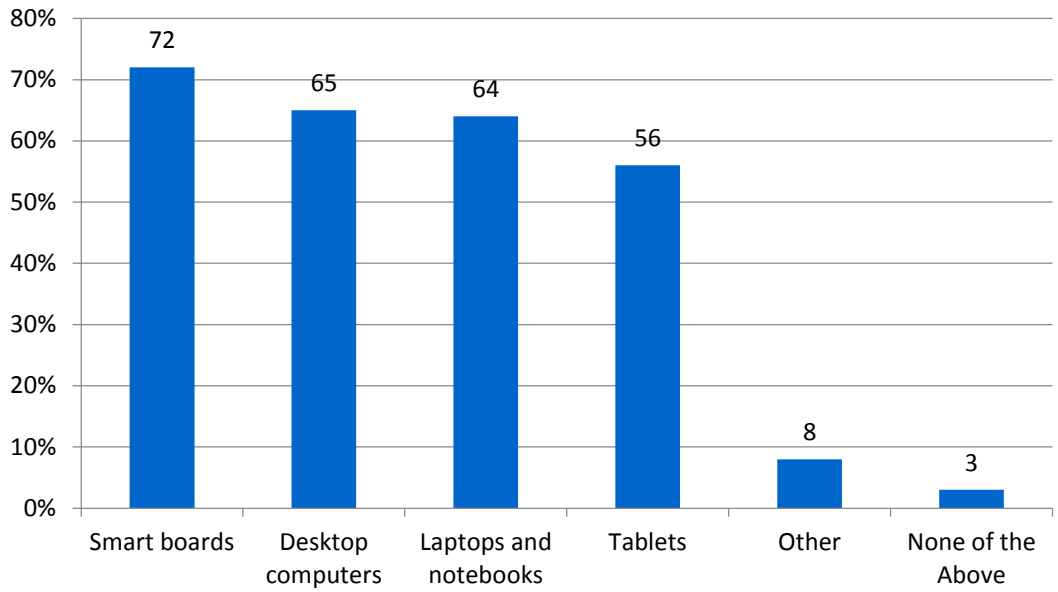
Similarly, the elementary schools in the sample tend to be smaller than the secondary schools. For example, approximately two-thirds (63%) of the smallest schools (i.e. with fewer than 250 students) are elementary schools (compared to 26% which are secondary schools); and among the largest schools with 1,000 or more students, 89 percent are secondary schools and 11 percent are elementary schools. Again, differences between school sizes may reflect the fact that the developmental needs of students in elementary and secondary schools change with age.

[5] Numbers do not add up to 100 percent because respondents were also given the options "Gender undeclared/Gender neutral" and "Prefer not to answer."

NETWORKED DEVICES SUPPLIED BY SCHOOLS

1A. WHICH OF THE FOLLOWING NETWORKED DEVICES DOES YOUR SCHOOL SUPPLY TO USE WITH THE STUDENTS IN YOUR CLASSROOM FOR EDUCATIONAL PURPOSES?

Chart 1a-1 Networked Device Provided by Schools

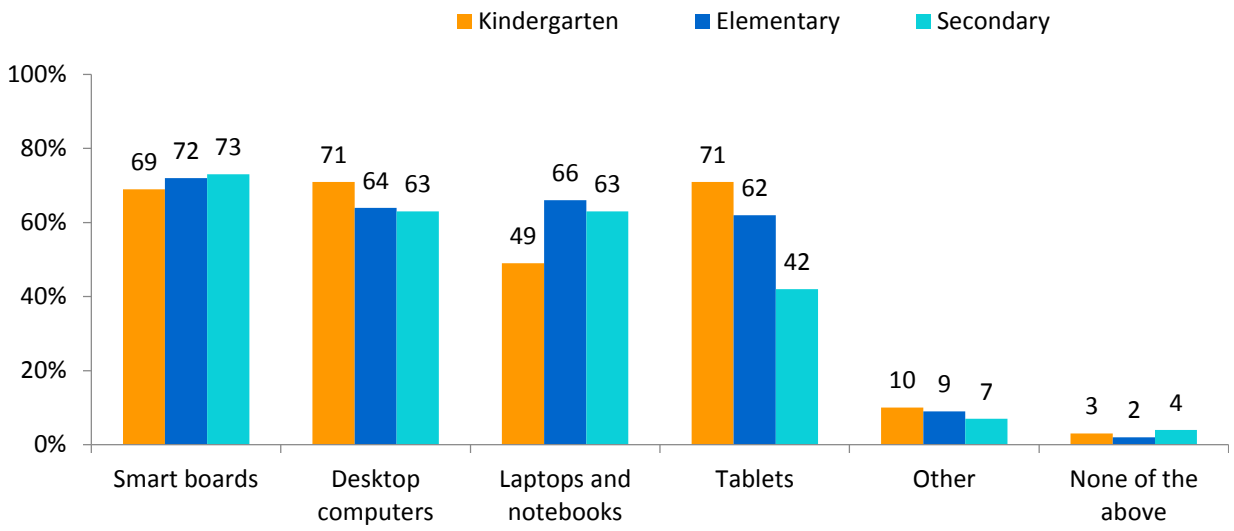


Almost all of the teachers surveyed reported that their school provided one or more networked devices to use with students for educational purposes: only three percent said that none are provided.

Overall, smart boards are the most common networked device provided by schools (72%), followed by desktop computers (65%) and laptops/notebooks (64%). Over half of teachers (56%) report that their schools provide students with tablets (e.g. iPads). Teachers at all levels are about equally likely to say that their schools provided at least one networked device.

The various networked devices we asked about are provided fairly evenly in both elementary and secondary schools, with the exception of tablets (e.g. iPads), which are more commonly provided at the elementary level (62%) than the secondary level (42%). Kindergarten teachers are most likely to report having access to desktop computers and tablets (71% for each), and least likely to be supplied with laptops and notebooks (49%).

Chart 1a-2 Networked Devices Provided by Schools: School Level



Teachers in English language schools (English schools) are less likely than those in French as a First Language Schools (French schools) to have smart boards (71% versus 81%) or laptops and notebooks (62% versus 77%) in the classroom, but they are more likely to have been supplied with tablets (58% versus 45%).

1B. INDICATE THE EXTENT TO WHICH YOU USE, WITH YOUR STUDENTS, EACH OF THE FOLLOWING NETWORKED DEVICES THAT YOU PREVIOUSLY INDICATED ARE BEING SUPPLIED BY YOUR SCHOOL.

Table 1b-1 Networked Devices Provided by Schools: Extent of Use

	Significantly	Somewhat	Not at all
Smart boards	57%	30%	13%
Desktop computers	47%	45%	8%
Laptops and notebooks	43%	45%	13%
Tablets (e.g. iPads)	28%	53%	19%
Other	46%	37%	17%

Desktop computers are still the most commonly-used classroom technology, with 92 percent of teachers saying that they use these school-supplied devices “significantly” or “somewhat”. Teachers with more than 25 years’ experience teaching in the public education system are more likely than those with fewer than five years’ experience to report using desktop

computers “significantly” (53% versus 44%).

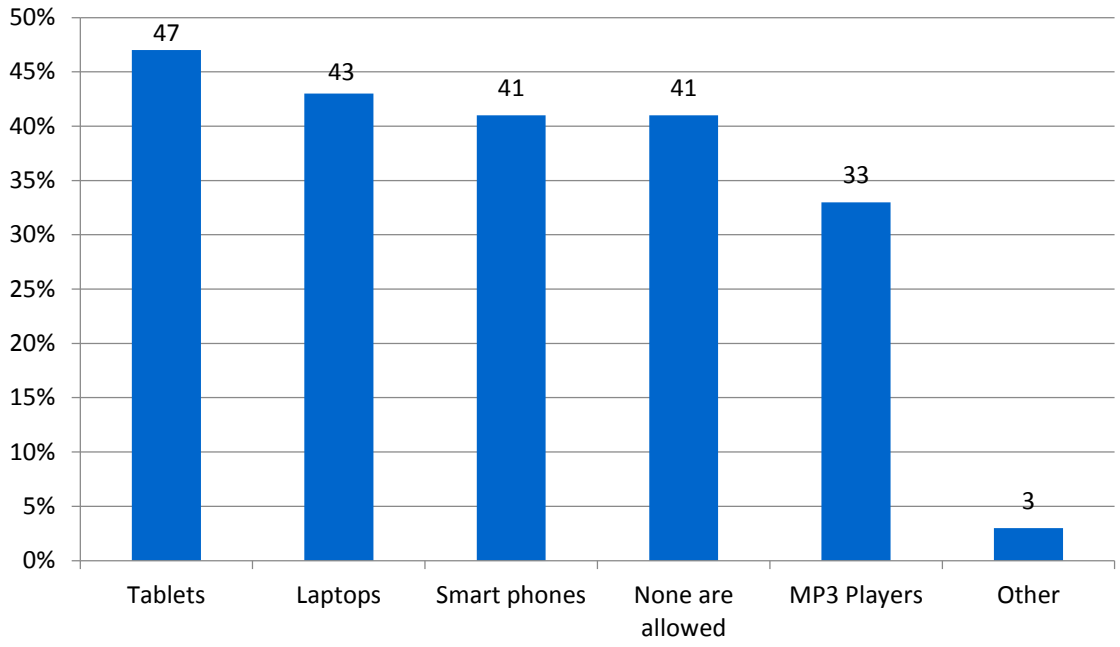
However, teachers are most likely to say that they use smart boards “significantly” (57% compared to 47% who indicated this for desktop computers). At the other end of the spectrum, tablets are the device that teachers are most likely to say they do not use: almost one in five (19%) teachers who have been provided with tablets by their schools do not use them at all. Those teachers who report that their schools provide “Other” networked devices are more likely to use these “significantly” (46%) than “somewhat” (37%), while almost one in five (17%) report not using them at all.

Compared to their colleagues who teach older grades, kindergarten teachers are *least* likely (29%) to report significant use of laptops provided by their schools (compared to 44% for elementary and 42% for secondary). The situation is reversed for tablets, with nearly 40 percent of kindergarten teachers whose schools provided them (39%) reporting significant use, compared to 30 percent of elementary and 18 percent of secondary teachers. This is consistent with the findings in 1a above, which indicate that tablets are more likely to be found in kindergarten classrooms than in elementary and secondary classrooms.

Teachers in English schools are less likely than teachers in French schools to report “significant” use of desktop computers (45% versus 57 %), as well as laptops/notebooks (41% versus 56%).

2A. WHICH OF THE FOLLOWING DEVICES OWNED BY STUDENTS ARE STUDENTS ALLOWED TO USE IN YOUR CLASSROOM FOR EDUCATIONAL PURPOSES?

Chart 2a-1 Permitted Networked Devices Supplied by Students

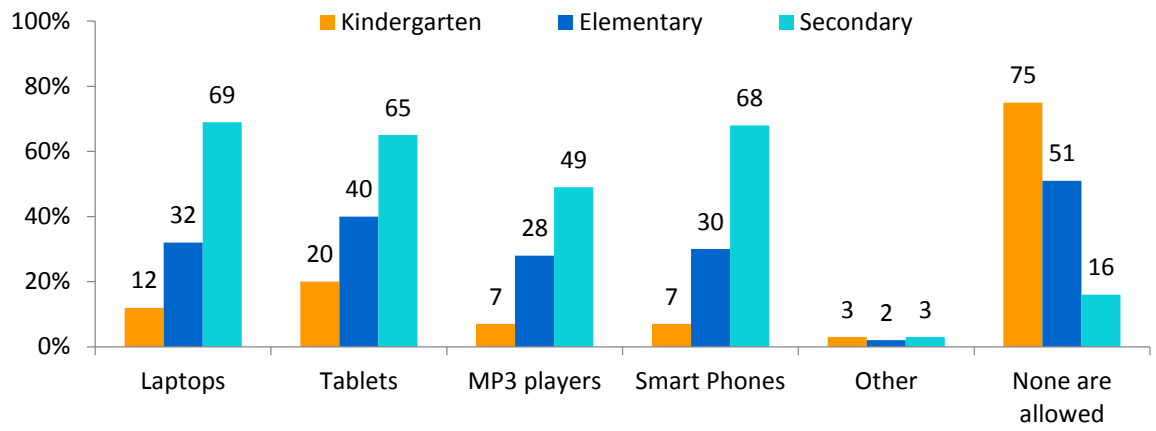


Four out of ten teachers (41%) report that their students are not permitted to use their own devices in the classroom for educational purposes.

Student-owned devices that are most often permitted are: tablets (47%), laptops (43%) and smart phones (41%). One-third of students (33%) are also allowed to use their own MP3 players in the classroom.

Students in higher school levels are much more likely than younger students to be allowed to bring a device of their own to school for educational purposes.

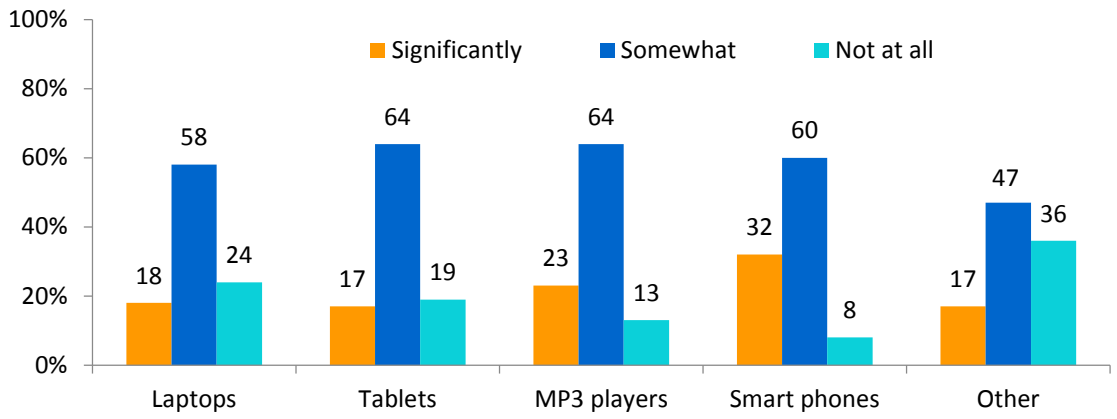
Chart 2a-2 Student-Owned Networked Devices Permitted to be Used in the Classroom for Educational Purposes: School Level



Looking at student use of personally-owned devices broken down by school level, we can see that student ages clearly play a role in which devices are used in the classroom for educational purposes: each of the examined personally-owned networked devices were far less likely to be allowed at the kindergarten level, and most likely to be permitted at the secondary level. Three-quarters of kindergarten teachers reported that personal devices are not permitted in the classroom for educational purposes, compared to half of elementary school teachers and 16 percent of secondary school teachers. However, it's important to note that whether or not students are allowed to use their own devices in class can often be outside of the control of an individual teacher, as many schools and school boards have policies on the issue.

2B. INDICATE THE EXTENT TO WHICH STUDENTS USE EACH OF THE FOLLOWING PERSONALLY OWNED NETWORKED DEVICES THAT YOU PREVIOUSLY INDICATED AS BEING THE ONE(S) ALLOWED FOR EDUCATIONAL PURPOSES IN YOUR CLASSROOM.

Chart 2b-1 Student Use of Personally-Owned Networked Devices: Overall Use



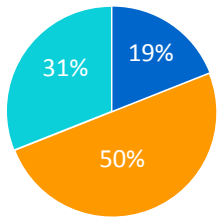
We also asked about the extent to which these devices are actually being used in the classroom for educational purposes by the students who bring them to class. The device that students are most likely to be using is their Smart phone: over nine in ten use them, including 32 percent who use it "significantly". MP3 players are the next most commonly-used device: 23 percent use it "significantly" and 64 percent use it "somewhat". The personal networked device *least* likely to be used in the classroom is a laptop: 24 percent of students who are allowed to bring these do not use them at all – although it should still be noted that over three-quarters of students (76%) are using them either "significantly" (18%) or "somewhat" (58%).

The percentage of students who do not use these respective devices declines at higher school levels, with secondary teachers reporting the largest share of students making use of each device.

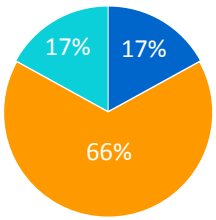
Chart 2b-2 Student Use of Specific Personally-Owned Networked Devices: Elementary and Secondary School Levels

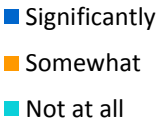
Laptops

Elementary



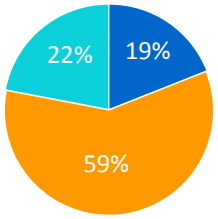
Secondary



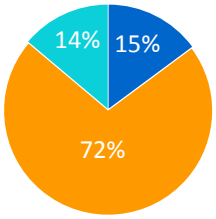


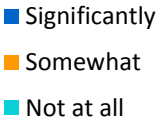
Tablets

Elementary



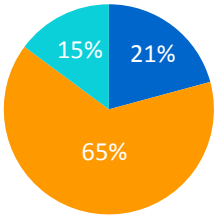
Secondary



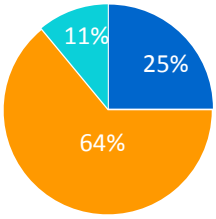


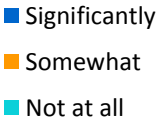
MP3 Players

Elementary

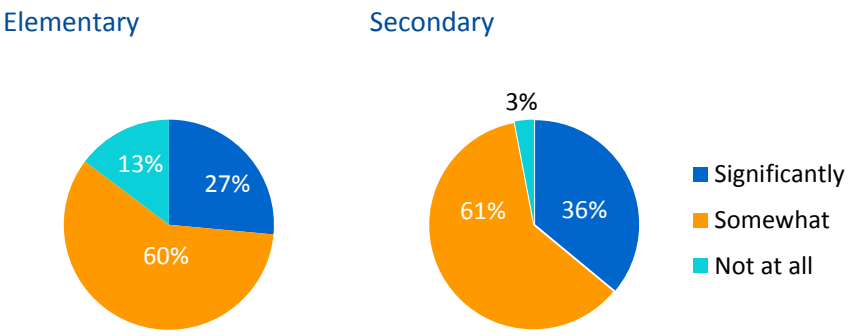


Secondary





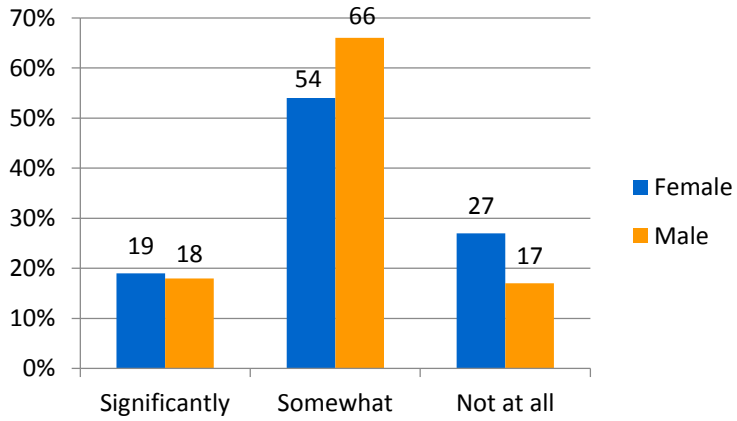
Smart Phones



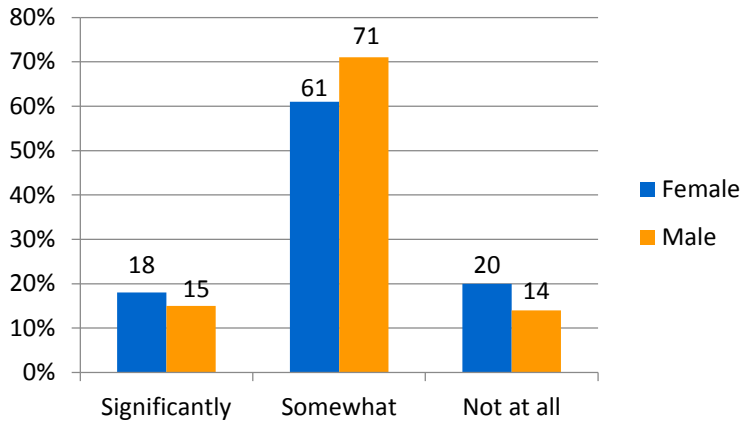
Female teachers are more likely than male teachers to say that their students do not use the networked devices on our list in their classrooms. Responses indicating "significant" use by students are very similar, but there are greater gender differences between those choosing "somewhat" and "not at all". It should be kept in mind, though, that the share of female teachers surveyed is higher in the lower school levels where devices are less permitted in the classroom and less used when they are permitted. The share of female teachers surveyed, by level, is as follows: 90 percent at the kindergarten level, 79 percent at the elementary level and 55 percent at the secondary level.

Chart 2b-3 Student Use of Specific Personally-Owned Networked Devices: Gender of Teacher

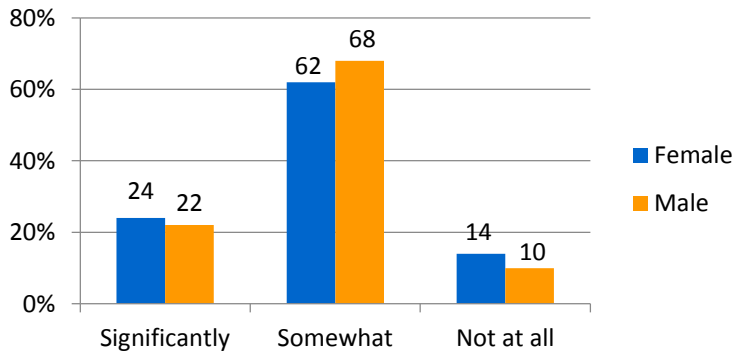
Laptops



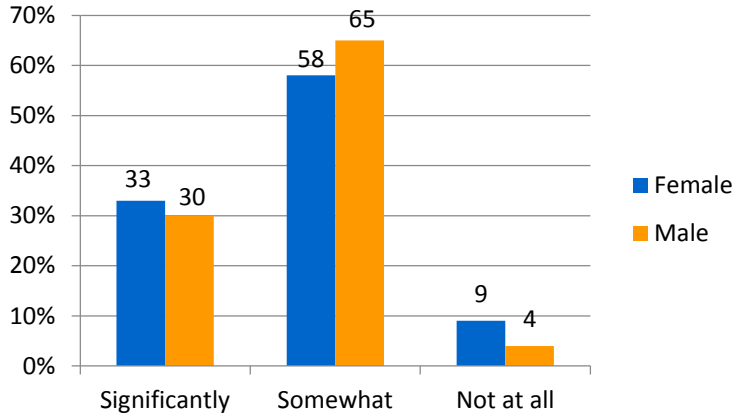
Tablets



MP3 Players



Smart Phones



Teachers with fewer than 5 years of teaching experience are twice as likely as those with 25 or more years' teaching experience to indicate that students who are allowed to use their own MP3 player in the classroom for educational purposes make use of them "significantly" (32% compared to 15%).

3. DO YOU DO ANY OF THE FOLLOWING IN YOUR CLASSROOM TO SUPPORT LEARNING?

- Break students into groups and use one or more technologies to match different learning styles
- Have students work collaboratively using a wiki or Google Docs
- Provide access to self-learning modules that allow students to proceed at their own pace
- Use social media to introduce students to broader conversations about a topic
- Use networked technologies so students can communicate with others outside the classroom as part of a learning exercise (e.g. experts, veterans, community members, students in other schools)

Table 3-1 Use of networked technologies in the classroom to support learning: Frequency

	Frequently	Occasionally	Rarely	Never
Break students into groups and use one or more technologies to match different learning styles	22%	43%	21%	14%
Have students work collaboratively using a wiki or Google Doc	11%	22%	19%	47%
Provide access to self-learning modules that allow students to proceed at their own pace	13%	27%	23%	38%
Use social media to introduce students to broader conversations about a topic	9%	23%	22%	47%
Use networked technologies so students can communicate with others outside the classroom as part of a learning exercise (e.g. experts, veterans, community members, students in other schools)	3%	15%	27%	56%

The most common use of networked technologies in the classroom is "Breaking students into groups and using one or more technologies to match different learning styles": 22 percent of teachers say they "frequently" do this and 43 percent say they "occasionally" do. The next most frequent activity, "Provide access to self-learning modules that allow students to proceed at their own pace", was selected by a much lower percentage of teachers (13% report doing this "frequently" and 27% report doing it "occasionally").

Teachers are *least* likely to use networked technologies to facilitate students communicating with others outside of the classroom as part of a learning exercise (56% report "never" doing this).

Teachers are more likely to say they do each of the listed activities only "occasionally" rather than "frequently". They are also most likely to say that they "never" do any of the listed activities, with the exception of "Breaking students into groups and using one or more technologies to match different learning styles".

Female teachers are more likely than male teachers to report never doing any of the five listed activities with their students. The biggest differences are for using networked technologies to provide students with access to self-learning modules (41% of female teachers never do this, versus 26% of male teachers) and having students work collaboratively using a Wiki or Google docs (50% of female teachers never do this, compared to 36% of male teachers).

Chart 3-1 Breaking students into groups and using one or more technologies to match different learning styles: Gender of teacher

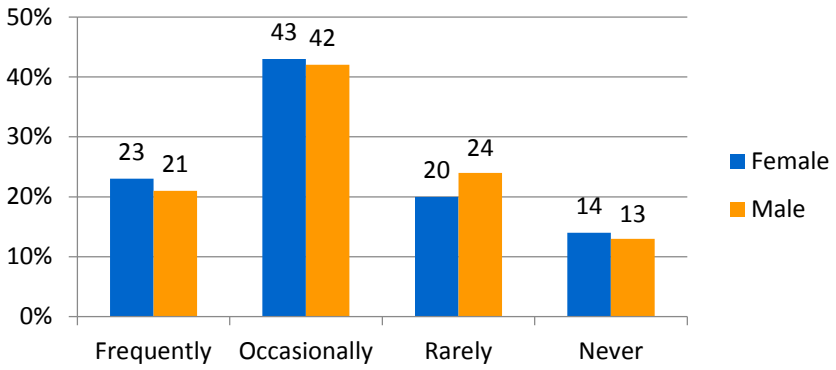


Chart 3-2 Having students work collaboratively using a wiki or Google Doc: Gender of teacher

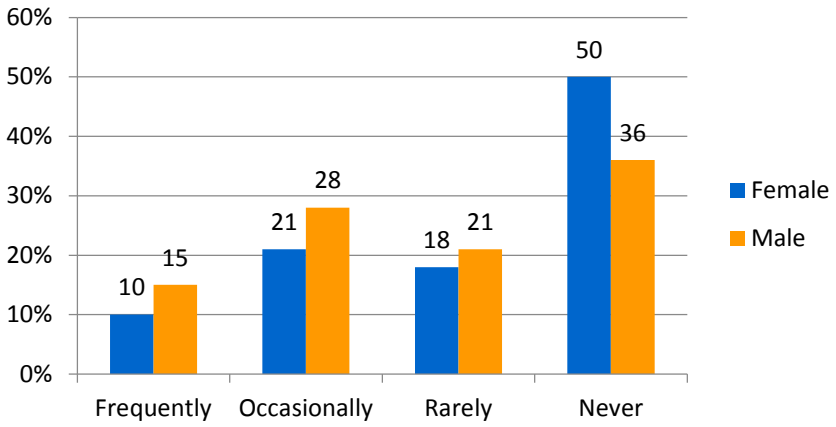


Chart 3-3 Providing access to self-learning modules that allow students to proceed at their own pace: Gender of teacher

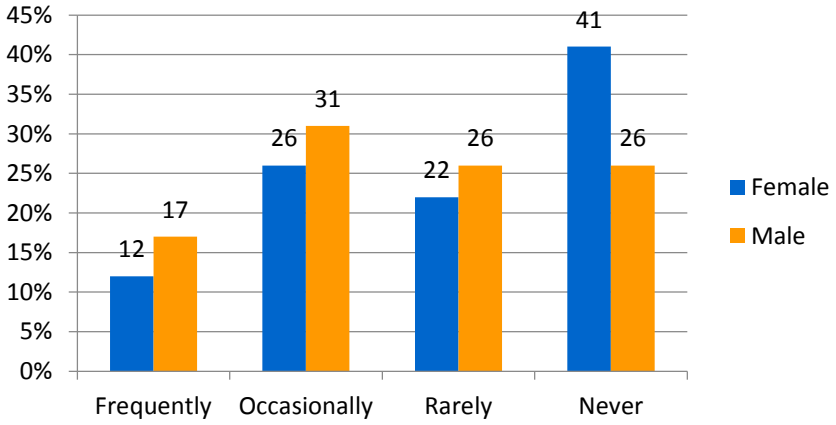


Chart 3-4 Using social media to introduce students to broader conversations about a topic: Gender of teacher

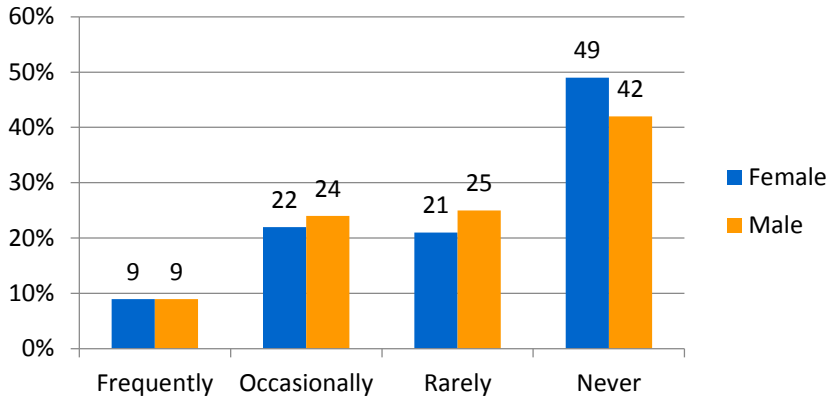
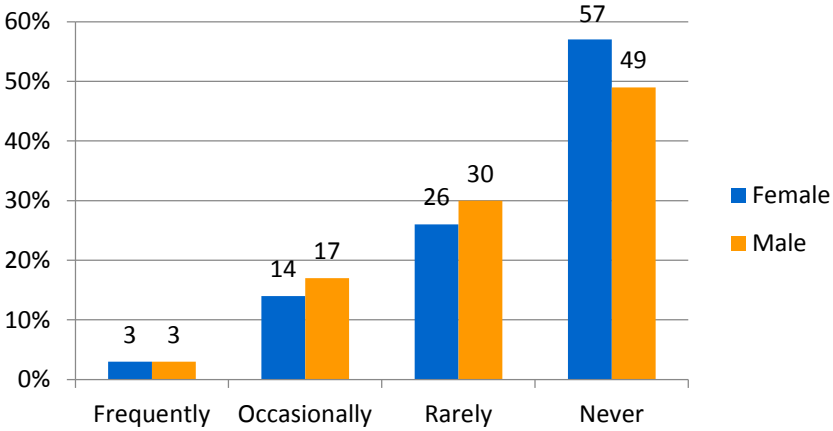


Chart 3.5 Using networked technologies so students can communicate with others outside the classroom as part of a learning exercise: Gender of teacher

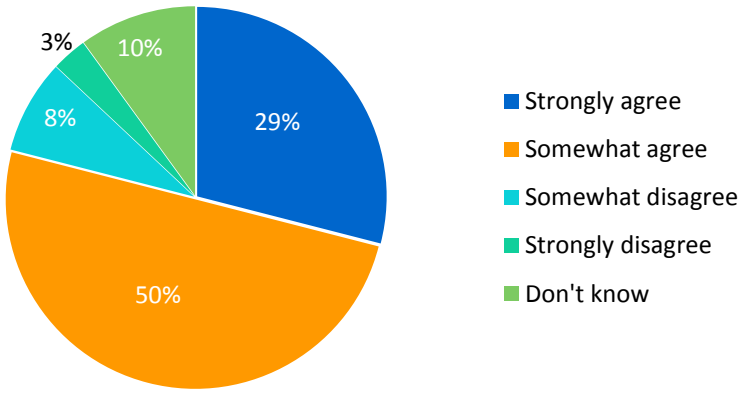


4. INDICATE THE EXTENT TO WHICH YOU AGREE WITH EACH OF THE FOLLOWING STATEMENTS:

- Networked devices make it easier for my students to learn
- Networked devices make it easier for me to match my instructional practice to students' various learning styles
- Networked devices disrupt learning in the classroom by making it difficult to maintain discipline

- Networked devices in the classroom erode the privacy and trust that is needed for students to feel confident about expressing themselves
- Considering classroom diversity, networked devices are typically being used by my students in the language of instruction

Chart 4-1 Level of agreement with statement: *Networked devices make it easier for my students to learn*

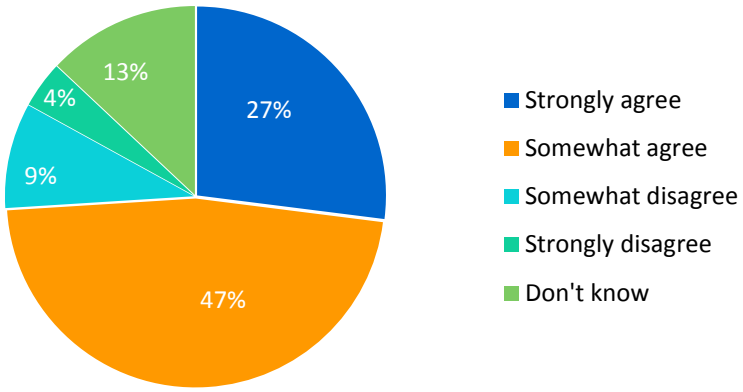


Overall, almost eight in ten teachers (79%) “strongly” or “somewhat” agree that networked devices make it easier for students to learn.

Teachers at English schools (80%) are considerably more likely than teachers at French schools (69%) to agree “strongly” or “somewhat” with this statement. Teachers at French schools (18%) are twice as likely as teachers at English schools (9%) to say that they don’t know if networked devices make it easier for their students to learn.

Although they are still in the minority overall, secondary teachers (14%) are slightly more likely than elementary (9%) and kindergarten teachers (10%) to disagree “strongly” or “somewhat” that networked devices make it easier for their students to learn.

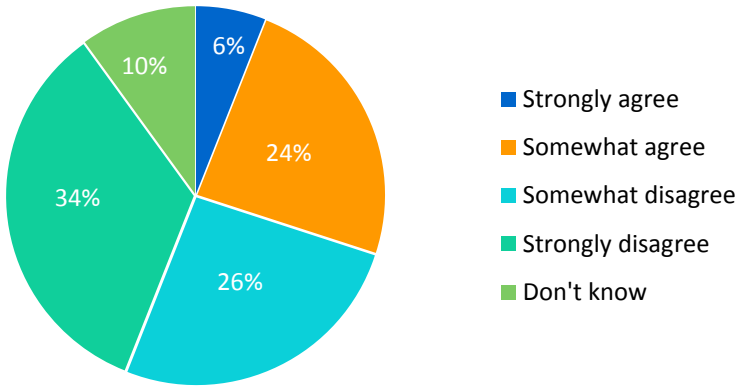
Chart 4-2 Level of agreement with statement: *Networked devices make it easier for me to match my instructional practice to students' various learning styles*



The majority of teachers (74%) agree "strongly" or "somewhat" that networked devices have helped them match their instructional practice to a variety of learning styles.

Elementary teachers (76%) are most likely to "somewhat" or "strongly" agree with this statement, compared to kindergarten (69%) and secondary teachers (71%).

Chart 4-3 Level of agreement with statement: *Networked devices disrupt learning in the classroom by making it difficult to maintain discipline*



Although the majority of teachers (60%) report that networked devices *do not* make it more difficult to maintain classroom discipline, a significant percentage (30%) report that they do disrupt classroom learning.

Male teachers are more likely than female teachers to *agree* that networked devices can make it difficult to maintain discipline (38% indicating that they "strongly" or "somewhat" agree with this, versus 28% of female teachers). Moreover, teachers of older children report more difficulties: secondary teachers (46%) are three times more likely than kindergarten teachers (16%) and twice as likely as elementary teachers (23%) to agree "strongly" or "somewhat" that networked technologies disrupt learning and make it difficult to maintain discipline.

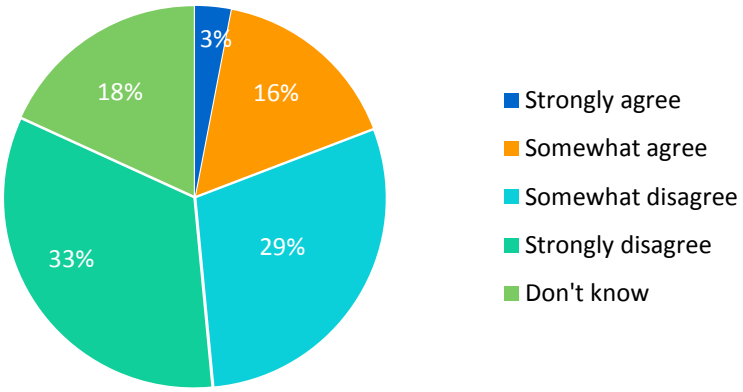
Teachers in schools with 1,000 or more students are most likely to agree with this statement: 12 percent "strongly agree" and 32 percent "somewhat agree". Teachers in schools with fewer than 250 students are more likely to "strongly" disagree (36%). This may also reflect an overlap between school size and grade level.[6] According to survey results, secondary schools are significantly more likely to be large schools, with 21 percent of them having 1,000 or more students compared to only 2 percent of elementary schools and being virtually nil at the kindergarten level.

Teacher experience is also a factor. One-third of teachers with less than five years' teaching experience agree that networked devices can make it difficult to maintain discipline in the classroom, compared to one-quarter of those with more than twenty-five years' experience.

Teachers at French schools (24%) are less likely than teachers at English schools (31%) to say that networked devices disrupt learning and make it difficult to maintain discipline.

[6] See the Note on interpretation on p. 14 above.

Chart 4-4 Level of agreement with statement: *Networked devices in the classroom erode the privacy and trust that is needed for students to feel confident about expressing themselves*

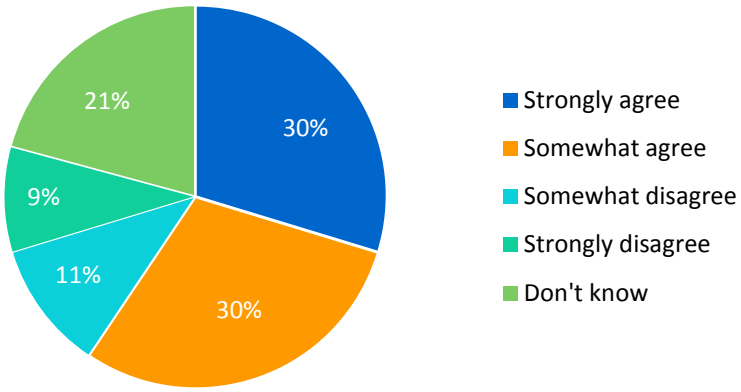


Overall, most teachers *do not* agree that networked devices in the classroom erode trust and privacy (62%) and only a small percentage (3%) "strongly agree" with this statement. At the same time, close to one-fifth (18%) indicate that they don't know.

Teachers in French schools (27%) are considerably more likely than teachers in English schools (17%) to indicate that they "don't know" whether this is so.

Secondary teachers (27%) are more likely than kindergarten (16%) and elementary teachers (16%) to agree "strongly" or "somewhat" that networked devices erode privacy and trust for free expression in the classroom.

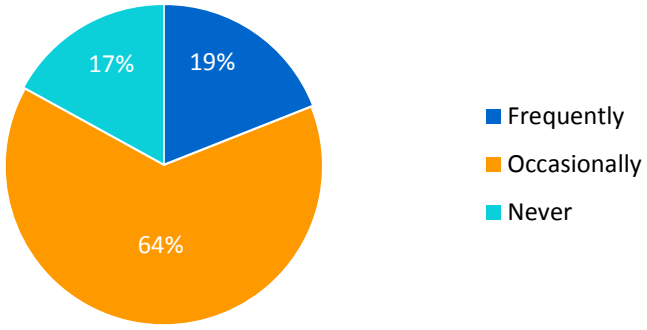
Chart 4-5 Level of agreement with statement: *Considering classroom diversity, networked devices are typically being used by my students in the language of instruction*



Most teachers agree (30% strongly and 30% somewhat) that students are using networked devices in the language of instruction. However one-fifth indicate that they don't know if this is true or not.

Teachers in French schools (32%) are much more likely than teachers in English schools (18%) to disagree "strongly" or "somewhat" that networked devices are typically being used by their students in the language of instruction. This may be because many online resources are not available in French.

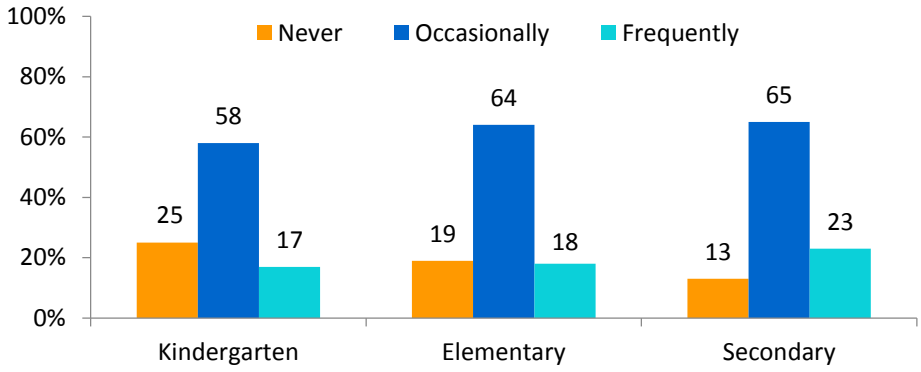
Chart 5 -1 Frequency of educational websites being blocked by school/board filter



Overall, 83 percent of teachers have had websites they've wanted to use blocked by school or board filters. This is most often an occasional occurrence but for close to one-fifth of teachers this happens frequently.

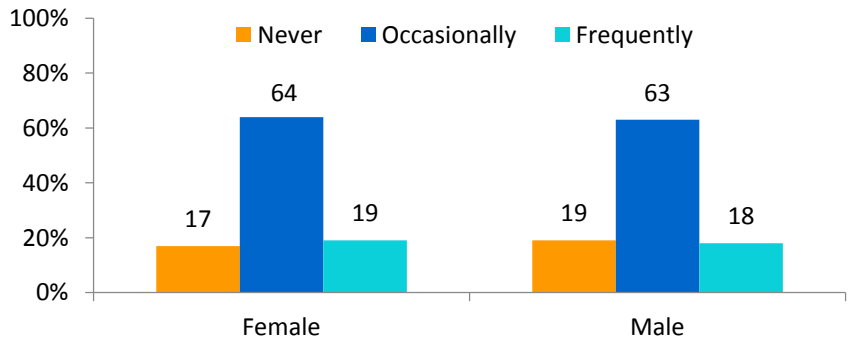
Secondary teachers are somewhat more likely to report websites being "occasionally" or "frequently" blocked (87%) than elementary teachers (82%). Three-quarters of kindergarten teachers (75%) have experienced being unable to access sites they want to use due to school or district filters.

Chart 5-2 Frequency of educational websites being blocked by school/board filter: School level



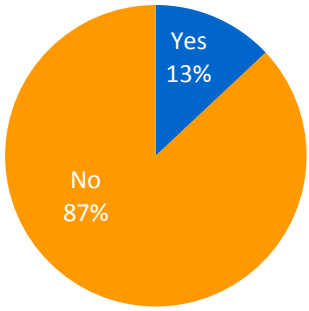
Interestingly, considering the overlap between gender and school level in other questions, male and female teachers report almost no difference in how often they are unable to access sites they want to use due to school or district filters.

Chart 5-3 Frequency of educational websites being blocked by school/board filter: Gender of teacher



6A. DO YOU USE ANY SOCIAL NETWORKING PLATFORMS IN THE CLASSROOM FOR EDUCATIONAL PURPOSES?

Chart 6a-1 Use of social networking for educational purposes



Overall, only a small percentage of teachers (13%) have used social networking in their classrooms for educational purposes. Teachers who have are most likely to "frequently" or "occasionally" use Twitter (58%), a specific social networking platform designed for teachers or schools (51%) or Facebook (30%). Of the platforms that were listed, Instagram (12%) and Tumblr (5%) are the least likely to be used.

6B. DO YOU USE ANY SOCIAL NETWORKING PLATFORMS IN THE CLASSROOM FOR EDUCATIONAL PURPOSES?

Chart 6b-1 Indicate how often you have used each of the following social networked platforms in your classroom for educational purposes

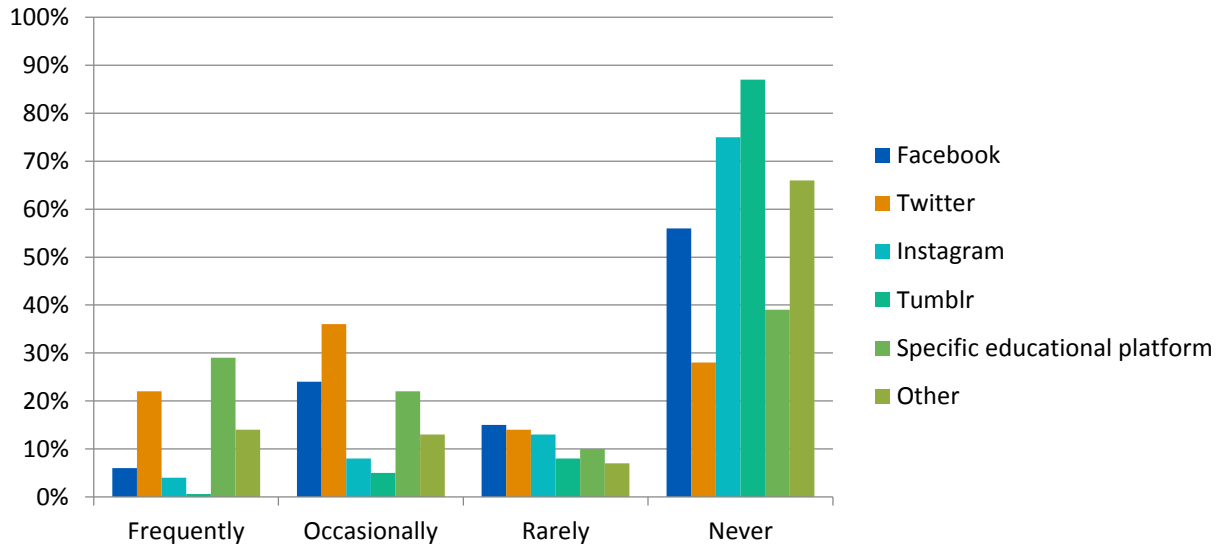


Table 6b-1 Indicate how often you have used each of the following social networked platforms in your classroom for educational purposes

	Frequently	Occasionally	Rarely	Never
Facebook	6%	24%	15%	56%
Twitter	22%	36%	14%	28%
Instagram	4%	8%	13%	75%
Tumblr	0.6%	5%	8%	87%
A specific social networking platform designed for teachers or schools	29%	22%	10%	39%
Other	14%	13%	7%	66%

When asked to specify those social networking platforms used in the classroom that are not included in the list provided, blogging was the most common platform/activity mentioned. Of the specific blogging platforms that were noted, Kidblog was most commonly referenced. The next most popular platforms specifically mentioned are Edmodo, Google,[7] Pinterest and Remind.

There was no difference in the overall use of social networking platforms in the classroom for educational purposes between teachers in urban and rural schools (at 13% each). However, there was a significant difference in terms of the frequency of use in some cases, including teachers who use ("frequently" or "occasionally") Facebook (25% urban, 40% rural) and specific social networking platforms designed for teachers or schools (56% urban, 41% rural), and a smaller difference for teachers who use Instagram (14% urban, 8% rural).

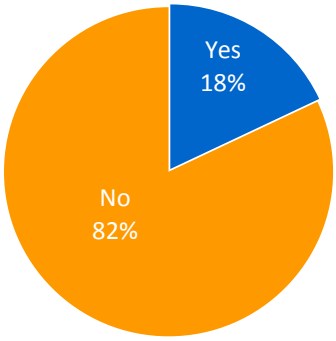
Teachers in English schools (14%) are twice as likely as teachers in French schools (7%) to report using social networking platforms in the classroom for educational purposes.

[7] Including Google Hangouts, Google Docs, Google Classroom, Google Groups and Google Plus.

SOCIAL NETWORKING OUTSIDE OF THE CLASSROOM FOR EDUCATIONAL PURPOSES

7. DO YOU USE ANY TYPES OF SOCIAL NETWORKING TO COMMUNICATE WITH STUDENTS OUTSIDE THE CLASSROOM FOR EDUCATIONAL PURPOSES?

Chart 7-1 Use of social networking to communicate with students for educational purposes outside of the classroom



The use of social networking to communicate with students outside the classroom for educational purposes is still low, with fewer than one in five teachers (18%) reporting that they are used.

Secondary teachers (25%) are significantly more likely than elementary teachers (15%) and kindergarten teachers (11%) to use social networking to communicate with students outside of the classroom for educational purposes. School size also plays a role: 15 percent of teachers in schools with fewer than 250 students compared to 28 percent of teachers in schools with more than 1000 students report using social networking to communicate with students outside of the classroom for educational purposes. Again, this may reflect the developmental differences between younger and older students and the fact that secondary schools generally have larger populations than elementary schools.

Teachers who answered ‘yes’ to using social networking to communicate with students outside of the classroom for educational purposes were also asked a follow-up question about their specific use of school district e-learning portals, email, class websites, school intranets or ‘other’ networked technologies for this purpose: most of these teachers report using (“frequently” or “occasionally”) email (71%) or a class website (61%). The technologies they are least likely to

use are school district e-learning portals (36%) and school intranets (23%), although this may be because not all teachers have access to these platforms.

Chart 7-2 Indicate how often you use each of the following networked technologies to communicate with students outside the classroom for educational purposes

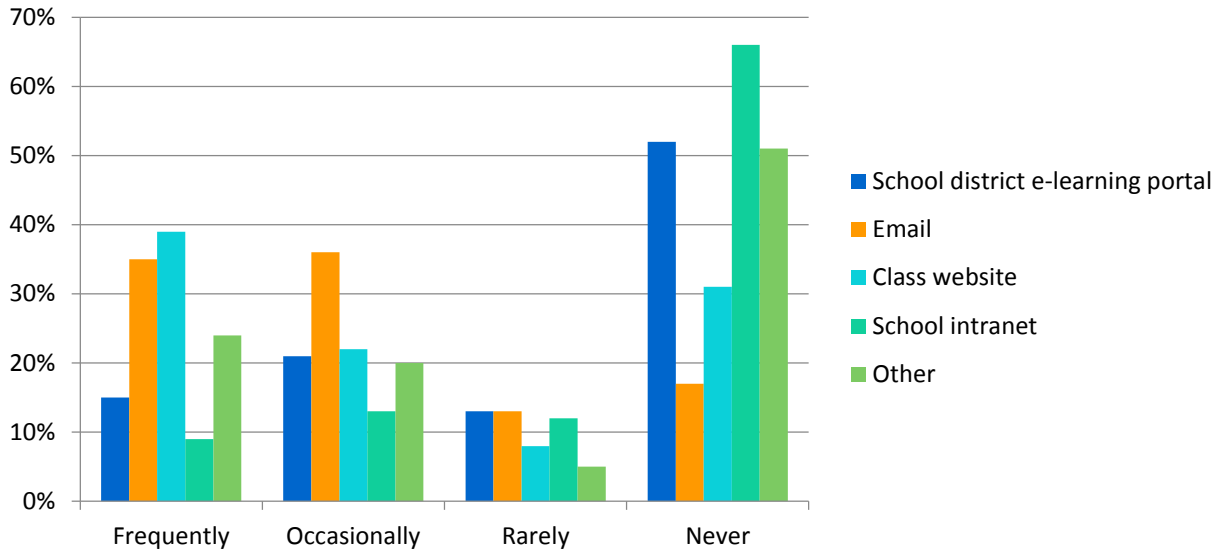


Table 7-1 Indicate how often you use each of the following networked technologies to communicate with students outside the classroom for educational purposes

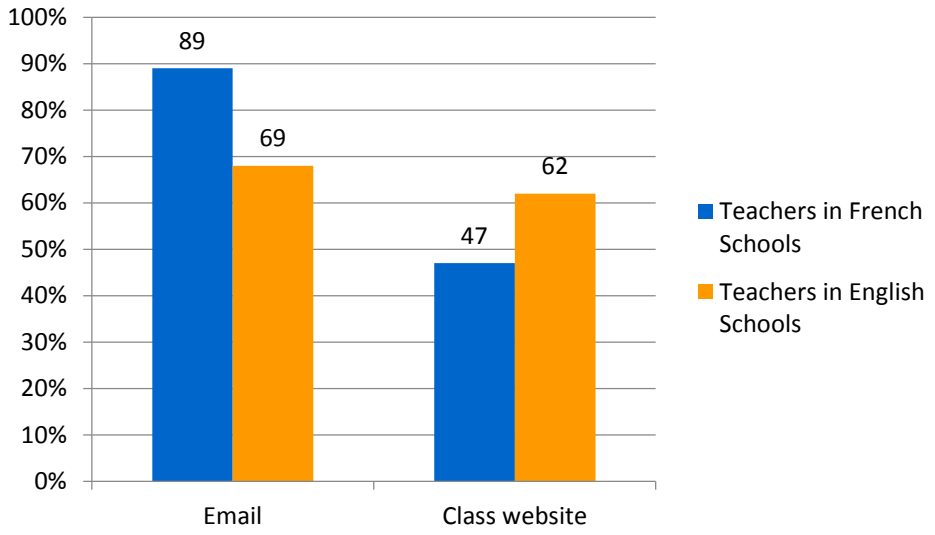
	Frequently	Occasionally	Rarely	Never
School District e-learning portal	15%	21%	13%	52%
Email	35%	36%	13%	17%
Class website	39%	22%	8%	31%
School intranet	9%	13%	12%	66%
Other	24%	20%	5%	51%

Over four in ten (43%) teachers indicated that they "frequently" or "occasionally" communicate with students using "other" technologies. Platforms most often mentioned include Remind, Edmodo, Facebook, various Google platforms and blogs.

Teachers in English schools are more likely (19%) than teachers in French schools (12%) to indicate that they use social networking to communicate with students outside of the classroom for educational purposes. However, teachers in French schools tend to use email more than their English school counterparts – combining "frequent" and "occasional" use, teachers in both French and English schools are most likely to communicate with their students

through email (89% and 69% respectively) followed by communicating via a class website (47% versus 62%).[8]

Chart 7-3 Most-used[9] networked technologies for communicating with students for educational purposes outside of the classroom: Teachers in French schools & teachers in English schools

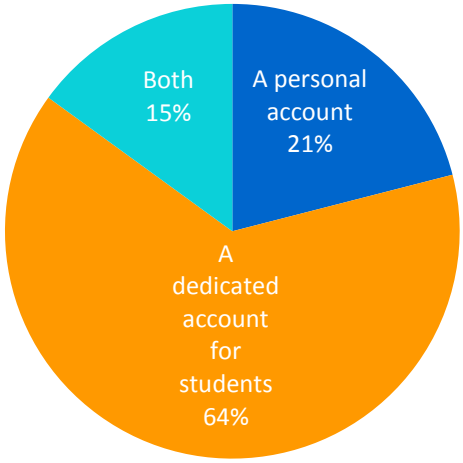


[8] Data for this subset based on 62 respondents from French language schools and 649 respondents from English language schools.

[9] Includes responses "Frequently" and "Occasionally"

8. WHICH OF THE FOLLOWING SOCIAL NETWORKING ACCOUNTS DO YOU USE OUTSIDE THE CLASSROOM TO COMMUNICATE WITH YOUR STUDENTS FOR EDUCATIONAL PURPOSES: YOUR PERSONAL ACCOUNT, A DEDICATED ACCOUNT FOR STUDENTS, BOTH OF THE ABOVE?

Chart 8-1 Use of social networking to communicate with students for educational purposes outside of the classroom: Personal versus dedicated accounts



The majority of teachers (64%) who use social networking to communicate with students outside the classroom for educational purposes solely use a dedicated account for this purpose, in effect keeping a wall between their professional use and their personal use. However, the remaining third either solely use a personal social networking account (21%) or both a dedicated account and a personal account (15%) to communicate with students.

The desire to maintain a certain distance from students is more prevalent in larger schools and in urban centers. The sole use of personal accounts is lowest in schools with over 1,000 students (15%), compared to schools with fewer than 250 students (21%).

Urban teachers (16%) are almost half as likely as rural teachers (29%) to say that they only use their personal social networking accounts to communicate with students outside of the classroom for educational purposes.

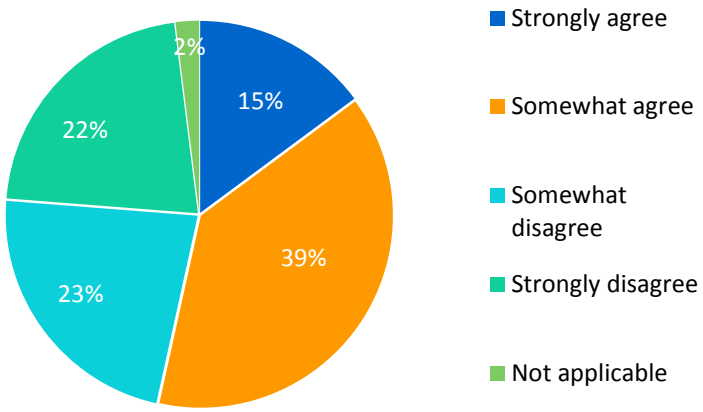
Teachers with less teaching experience are more likely to solely use a dedicated account to connect with students outside the classroom for educational purposes. Almost seven in ten (69%) teachers with fewer than 5 years of teaching experience do so, compared to just over

half (54%) of teachers with more than 25 years of experience. Close to one-third (30%) of teachers with more than 25 years teaching experience indicate that they solely use their personal account.

Use of a dedicated account is still the approach of choice for a majority of teachers at all grade levels (69% of elementary teachers and 61% of secondary teachers report solely using this type of account).

9. INDICATE THE EXTENT TO WHICH YOU AGREE WITH THE FOLLOWING STATEMENTS:

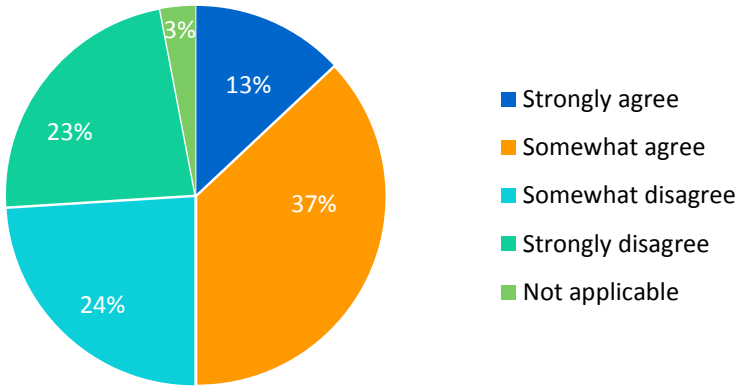
Chart 9-1 Agreement with the statement: *I have sufficient support in my school/district to help me learn how to use various kinds of networked technologies*



Slightly more than half of teachers (54%) agree “strongly” or “somewhat” that their school/district provides sufficient support and training on how to use networked technologies.

Teachers in English schools (55%) are more likely than teachers in French schools (45%) to feel this way. However, the largest portion of teachers in both groups indicate that they only agree “somewhat” that the support they receive is sufficient (40% for English, 32% for French).

Chart 9-2 Agreement with the statement: *I have sufficient support in my school/district to enable me to use various kinds of networked technologies to meet curricular goals*

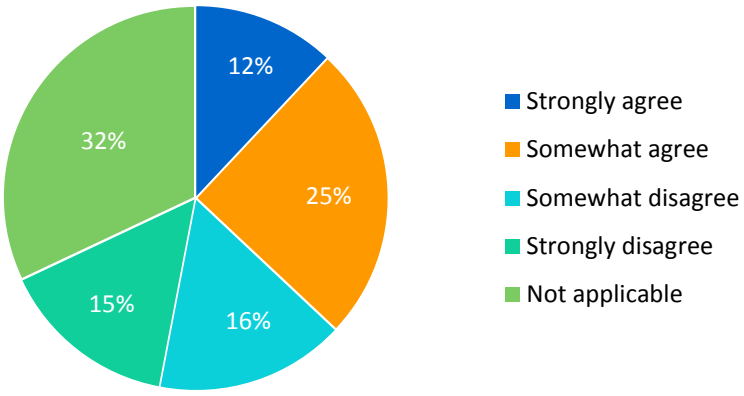


A similar percentage (50%) also report that they receive sufficient support to help them use networked technologies to meet curricular goals. The other half – those teachers who disagree that support in this regard is sufficient – are split fairly evenly between those who "somewhat disagree" (24%) and those who "strongly" disagree (23%).

Male teachers are more likely to report that they receive enough support (58% "strongly" or "somewhat" agree, whereas 40% "strongly" or "somewhat" disagree). Female teachers are more equally divided: although 49 percent agree "strongly" or "somewhat", the same percentage disagrees "strongly" or "somewhat".

The breakdown among teachers in different grade levels is more evenly divided: 50 percent of kindergarten teachers, 48 percent of elementary teachers and 54 percent of secondary teachers report the support they receive is sufficient and 44 percent of kindergarten teachers, 49 percent of elementary teachers and 44 percent of secondary teachers disagree.

Chart 9-3 Agreement with the statement: *When students experience online conflict, my administration provides me with excellent support to help me assist students in dealing with the issue*



Teachers are more likely to agree (37%) than disagree (31%) that they have sufficient support from administration when students experience online conflict. However, that agreement is somewhat tempered by the fact that over twice as many (25%) of those who agree indicate that they only agree "somewhat" compared to the 12 percent who agree "strongly".

At the same time, 31 percent feel that support is not sufficient, and almost one-third felt the question was "not applicable" to them. Teachers in French schools are particularly likely to indicate this (47% compared to 30% of teachers in English schools).

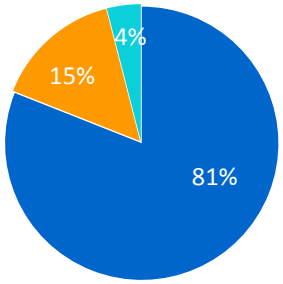
Male teachers (44%) are more likely than female teachers (36%) to indicate that they "strongly" or "somewhat" agree that they receive excellent support from their administration in this regard. Rural teachers (41%) are more likely to say so than urban teachers (34%).

However, the split between those urban teachers who agree and those who disagree is practically non-existent (34% agree, 33% disagree) while the split among rural teachers is much larger (41% agree, 29% disagree).

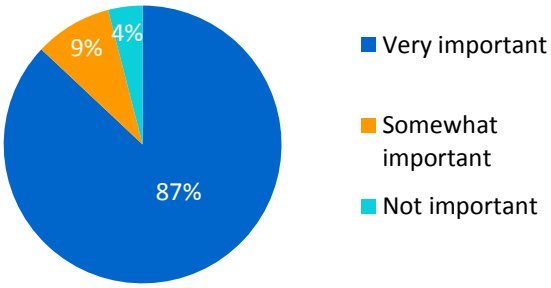
10. HOW IMPORTANT IS IT THAT YOUR STUDENTS LEARN ABOUT EACH OF THE FOLLOWING TOPICS:

Chart 10-1 Importance of students learning about Internet topics

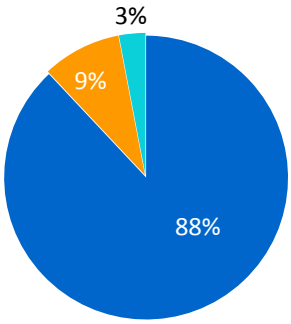
Searching for online information



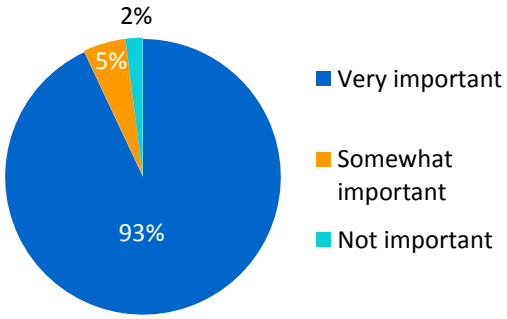
Verifying that online information is credible/relevant/accurate



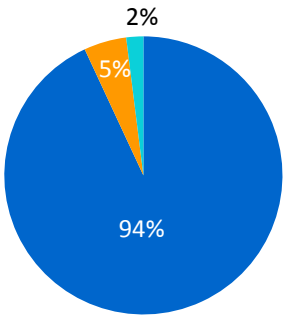
Understanding online privacy issues and settings



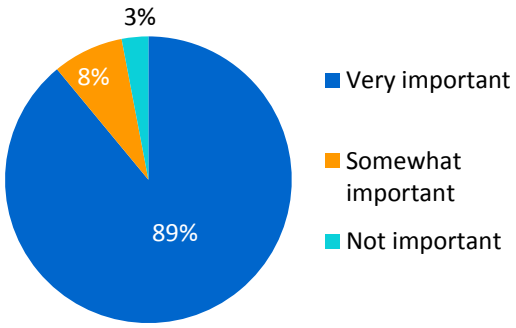
Appropriate online behaviour



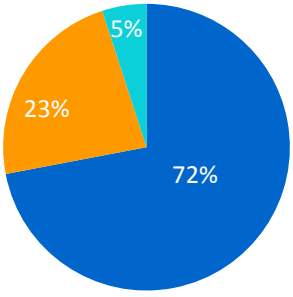
Staying safe online



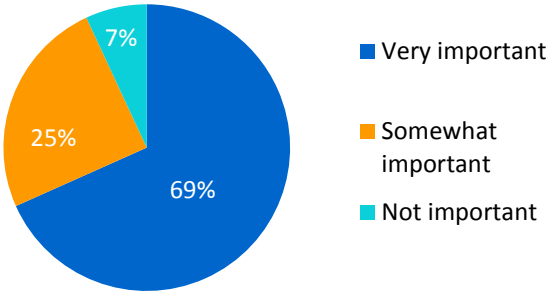
Dealing with cyberbullying



Deconstructing various messages (e.g. advertising and stereotypes) embedded in the online environment



Understanding how organizations (e.g. companies) collect and use personal information online



Teachers consider all of the digital literacy skills that were listed important to students, though some rank more highly than others.

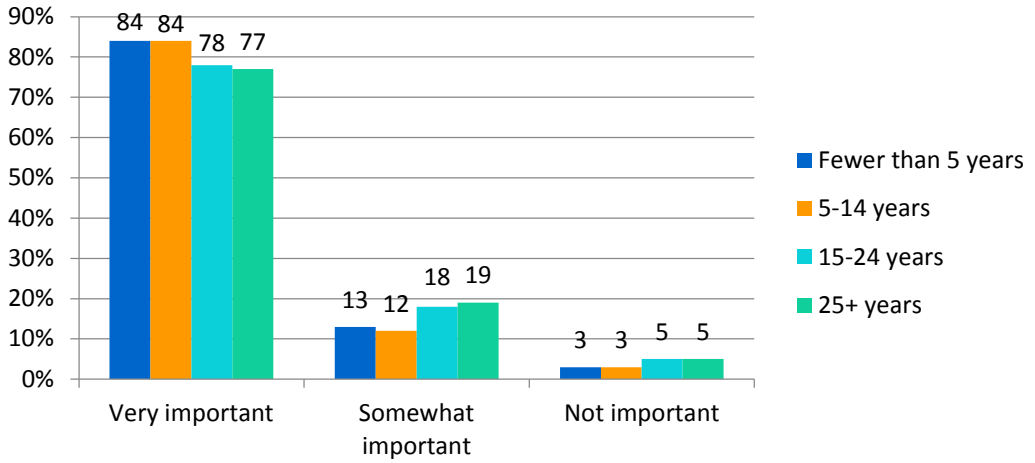
Table 10-1 Importance of students learning about Internet topics: Identified as being "very important"

Topics in order of importance (based on being identified as being 'very' important)	
1. Staying safe online	94%
2. Appropriate online behaviour	93%
3. Dealing with cyberbullying	89%
4. Understanding online privacy issues and settings	88%
5. Verifying that online information is credible/relevant/accurate	87%
6. Searching for online information	81%
7. Deconstructing various messages (e.g. advertising and stereotypes) embedded in the online environment	72%
8. Understanding how organizations (e.g. companies) collect and use personal information online	69%

The vast majority of teachers report that it is "very" important that students learn how to stay safe online, behave appropriately online, deal with cyberbullying, understand the privacy implications of their actions and verify the content they find online (94-87%). Interestingly, even though helping students to understand online privacy issues and settings rank relatively high (#4 at 88%), helping students understand how organizations collect and use personal information online comes in last (#8 at 69%).

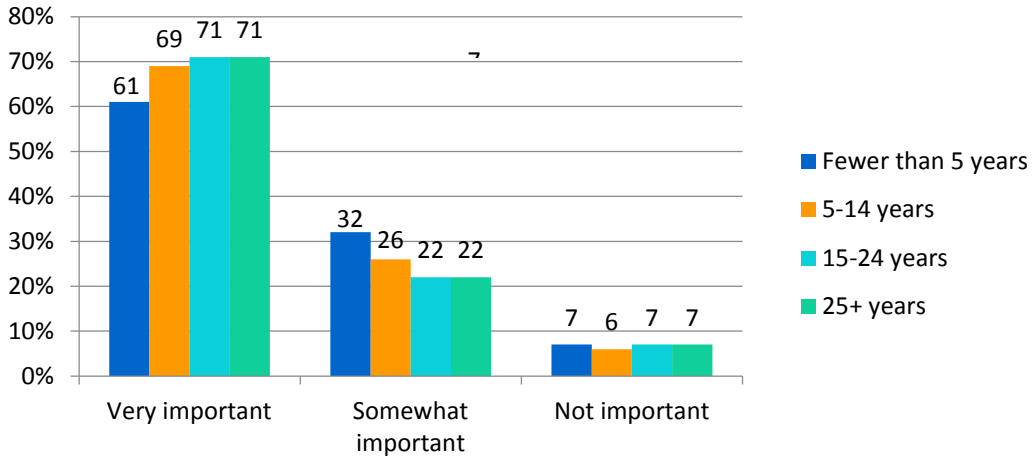
There was some discrepancy in years of teaching experience and the rankings: teachers with the most teaching experience are slightly less likely than teachers with fewer years teaching experience to rank their students knowing how to "search for online information" as being "very" important:

Chart 10-2 Importance of students learning how to search for online information: Years of teaching experience



Teachers with more experience are more likely than teachers with the least experience (fewer than five years) to rate students' understanding of how organizations collect and use personal information online as being "very" important:

Chart 10-3 Importance of students understanding how organizations collect and use personal information: Years of teaching experience



There are also differences in how teachers in French and English schools ranked these issues:

Chart 10-4 Importance of students learning how to search for online information: English and French-language schools

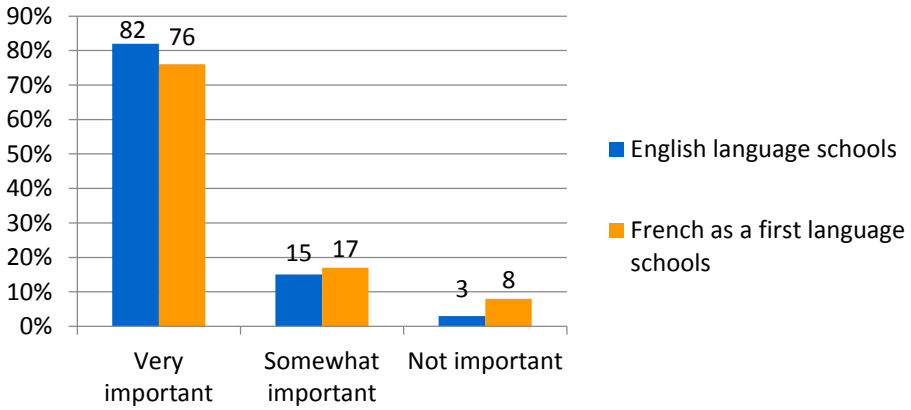


Chart 10-5 Importance of students learning how to verify that online information is credible/relevant/accurate: English and French-language schools

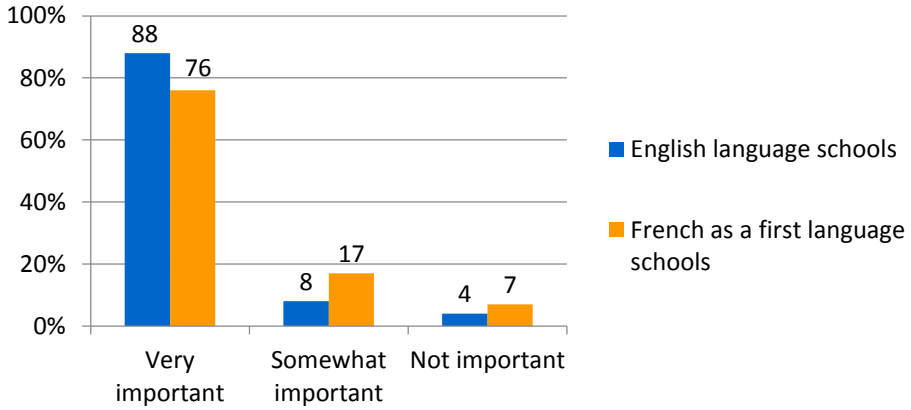


Chart 10-6 Importance of students understanding online privacy issues and settings: English and French-language schools

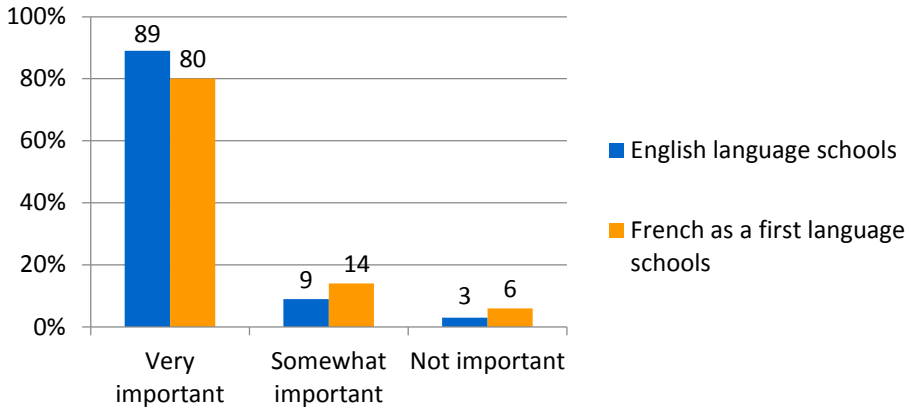
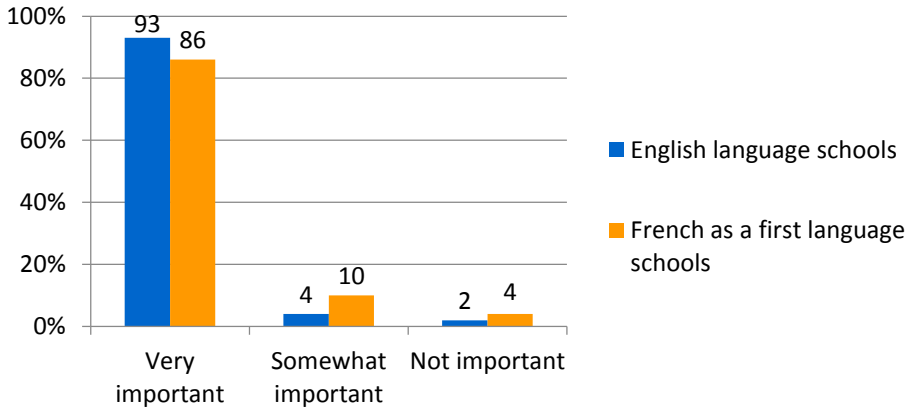


Chart 10-7 Importance of students learning about appropriate online behaviour: English and French-language schools



In general, kindergarten teachers ranked all topics as being significantly less important than elementary or secondary teachers did. Interestingly, though, elementary and secondary teachers ranked most topics at similar levels (though secondary teachers rated them slightly higher).

Chart 10-8 Importance of students learning how to search for online information: School levels

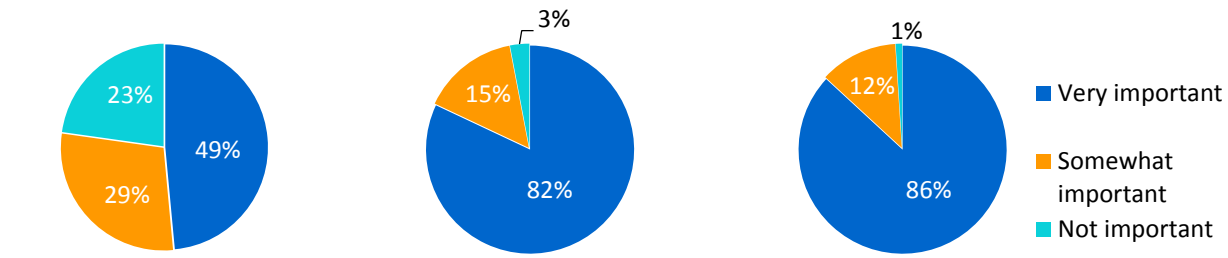


Chart 10-9 Importance of students learning how to verify that online information is credible/relevant/accurate: School levels

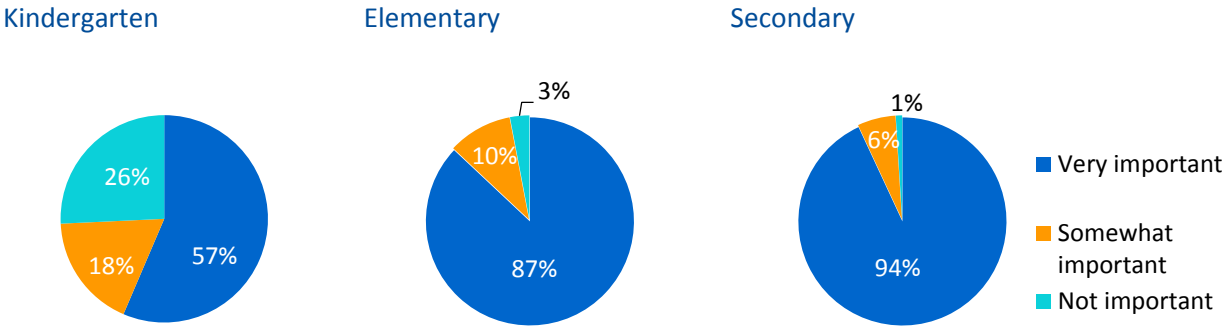


Chart 10-10 Importance of students understanding online privacy issues and settings: School levels

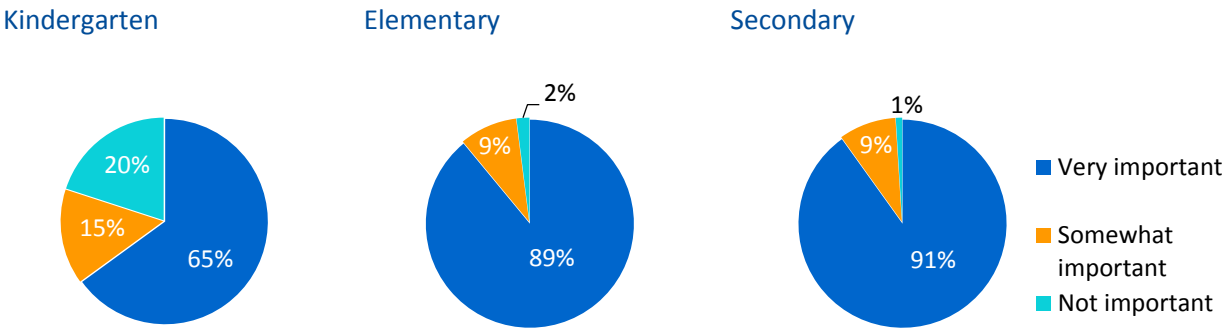


Chart 10-11 Importance of students learning appropriate online behaviour: School levels

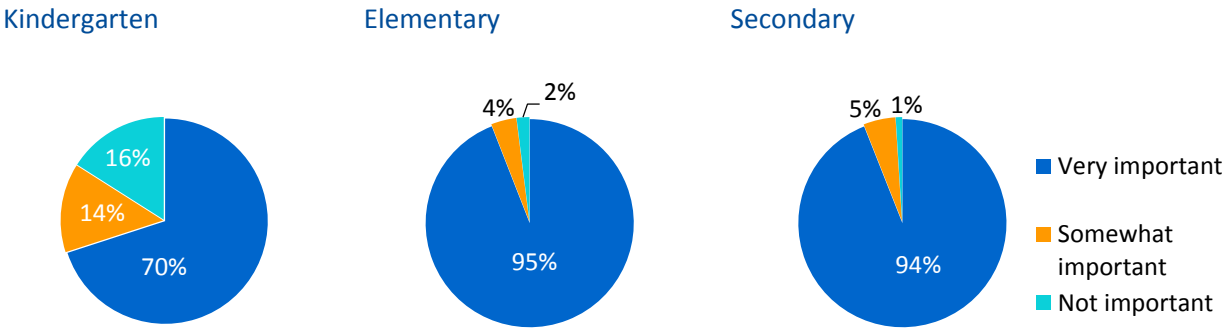


Chart 10-12 Importance of students learning how to stay safe online: School levels

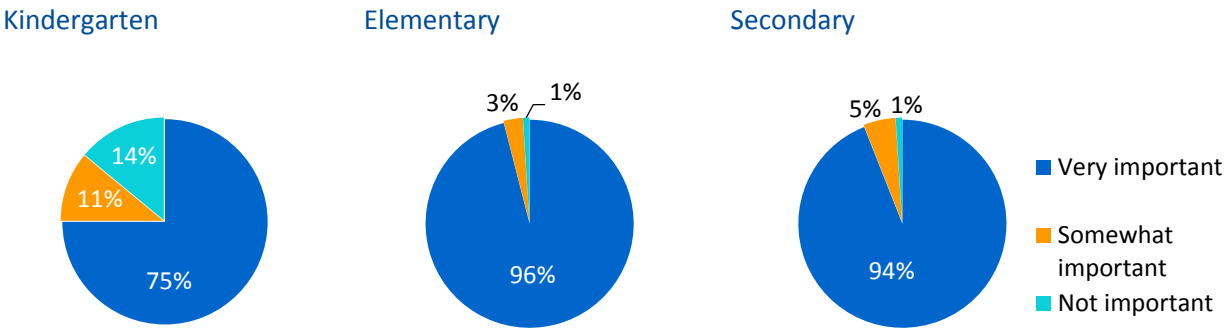


Chart 10-13 Importance of students learning how to deal with cyberbullying: School levels

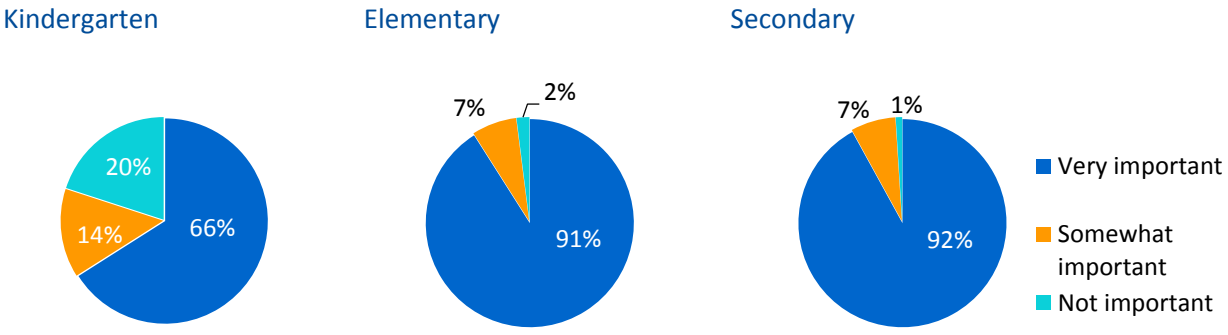


Chart 10-14 Importance of students learning how to deconstruct various messages embedded in the online environment: School levels

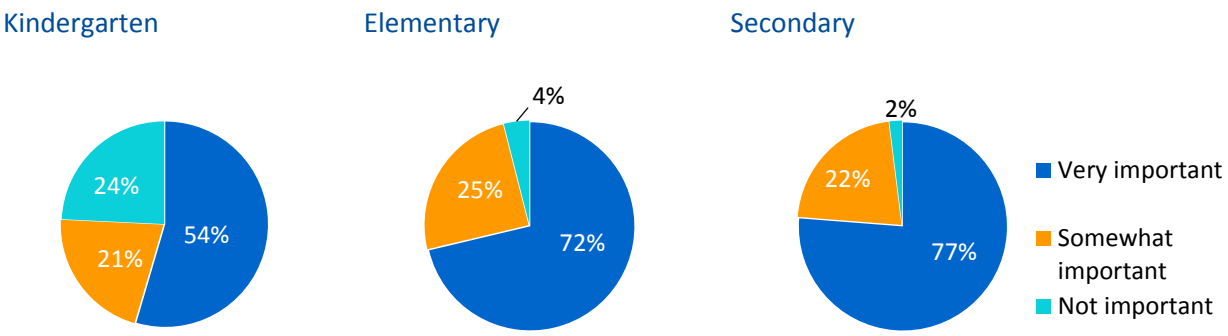
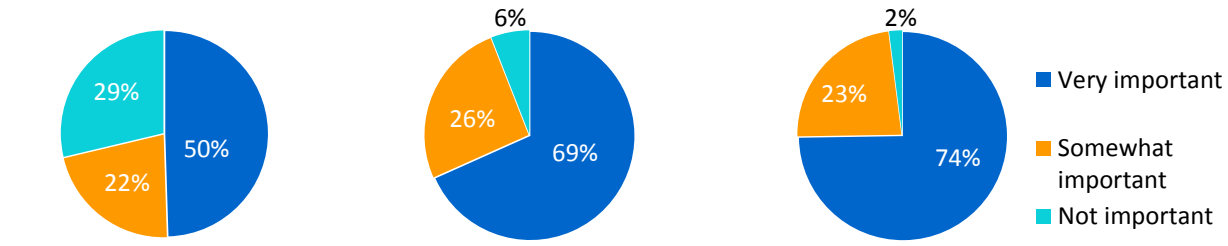


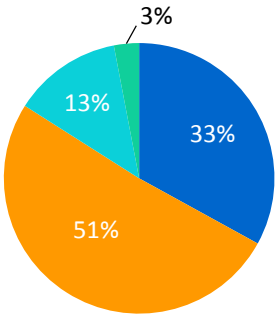
Chart 10-15 Importance of students understanding how organizations collect and use personal information online: School levels



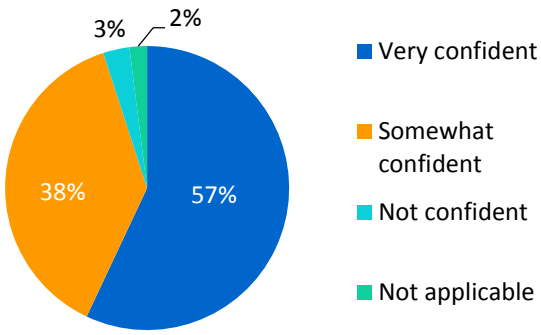
11. HOW CONFIDENT DO YOU FEEL ABOUT YOUR KNOWLEDGE AND SKILLS WITH RESPECT TO TEACHING YOUR STUDENTS ABOUT EACH OF THE FOLLOWING?

Chart 11-1 Confidence in teaching Internet topics

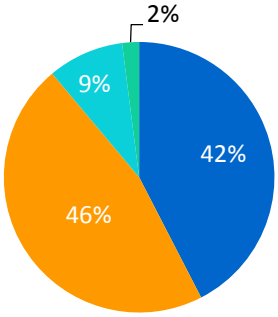
Understanding school/school board policies regarding online access in the classroom



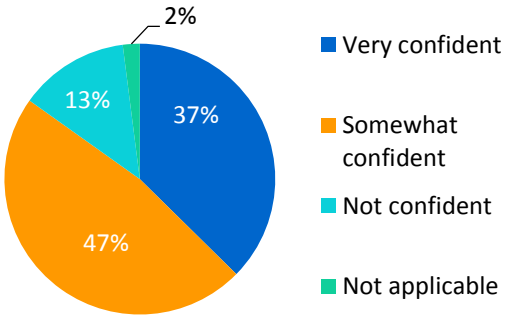
Searching for online information



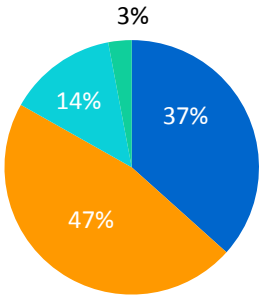
Verifying that online information is credible/relevant/accurate



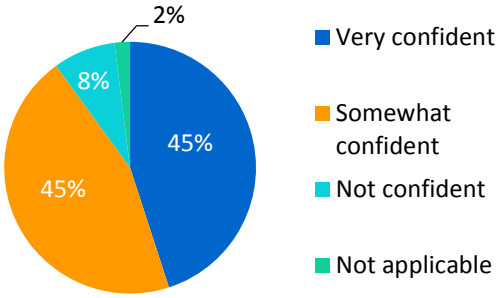
Understanding online privacy issues and settings



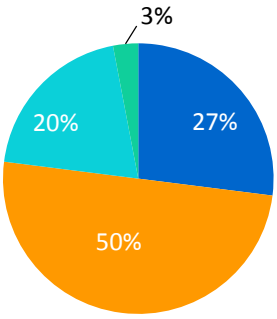
Knowing what is legal and illegal online



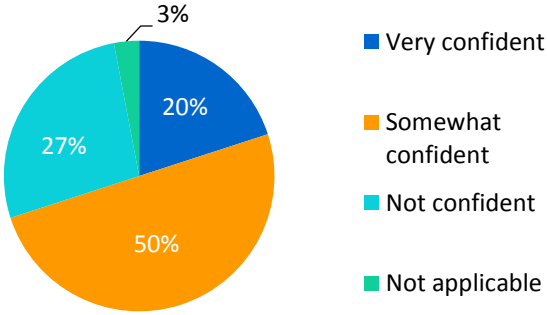
Staying safe online



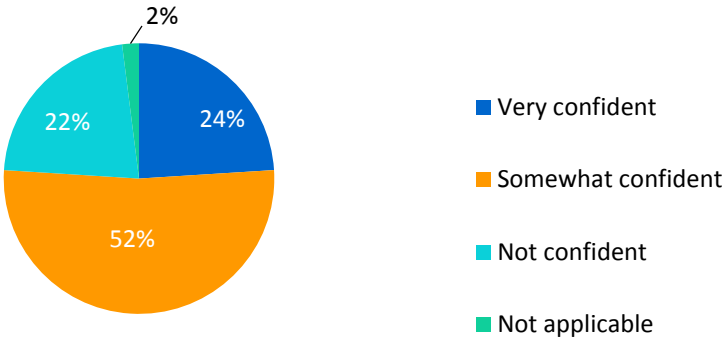
Dealing with Cyberbullying



Understanding how companies collect and use personal information online



Using networked technologies to support student learning



Overall, teachers express high levels of confidence in teaching students search skills (95% are "very" or "somewhat" confident) and verification skills (88% are "very" or "somewhat" confident). Male teachers are more likely than female teachers to report being "very" confident in their ability to teach students how to search for online information, with two-thirds of male teachers (67%) expressing this, compared to just over half of female teachers (54%).

Although there is not that much variance in overall confidence levels amongst more- and less-experienced teachers for teaching students how to search for online information, teachers with less experience are slightly more likely to indicate being "very confident" (<5 years, 59% and 5-14 years, 60%) than more experienced teachers (15-24 years, 54% and 25+, 51%). Teachers with less experience are also significantly more likely to indicate being "very confident" in teaching students how to verify online information (<5 years, 52% and 5-14 years, 47% versus 15-24 years, 38% and 25+ years, 33%).

Although a large majority of teachers at all school levels feel confident about their ability to teach online searching skills, secondary teachers are the most likely to feel this way (98% compared to 95% of elementary teachers and 83% of kindergarten teachers). As in Question 10 above, the difference between elementary and secondary teachers is very small for teachers who expressed confidence ("very" or "somewhat" combined), however, the share who feel "very" confident is higher among secondary teachers (64%) than elementary teachers (55%).

The difference in levels of confidence ("very" or "somewhat") in teaching students to *verify* online information, however, is larger, from 73 percent for kindergarten teachers, to 87 percent for elementary teachers and 94 percent for secondary teachers.

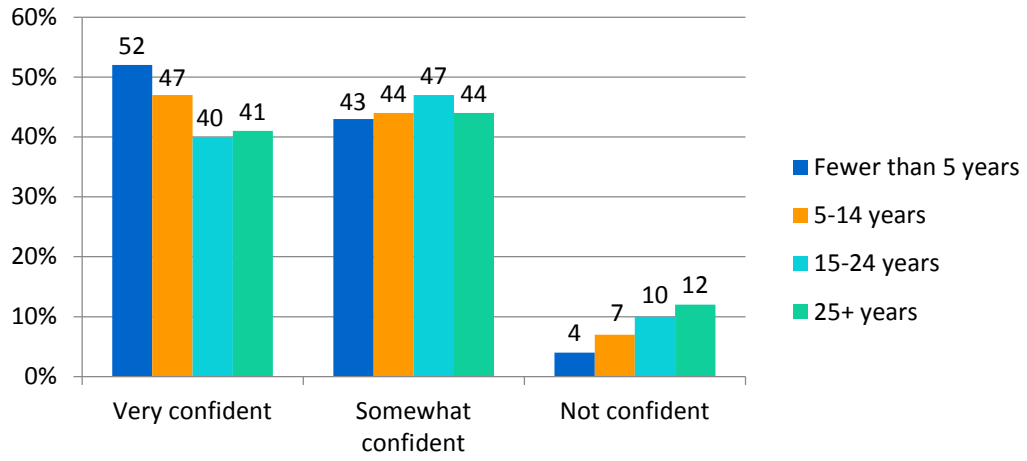
Although teachers expressed high levels of confidence in teaching students how to stay safe online (90%), they are at the same time somewhat less confident when it comes to helping their students deal with cyberbullying (with 77% being "very" or "somewhat" confident and one in five teachers indicating they are "not confident" in their ability to teach this topic).

Teachers in the largest schools with 1,000 or more students are least likely (71%) to feel confident ("very" or "somewhat") in teaching their students how to deal with cyberbullying, compared to 78 percent in schools with less than 1,000 students.

Teachers with the least experience in the public education system are significantly more likely than more experienced teachers to indicate being "very confident" in teaching students how to stay safe online. Those who have been teaching for 25 years or more are more likely (12%) to indicate that they are "not confident" compared to those with fewer than five years of

experience (4%).

Chart 11-2 Confidence in teaching students how to stay safe online: Years of teaching experience



About three-quarters of kindergarten teachers (74%) express being "very" or "somewhat" confident in their ability to teach students about staying safe online, which is significantly below the percentage of elementary and secondary school teachers who share the same level of confidence (91%). This pattern exists with respect to cyberbullying as well, with 61 percent of kindergarten teachers expressing confidence in teaching students about dealing with cyberbullying compared to 78 percent and 79 percent for elementary and secondary teachers respectively.

Most teachers report being "very" or "somewhat" confident in their ability to help their students understand online privacy issues and settings (84%) and in helping students recognize what is legal and illegal online (84%).

Over eight in ten teachers surveyed (84%) are confident ("very" or "somewhat) in teaching their students about online privacy issues, including 37 percent who are "very" confident. Over one-third of females (34%) and close to half of males (46%), indicate that they are "very" confident. However, 13 percent of teachers report that they are "not confident" teaching this topic, including 14 percent of females and 11 percent of males. The percentages with respect to teaching students what is legal and illegal online are similar, with 14 percent of females and 11 percent of males saying they are "not confident" doing this and over one-third of females (35%) and close to one-half of males (46%) reporting being "very confident".

Teachers in French schools are significantly more likely to indicate being “very confident” teaching students about privacy issues and settings (48% versus 35% for teachers in English schools). In like vein, teachers in English schools (15%) are twice as likely as teachers in French schools (7%) to indicate they are “not confident” teaching this. However, teachers in French schools are somewhat less likely than teachers in English schools to consider this topic as being “very important” for their students to learn (80% versus 89%).

Overall, teachers are also confident in their ability to help students understand school/school board policies regarding online access in the classroom (84% indicate being “very” or “somewhat” confident). Teachers with the most experience [15-24 (37%) and 25+ years (37%)] are more likely than teachers with fewer than 5 years’ experience (25%) to indicate being “very confident” in their ability to help students do this. Secondary teachers (38%) are more likely than elementary teachers (32%) and kindergarten teachers (22%) to indicate being “very confident” about helping students understand school/school board policies regarding online access in the classroom.

The topic that teachers are *least* confident in teaching is how companies collect and use personal information online, though even in this case just over a quarter (27%) say they are “not confident” doing this.

A significant percentage of teachers (22%) also report a lack of confidence in their ability to teach students how to use networked technologies to support their learning. Male teachers and teachers with fewer than 5 years’ teaching experience are most likely to feel “very” or “somewhat” confident about this: 84 percent of males compared to 74 percent of females; and 83 percent of teachers with less than five years’ teaching experience compared to 74 percent of teachers with 25+ years’ teaching experience. And although the percentages of teachers at different school levels who report being “somewhat confident” in teaching this are very similar (approximately half of the teachers at each level), kindergarten teachers (13%) are significantly less likely than elementary (22%) and secondary (29%) teachers to indicate being “very confident”.

In relation to all of these topics, it should be noted that kindergarten teachers are significantly more likely than elementary and secondary teachers to say that these are “not applicable” to them.

Table 11-1 Confidence in Teaching Students Internet Topics, By Level: Respondents selecting "Not Applicable"

	Kindergarten	Elementary	Secondary
Understanding school/school board policies regarding online access in the classroom	14%	2%	1%
Searching for online information	12%	2%	0.3%
Verifying that online information is credible/relevant/accurate	15%	2%	0.3%
Understanding online privacy issues and settings	16 %	2%	0.3%
Knowing what is legal and illegal online	16%	2%	0.3%
Staying safe online	14%	1%	0.3%
Dealing with cyberbullying	17%	2%	1%
Understanding how organizations (i.e. companies) collect and use personal information online	17%	2%	1%
Using networked technologies to support student learning	12%	2%	1%

12. INDICATE THE TYPE OF ENGAGEMENT YOUR STUDENTS HAVE HAD WITH EACH OF THE FOLLOWING LEARNING ACTIVITIES: BLOGS, MICRO BLOGS, VIDEOS, AUDIO PODCASTS, DIGITAL GRAPHIC NOVELS/COMICS, VIDEO GAMES.

Chart 12-1 Type of student engagement: Various learning platforms

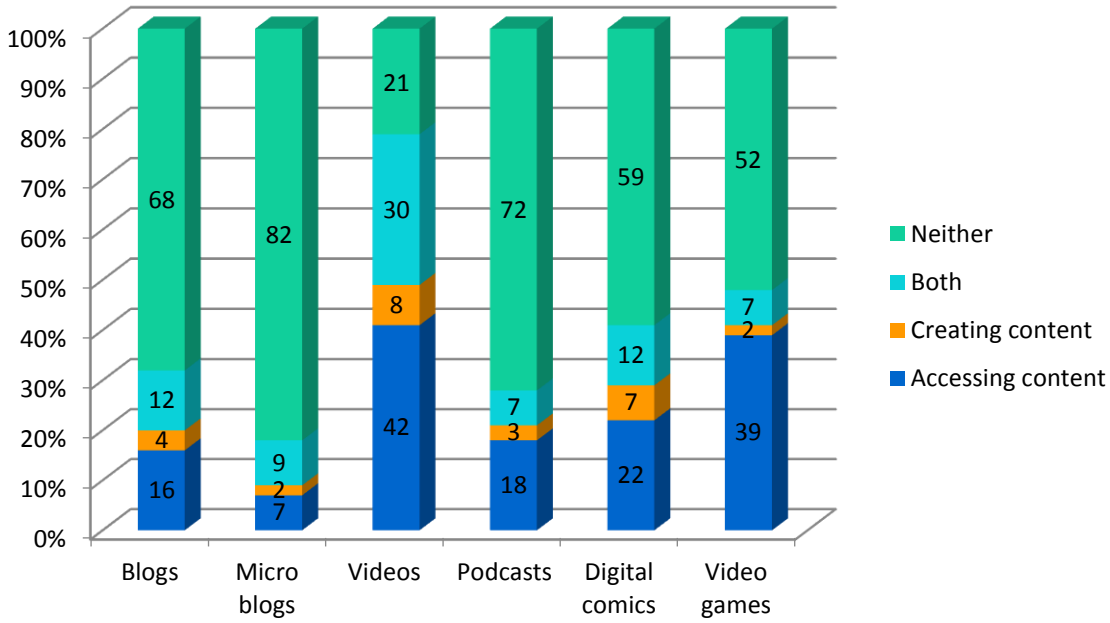


Chart 12-2 Type of student engagement: Blogs

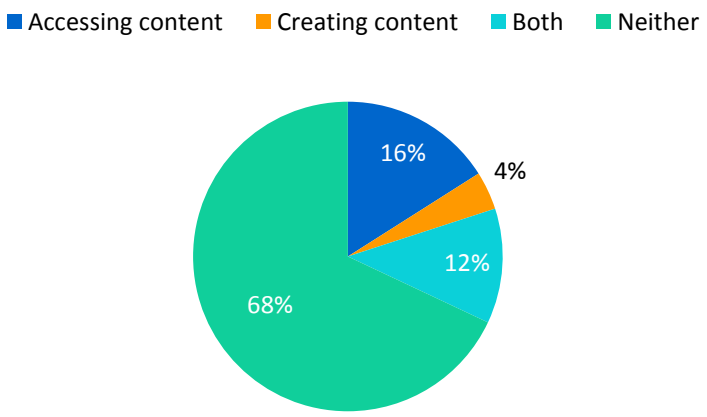


Chart 12-3 Type of student engagement: Micro blogs (e.g. Twitter, Instagram)

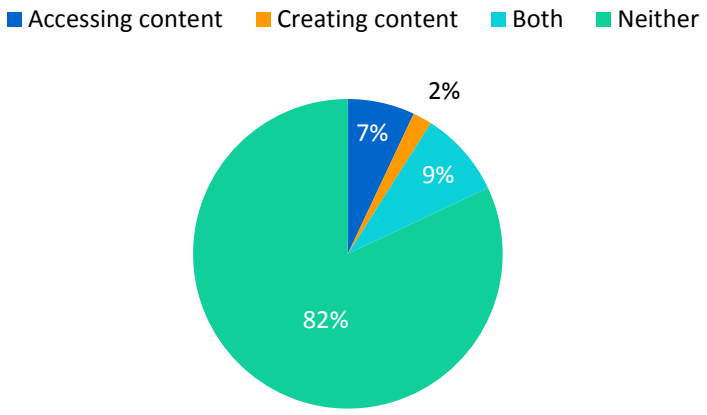


Chart 12-4 Type of student engagement: Videos

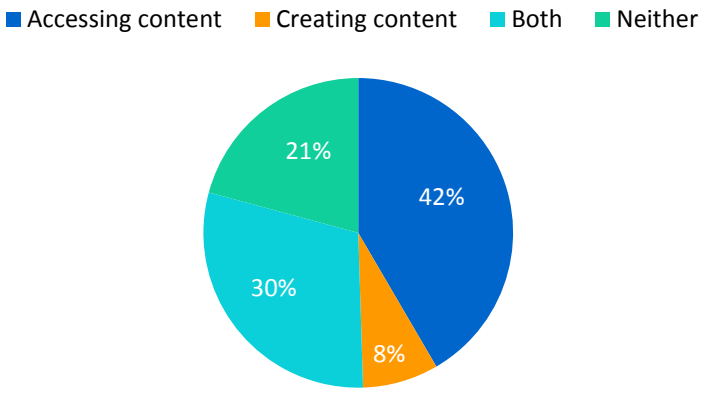


Chart 12-5 Type of student engagement: Audio podcasts

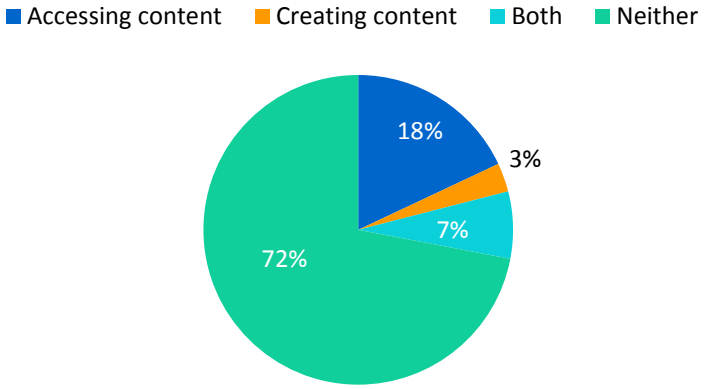


Chart 12-6 Type of student engagement: Digital graphic novels/comics

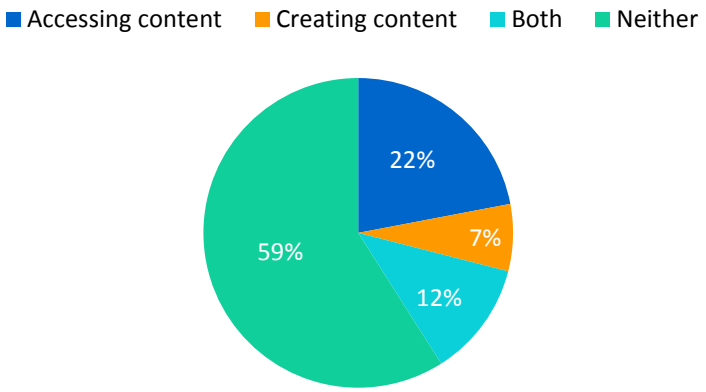


Chart 12-7 Type of student engagement: Video Games

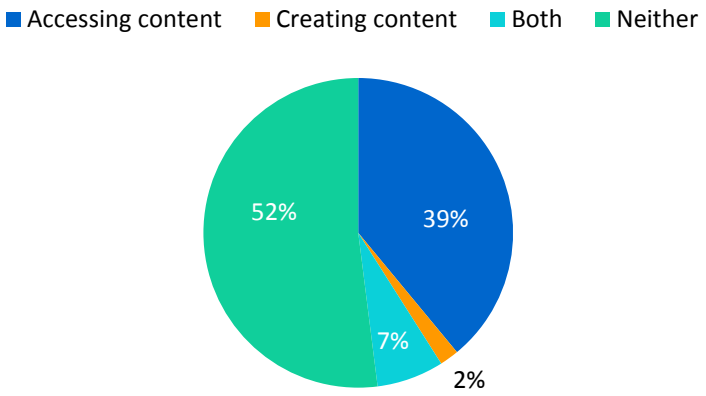
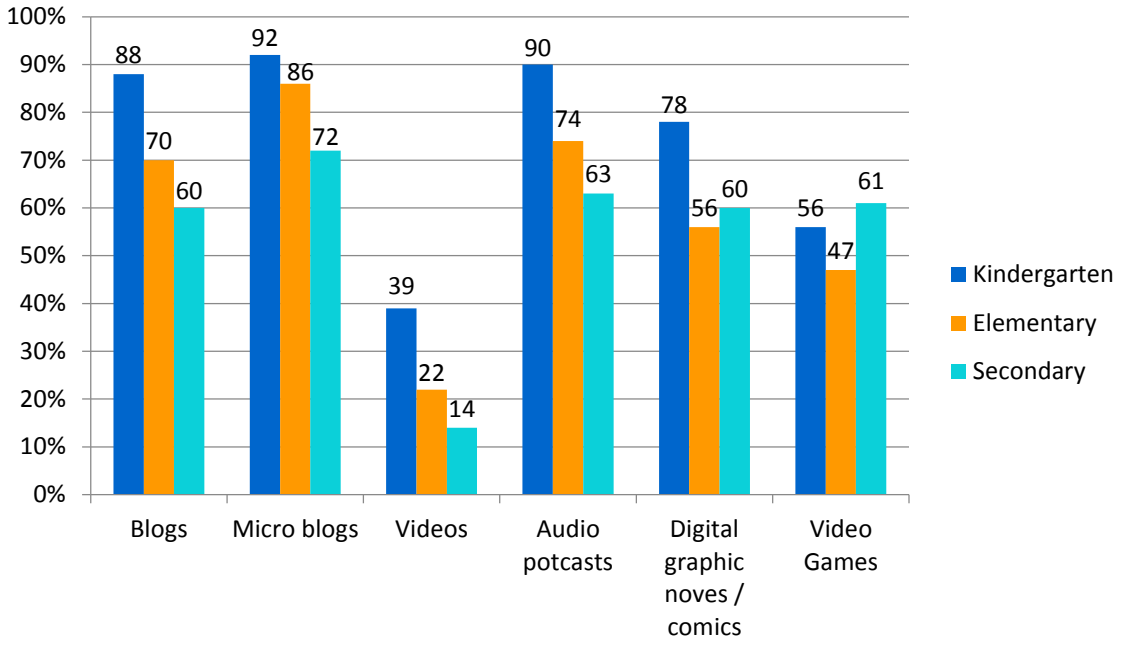


Chart 12-8 Using various platforms to create and/or access content: Teachers who indicated that their students do "Neither":



Overall

Of the technologies that were listed, the most widely used are videos, with 79 percent of teachers saying that their students have used these to access and/or create content. The next most widely-used technology – video games – had a much smaller percentage of teachers (48%) reporting that their students are using them to access and/or create content. With the exception of videos however, the majority of teachers surveyed report that their students do not use the remaining five platforms surveyed at all to create or access content. Micro Blogs (82%) and Audio Podcasts (72%) are the two platforms least used.

It's important to note that teachers were only asked whether students had used these technologies to access or create content, not how often they had done so. This is particularly significant in the case of those teachers who said their students had done both: there is no way, with the present data, to know the relative frequency with which these teachers' students create and access content using these technologies.

The share of teachers reporting that their students use blogs, micro blogs, videos and digital graphic novels/comics to create content and/or create and access content, is similar to the

share who have used them to access content only. Many of the tools that can facilitate student creativity are also being used by students to access creative content.

However, with respect to audio podcasts, students are more likely to solely access content (18%) rather than to create content or create and access content (10%). This is significantly more likely to be the case with respect to video games with almost four in ten teachers (39%) reporting that their students access content only, compared to 9% who report they either "create content" or "create and access content".

Across grade levels, kindergarten teachers are significantly less likely than elementary and secondary teachers to use these technologies to engage their students in learning. Exceptions are:

- Accessing content through videos (47% for kindergarten teachers compared to 44% elementary and 37% secondary teachers); and
- Using video games to access content, where kindergarten teachers (42%) trail elementary teachers (45%) but are significantly ahead of secondary teachers (28%).

Blogs

Male teachers are more likely than female teachers to incorporate blogs into their classroom teaching. (About seven in ten female teachers report that their students do not use blogs, compared to six in ten male teachers surveyed.) However, this may reflect the fact that a significantly larger share of women surveyed report teaching at the JK/K and elementary levels compared to the secondary level, where blogs are used more frequently.

French teachers (78%) are much more likely than English teachers (67%) to report that their students do not use blogs in the classroom. Teachers in English schools (14%) are twice as likely as teachers in French schools (6%) to report that their students use blogs for both creating and accessing content.

Micro Blogs

Male teachers (25%) are more likely than female teachers (16%) to say that their students use micro blogs in their classrooms. Again, this may be related to the fact that more of our female respondents were teaching in kindergarten or elementary school. However, because student use of micro blogs was extremely low overall, it is difficult to draw any inferences from the

different levels of use.

Videos

A larger share of male teachers (85%) than female teachers (78%) indicate that their students access or create content using videos.

Teachers in the smallest schools (fewer than 250 students) are slightly more likely than those in the largest schools (1,000+ students) to report that their students do not use videos at all to access or create content (22% versus 17%).

Audio Podcasts

Male teachers (36%) are more likely than female teachers (26%) to indicate that that their students use audio podcasts to access or create content.

Digital graphic novels/comics

Teachers in English schools (23%) are twice as likely as teachers in French schools (11%) to report that their students use digital graphic novels/comics to access content only, while teachers in French schools are nearly twice as likely as teachers in English schools (12% versus 7%) to say their students only use these for creating content. Teachers in French (13%) and English (12%) schools are almost equally likely to say their students use these tools for both purposes.

Almost 8 in 10 kindergarten teachers (78%) do not use digital graphic novels/comics with their students, compared to 56 percent of elementary teachers and 60 percent of secondary teachers.

Video Games

Teachers in smaller schools (less than 250 students – 44%) are significantly more likely than teachers in larger schools (1000+ students – 24%) to report their students using video games solely for accessing content (percentages for teachers who say that their students use video games for both accessing and creating content do not vary significantly).

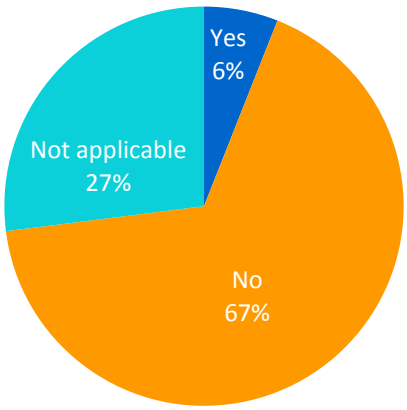
Although teachers in English schools (41%) are more likely than teachers in French schools (29%) to report their students using video games for accessing content only, the gap is much

smaller (7% English versus 5% French) for teachers who report their students using video games to both access and create content. Half of teachers in English schools say that their students do not use video games for either of these purposes, compared to 63 percent of teachers in French schools.

Over half (56%) of kindergarten teachers say their students do not use video games to access or to create content (compared to 47% of elementary teachers and 61% of secondary teachers). In addition, the percentage of teachers whose students use video games solely to access content is significantly lower at the secondary level (28%) than at the kindergarten (42%) and elementary (45%) levels. Teachers who report that their students use video games to create content (including those who report using video games for "both" creating and accessing content) is rare at the kindergarten level, with only 2 percent reporting this compared to 8 percent at the elementary level and 11 percent at the secondary level.

13. DO STUDENTS IN YOUR CLASSROOM LEARN HOW TO WRITE COMPUTER CODING?

Chart 13-1 Percentage of students learning computer coding



Overall, only a small percentage of teachers (6%) answered "Yes" to this question. Moreover, one quarter (27%) indicate that this question does not apply to them. Kindergarten teachers are particularly likely to feel this way, 59 percent report it is not applicable, compared to 25 percent of elementary teachers and 21 percent of secondary teachers. However, male teachers are twice as likely as female teachers to teach coding (11% compared to 5%).

QUALITATIVE QUESTIONS: MOST SUCCESSFUL AND LEAST SUCCESSFUL TEACHING EXPERIENCES USING NETWORKED TECHNOLOGIES

QUESTION 14: FROM A PEDAGOGICAL PERSPECTIVE, DESCRIBE YOUR MOST SUCCESSFUL TEACHING EXPERIENCE INVOLVING NETWORKED TECHNOLOGIES.

QUESTION 15: FROM A PEDAGOGICAL PERSPECTIVE, DESCRIBE YOUR LEAST SUCCESSFUL TEACHING EXPERIENCE INVOLVING NETWORKED TECHNOLOGIES.

In these questions teachers were asked to describe their most successful and least successful teaching experiences using networked technologies. Because of the open-ended and qualitative nature of these questions, they are not analyzed in this report. However, selected responses are included in the Discussion section below and they will also be the subject of future analysis.

DISCUSSION

TEACHERS PLACE A HIGH IMPORTANCE ON TEACHING DIGITAL LITERACY SKILLS AND ARE GENERALLY CONFIDENT IN THEIR ABILITY TO TEACH THESE SKILLS

Over 90 percent of teachers who participated in the survey consider it "very" or "somewhat" important that their students learn *all* of the digital literacy skills that were listed. As well, more than 80 percent of teachers consider it "very" important that their students learn six of the eight topics listed. Teachers are most concerned that students learn skills related to online safety, good behaviour online, and dealing with cyberbullying, but traditional digital literacy skills such as finding and authenticating information also rank highly.

Interestingly, considering the high value placed on teaching students how to deal with cyberbullying, a relatively high number of teachers (32%) feel that the question "When students experience online conflict, my administration provides me with excellent support to help me assist students in dealing with the issue" is not applicable to them. This suggests that the conflict students experience online often does not have a direct impact on the classroom. Teachers in lower school levels are more likely to say it is "not applicable" as follows: kindergarten teachers (59%), elementary teachers (35%), and secondary teachers (21%).

Teachers also place a high value on students' ability to understand online privacy issues and settings (88% consider this to be "very" important and 9% consider it to be "somewhat" important), and how companies collect and use personal information online (69% consider this to be "very" important and 25% consider it to be "somewhat" important).

In general, teachers are fairly confident in their ability to teach these skills as well: more than seven in ten are "very" or "somewhat" confident in their ability to teach all of the digital literacy skills listed in the survey. Almost all teachers are confident about their ability to teach students how to search for online information (95% indicate being "very" or "somewhat" confident) and how to stay safe online (90% are "very" or "somewhat" confident). Over three-quarters are confident about their ability to teach students how to deal with cyberbullying (77% are "very" or "somewhat" confident), how to use networked technologies to support student learning (75% are "very" or "somewhat" confident) and how companies collect and use personal information online (70% are "very" or "somewhat" confident).

MOST TEACHERS AND STUDENTS HAVE AND USE NETWORKED DEVICES IN THE CLASSROOM

Networked devices are ubiquitous in Canadian classrooms, with only three percent of respondents saying that their schools do not provide any. Moreover, Canadian teachers who report being provided with them by their school indicate that they frequently make use of them; a strong majority uses these devices with their students either "significantly" or "somewhat".[10] The devices that are used most heavily — desktop computers (92%), laptops/notebooks (87%), and smart boards (87%) — all have either a long history of use in classroom settings or directly replace an existing classroom technology, such as a blackboard or overhead projector.

This is consistent with the 2012 MediaSmarts report *Young Canadians in a Wired World, Phase III: Teachers' Perspectives*, in which key informant teacher-interviewees reported that networked technologies were less likely to be used to engage students in tasks or experiences that were only possible using this new technology, and more likely to be used in the place of older technologies.[11]

However, our findings clearly indicate that social networking has yet to be widely adopted by teachers. Just over one in ten (13%) use it with their students for educational purposes in the classroom and just under one in five (18%) use it with their students outside the classroom for educational purposes. This is consistent with the findings in MediaSmarts' 2014 *Young Canadians in a Wired World* student survey, which found that only 16 percent of students had ever communicated with people outside of the classroom using social networking during a learning exercise.[12]

Teacher-interviewees in the *Teachers' Perspectives* study felt that social network sites were likely to be problematic for teachers: many reported choosing not to be active in social networks in order to keep their personal and professional lives separate.

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[10] Although, as noted in table 1-b1, rates of use differ for each device.

[11] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Teachers' Perspectives*. MediaSmarts, 2012.

[12] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Experts or Amateurs? Gauging Young Canadians' Digital Literacy Skills*. MediaSmarts, 2014.

These concerns may also explain teachers' preference for using Twitter in the classroom with their students. Twitter uses a *broadcast* model by default (where users choose to "follow" other users and may access the content other users post without necessarily being "followed" or ever posting anything themselves), whereas Facebook uses a *network* model by default (where "friending" another user automatically gives them access to whatever content you post unless you take steps to limit their access). Accordingly, Twitter is a better platform to "use social media to introduce students to broader conversations about a topic" (72% of teachers have done this "frequently," "occasionally" or "rarely"). Indeed, there are a number of well-known Twitter sites, for example, that tweet things like day-by-day accounts of the Second World War[13] or Samuel Pepys' diary entries[14].

Kindergarten is a "low-tech zone" compared to elementary and secondary levels with respect to student-owned devices. Three-quarters of teachers at the kindergarten level report that students are not allowed to bring any of their own devices into the classroom for education purposes. Note however that when examining school supplied devices, survey results reveal that tablets and desktop computers are supplied more frequently at the kindergarten level. Tablets supplied by the school are also used most frequently at the kindergarten level, and smart boards supplied by the school are also slightly more likely to be used at the kindergarten level. "Laptops and notebooks" is the only examined school-supplied device that is significantly less likely to be supplied and used at the kindergarten level.

Tablets are supplied more frequently for educational purposes in the classroom by schools at the kindergarten level (71%), than at the elementary (62%) and secondary (42%) levels respectively. Among teachers who have them supplied at their school, 88 percent of kindergarten teachers report that they are used ("significantly" or "somewhat") compared to 84 percent of elementary teachers and 69 percent of secondary teachers. This may reflect the fact that the touchscreen interface of tablets makes them easy for preliterate students to use.[15]

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[13] Collinson, Alwyn. "WW2 Tweets From 1943." <https://twitter.com/realtimewwii.> Accessed October 10, 2015.

[14] Gifford, Phil. "Samuel Pepys." <https://twitter.com/samuelpepys.> Accessed October 5, 2015.

[15] Hourcade J., Mascher S., Wu D., et al. *Look, My Baby Is Using an iPad! An Analysis of YouTube Videos of Infants and Toddlers Using Tablets*. CHI'15 Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems, 2015.

There are also a very large number of educational apps available for these devices.[16] What may be more surprising is that, with the exception of tablets, the differences in use of networked technologies between elementary and secondary teachers are generally quite small.

However, the age of the students may be correlated with the tendency of networked devices to cause behaviour problems in the classroom. While secondary teachers are most likely to use most of the networked technologies that were listed, they are also most likely to feel they are disruptive: 46 percent "strongly" or "somewhat" agree with the statement "networked devices disrupt learning in the classroom by making it difficult to maintain discipline," compared to 23 percent of elementary and 16 percent of kindergarten teachers. Nonetheless, it's important to note that teachers' attitudes towards networked technologies in the classroom are positive overall: a plurality of teachers at all levels either "strongly" or "somewhat" disagree with the previous statement and a majority of teachers overall either "strongly" or "somewhat" agree that "networked devices make it easier for my students to learn" and "networked devices make it easier for me to match my instructional practice to students' learning styles."

TEACHERS WOULD LIKE MORE SUPPORT AND AUTONOMY IN USING NETWORKED TECHNOLOGIES IN THE CLASSROOM

Teachers are generally positive about the potential for technology in providing helpful learning tools, but are less likely to feel they have support in place to realize those benefits.

A lack of support is also mentioned repeatedly in teachers' responses to the open-ended question on their least successful pedagogical experiences using networked technologies. Many teachers report that they need better technical support in terms of maintaining and upgrading software, devices and networks, particularly in challenging contexts such as remote and Northern schools and portable classrooms:

> "Internet access in Nunavut is truly horrible and is not a reliable or viable option in the High Arctic...this is a serious issue in equal access to educational resources!!!"

[16] Rideout, Victoria. *Learning At Home: Families' Educational Media Use in America*. Joan Ganz Cooney Center, 2014.

> "Let's just put it this way....technology is great....WHEN IT WORKS!!"

Responses to the open-ended questions also highlight the fact that, for some teachers, the decision to use or not use networked technology may be a considered choice based on their professional judgment:

> "I have a technology free classroom. I feel the technology harms students. Instead, I focus on developing relationships, learn[ing] to listen, respond, and to have conversations with each other."

In like vein, teachers report that technical problems related to authorizing software updates and students' logging into devices and networks are recurrent barriers to successful use of technology in the classroom. Special mention is made of problems associated with giving students access to online platforms such as YouTube that are blocked by school or district filters:

> "Filters that block content often prevent effective research attempts."

> "Preparing lessons at home and having none of the links, programs work at school due to out-of-date technology at school or filters and settings on computers and the board network."

This resonates with the reports of the teachers interviewed in MediaSmarts' *Teachers' Perspectives* report, where the most common problem interviewees identified was the inability to access networked technologies because of school filters and policies that ban networked devices from the classroom.[17] MediaSmarts' *Young Canadians in a Wired World* student survey found that this was less of an issue for students: 36 percent report ever having trouble finding content needed for schoolwork due to filters. (It's important to note that the student survey was limited to grades 4-11, so the numbers may not be directly comparable.) However, a significant minority of students in that survey (25%) also reported being able to get around filters if they needed to.[18]

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[17] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Teachers' Perspectives*. MediaSmarts, 2012.

[18] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Experts or Amateurs? Gauging Young Canadians' Digital Literacy Skills*. MediaSmarts, 2014.

While teachers are generally confident in their ability to teach digital literacy skills, the lack of proper training in new devices was frequently reported as a barrier to effective learning:

> "We have one [Smart board] in the school but have never been trained."

> "Lack of PD on how to use new technology makes it intimidating to begin new things using the new technology."

This echoes findings in MediaSmarts' *Teachers' Perspectives* report, where several participants were frustrated by a dearth of in-course and professional development training to help teachers learn how to use technology to meet curricular outcomes.[19]

A strong interest in in-service professional development is reflected in the fact that such training was mentioned often when our respondents described their most successful teaching experience involving networked technologies:

> "Our specialized team from our board ... train us in programs and come and train the students as well."

Findings from our most recent study also support findings from a national survey of elementary and secondary teachers that was conducted by the Canadian Teachers' Federation in 2012 to explore the relationship between the use of digital technologies and aspirational teaching.[20]

While the vast majority of teachers in the 2012 study agreed that the use of technology in the classroom enabled them to teach in the way they aspire to teach and assisted them in meeting their students' individual learning needs, their views became more divided on issues related to technology resources, student access to technology, and professional development, indicating that there is considerable room for improvement.

The findings, which reinforce the findings of this study, suggest that there are a number of conditions of teachers' professional practice that need to be in place to ensure that new and

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[19] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Teachers' Perspectives*. MediaSmarts, 2012.

[20] Froese-Germain et al. *Teachers' Views on the Relationship Between Technology and Aspirational Teaching.* Canadian Teachers' Federation, 2013.

emerging technologies can effectively support teaching and learning. These conditions include but are not limited to the following:

- Adequate infrastructure to support the use of technology in schools
- Equitable access to up-to-date equipment and resources
- Timely technical support to ensure that technology works as it should so that instruction can proceed smoothly
- Appropriate, job-embedded, ongoing professional development to enable teachers to utilize new technologies to effectively support student learning
- Opportunity and time for teachers to learn about and experiment with new technologies
- Support for teachers to apply their professional autonomy and judgment to determine, from a pedagogical perspective, the best use of new technologies to support learning
- Opportunities for teacher input into technology-related educational decisions

Findings from the 2012 study indicated that careful consideration needs to be given to the interrelationship between pedagogy, curriculum and technology, particularly the need to properly integrate technology into the curriculum and daily teaching practice so that student learning is the primary outcome of the educational process. Technological tools should assist in the delivery of the curriculum, rather than drive the development of the curriculum.

THE PERSONAL DEVICES THAT STUDENTS ARE LEAST OFTEN PERMITTED TO BRING TO CLASS ARE ALSO THE ONES THEY ARE MOST LIKELY TO USE WHEN ALLOWED

A majority (59%) of teachers report that students are allowed to use at least one of their own networked devices in the classroom for educational purposes. However, there is a sharp divide in this practice, as 41 percent of classrooms do not allow children to bring in any personal device.

Student-supplied devices that are *least* likely to be allowed – MP3 players (33%) and smart phones (41%) – are the ones with the highest frequency of use. Over nine in ten teachers (92%) who report that students are allowed to bring smart phones say they use them “significantly”

or “somewhat” for educational purposes, while 87 percent of teachers whose students are allowed to bring MP3 players say their students use them “significantly” or “somewhat”.

In many cases, teachers are likely to have limited control over whether or not students are permitted to bring networked devices to class, since this is often a decision made at the school or district level.

Use of students’ personal devices may be effective in addressing some of teachers’ concerns about low levels of tech support:

> “Frequently internet does not function in my classroom, so planning to use it at any time is risky and has caused much frustration for myself and my students.”
>
> “Using the school wifi is VERY unreliable. It goes out constantly and affects the delivery of my lessons. I need to plug in so that I'm guaranteed no setbacks.”
>
> “Half hour can be wasted just trying to log on. Motivation to learn and teach new technologies is low due to this.”

Since students are motivated to keep these devices in good working order and smart phones may be able to download data through service provider networks, they may provide faster and more reliable access to online resources than school networks. However, smart and cell phones are themselves mentioned several times in our participants’ least successful pedagogical uses of technology in the classroom, suggesting that their use may invite as many problems as it solves:

> “Having students use Smartphones to search for information on a website. The screen is too small for students to make sense of.”
>
> “Students constantly using their phones in class for purposes other than learning.”

Students surveyed in the *Young Canadians in a Wired World* study were more likely to report being allowed to use their own devices in the classroom than indicated in the findings from this survey: 29 percent of students said they were not allowed to bring any of their own devices, compared to the 41 percent of teachers in the present study who say that students are not allowed to bring any of their own devices into the classroom for educational purposes. However, the earlier study only included students between grades 4 and 11, so it is possible that the inclusion of kindergarten and primary teachers in the present study is responsible for

the difference.[21]

TEACHERS ARE USING THE NETWORKED DEVICES IN THEIR CLASSROOMS TO DELIVER CONTENT TO STUDENTS AND TO EMPOWER THEIR STUDENTS TO CREATE CONTENT

A significant portion of teachers report that networked technologies are great vehicles for introducing students to innovative content and for encouraging students to make their own content.

Over 70 percent of teachers report that their students have accessed content through online videos (including those who have both accessed and created content), almost half (46%) through video games, and a third (33%), through digital graphic novels/comics. And almost four in ten (38%) have had their students create videos. This is an important part of developing digital literacy skills, which go beyond mere use and understanding to position students as content creators in their own right.

However, creating content with technologies other than video lag far behind. The next most common creative uses involve digital comics and graphic novels (19% of students have either solely created content using this technology or have used it both for accessing and creating content).

Engaging students in writing code is also an under-developed area. Just over five per cent of teachers have ever had their students write computer code. This may reflect the limited place that computer programming has in formal school curricula (27% of teachers say this question is "Not applicable" for them). Applicability varies by grade level, with almost six in ten teachers at the kindergarten level (59%) reporting that writing computer code is "not applicable", compared to one-quarter at the elementary level (25%) and 21% at the secondary level. However, this activity – in particular in conjunction with events such as the Hour or Day of Code – is mentioned several times as a best pedagogical experience:

[21] Steeves, Valerie. *Young Canadians in a Wired World, Phase III: Experts or Amateurs? Gauging Young Canadians' Digital Literacy Skills*. MediaSmarts, 2014.

> "We did the Day of Code and every student was engaged in the activity and realized the importance of coding in their lives."

Providing teachers with more training in computer programming may help them introduce coding to their students across a variety of curricular areas.

Our list of best pedagogical experiences also highlights the value of digital media creation to citizenship. This is a key proficiency for digital literacy, and our respondents embraced the potential of networked technologies to connect students to others and respond as citizens engaged with the issues of the day.

> "We use Facebook and Twitter to access and respond to social justice issues (Idle No More, Spread the Word to End the Word etc.)."

> "Blogging and twitter success and celebrating community. Students shared and extended our community beyond the walls of our classroom."

> "My students have a voice and their voice is heard outside the walls of the classroom."

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APPENDIX I: SURVEY QUESTIONNAIRE

The following are the survey questions completed by the participants in the study.

Overview

The Canadian Teachers' Federation in partnership with MediaSmarts is conducting a survey of K-12 teachers in order to gain a better understanding of how teachers and their teaching practices are being impacted by networked technologies. Among the topics being explored are the availability and use of networked technologies to support student learning, knowledge and skills pertaining to teaching using networked technologies, and the creative uses of networked technologies for learning activities. As well, teachers will have an opportunity to share their perspectives on actual experiences using networked technologies in their classrooms.

The findings will be used to inform policy and practice regarding the use of networked technologies in education from the perspective of the teaching profession in Canada.

Please indicate the teacher organization of which you are a member:

- Newfoundland and Labrador Teachers' Association (NLTA)
- PEI Teachers' Federation (PEITF)
- Nova Scotia Teachers Union (NSTU)
- New Brunswick Teachers' Association (NBTA)
- Association des enseignantes et des enseignants franco-ontariens (AEFO)
- Elementary Teachers' Federation of Ontario (ETFO)
- Ontario English Catholic Teachers' Association (OECTA)
- Manitoba Teachers' Society (MTS)
- Saskatchewan Teachers' Federation (STF)
- Alberta Teachers' Association (ATA)
- Syndicat des enseignantes et enseignantes du programme francophone de la C.-B. (SEPF)
- Yukon Teachers' Association (YTA)
- Northwest Territories Teachers' Association (NWTTA)
- Nunavut Teachers' Association (NTA)

Are you currently teaching in a classroom setting? (Yes, No)

Devices Supplied by Schools

Which of the following networked devices does your school supply to use with the students in your classroom for educational purposes? (Check all that apply)

☐ Smart boards
☐ Desktop computers
☐ Laptops and notebooks
☐ Tablets (e.g. iPads)
☐ Other
☐ None of the above

[If "Other" is checked in the previous question]:

Please list the other networked devices supplied by your school that are not indicated in the previous question.

_____

Indicate the extent to which you use, with your students, each of the following networked devices that you previously indicated are being supplied by your school. (Significantly, Somewhat, Not at all.)

- Smart boards
- Desktop computers
- Laptops and notebooks
- Tablets (e.g. iPads)
- Other

Devices Supplied by Students

Which of the following devices owned by students are students allowed to use in your classroom for educational purposes? (Check all that apply)

☐ Laptops
☐ Tablets (i.e. IPads)
☐ MP3 players (i.e. IPods)
☐ Smart phones
☐ Other
☐ None are allowed

[If "Other" is checked in the previous question]:

Please list the other devices owned by students, not indicated in the previous question, that students are allowed to use in your classroom for educational purposes.

Indicate the extent to which students use each of the following personally-owned networked devices that you previously indicated as being the one(s) allowed for educational purposes in your classroom. (Significantly, Somewhat, Not at all.)

- Laptops
- Tablets (i.e. IPads)
- MP3 players (i.e. IPods)
- Smart phones
- Other

USING NETWORKED TECHNOLOGIES TO SUPPORT LEARNING

Do you do any of the following in your classroom to support learning? (Frequently, Occasionally, Rarely, Never.)

- Break students into groups and use one or more technologies to match different learning styles

- Have students work collaboratively using a wiki or Google doc
- Provide access to self-learning modules that allow students to proceed at their own pace
- Use social media to introduce students to broader conversations about a topic
- Use networked technologies so students can communicate with others outside the classroom as part of a learning exercise (e.g. experts, veterans, community members, students in other schools)

Indicate the extent to which you agree with each of the following statements: (Strongly agree, Somewhat agree, Somewhat disagree, Strongly disagree, Don't Know.)

- Networked devices make it easier for my students to learn
- Networked devices make it easier for me to match my instructional practice to students' various learning styles
- Networked devices disrupt learning in the classroom by making it difficult to maintain discipline
- Networked devices in the classroom erode the privacy and trust that is needed for students to feel confident about expressing themselves
- Considering classroom diversity, networked devices are typically being used by my students in the language of instruction

How frequently, if ever, are Internet websites you attempt to access for educational purposes in your classroom, blocked by your school/board filter? (Never, Occasionally, Frequently)

SOCIAL NETWORKING IN THE CLASSROOM FOR EDUCATIONAL PURPOSES

Do you use any social networking platforms in the classroom for educational purposes (e.g. Facebook, Twitter)? (Yes, No)

[If answer to the previous question is “Yes”]:

Indicate how often you have used each of the following social networked platforms in your classroom for educational purposes? (Frequently, Occasionally, Rarely, Never).

- Facebook
- Twitter
- Instagram
- Tumblr
- A specific social networking platform designed for teachers or schools
- Other

[If answer to “Other” in the previous question is not “Never”]:

Please indicate the other social networking platforms you have used in the classroom for educational purposes which are not listed in the previous question.

SOCIAL NETWORKING OUTSIDE THE CLASSROOM FOR EDUCATIONAL PURPOSES

Do you use any type of social networking to communicate with students outside the classroom for educational purposes? (Yes, No)

[If answer to the previous question is “Yes”]:

Indicate how often you use each of the following networked technologies to communicate with students outside the classroom for educational purposes? (Frequently, Occasionally, Rarely, Never.)

- School District e-learning portal
- Email
- Class website
- School intranet
- Other

[If answer to “Other” in the previous question is not “never”]:

Please list the networked technologies you use to communicate with students outside the classroom for educational purposes which are not listed in the previous question.

Which of the following social networking accounts do you use outside the classroom to communicate with your students for educational purposes:

- Your personal account
- A dedicated account for students
- Both of the above

SUPPORT FOR THE INTEGRATION OF TECHNOLOGY INTO TEACHING PRACTICES

Indicate the extent to which you agree with the following statements: (Strongly agree, Somewhat agree, Somewhat disagree, Strongly disagree, Not applicable.)

- I have sufficient support in my school/district to help me learn how to use various kinds of networked technologies.
- I have sufficient support in my school/district to enable me to use various kinds of networked technologies to meet curricular goals
- When students experience online conflict, my administration provides me with excellent support to help me assist students in dealing with the issue.

DEVELOPING STUDENT SKILLS USING NETWORKED TECHNOLOGIES

How important is it that your students learn about each of the following topics: (Very important, Somewhat important, Not important)

- Searching for online information
- Verifying that online information is credible/relevant/accurate
- Understanding online privacy issues and settings
- Appropriate online behaviour

- Staying safe online
- Dealing with cyberbullying
- Deconstructing various messages (e.g. advertising and stereotypes) embedded in the online environment
- Understanding how organizations (e.g. companies) collect and use personal information online

KNOWLEDGE AND SKILLS PERTAINING TO TEACHING WITH NETWORKED TECHNOLOGIES

How confident do you feel about your knowledge and skills with respect to teaching your students about each of the following: (Very confident, Somewhat confident, Not confident, Not applicable)

- Understanding school/school board policies regarding online access in the classroom
- Searching for online information
- Verifying that online information is credible/relevant/accurate
- Understanding online privacy issues and settings
- Knowing what is legal and illegal online
- Staying safe online
- Dealing with cyberbullying
- Understanding how organizations (i.e. companies) collect and use personal information online
- Using networked technologies to support student learning

CREATIVE USES OF DIGITAL TECHNOLOGIES FOR LEARNING ACTIVITIES

Indicate the type of engagement your students have had with each of the following learning activities: (Accessing content, Creating content, Both, Neither)

- Blogs
- Micro blogs (e.g. Twitter, Instagram)
- Videos
- Audio Podcasts
- Digital graphic novels/comics
- Video games

Do students in your classroom learn how to write computer coding? (Yes, No, Not applicable.)

TEACHING EXPERIENCES INVOLVING NETWORKED TECHNOLOGIES

From a pedagogical perspective, describe your most successful teaching experience involving networked technologies.

From a pedagogical perspective, describe your least successful teaching experience involving networked technologies.

BACKGROUND DEMOGRAPHIC INFORMATION

Which of the following best describes your current position?

- Classroom teacher
- School administrator
- Special education or resource teacher
- Teacher-Librarian
- Guidance counselor
- Other

Are the majority of the students that you teach at the ...?

- Junior kindergarten or kindergarten level
- Elementary level
- Secondary level

Do you teach in...?

- An English language school (including immersion)
- A French as a First Language school'
- Other

Please indicate your gender:

- Female
- Male
- Gender undeclared/Gender neutral
- Prefer not to answer

How long have you been teaching in the public education system?

- Fewer than 5 years
- 5 to 14 years
- 15 to 24 years
- 25 years or more

Please indicate the size of the student population in the school where you primarily teach:

- Fewer than 250 students
- 250 to 499 students
- 500 to 749 students
- 750 to 999 students
- 1,000 or more students

Do the students that attend the school where you teach reside in...?

- Mainly urban areas
- Mainly rural areas
- A relatively even mix of urban and rural areas

APPENDIX II: METHODOLOGY AND BACKGROUND DEMOGRAPHIC INFORMATION

METHODOLOGY

The ***CTF Survey on Networked Technologies in the Classroom*** was conducted by the Canadian Teachers' Federation (CTF) in partnership with MediaSmarts from February 2nd to February 9, 2015. A total of 4,043 respondents teaching in a classroom setting completed the on-line survey. An additional 1,066 individuals, among 5,109 individuals who entered the survey, were not eligible to participate in the survey as they were not currently teaching in a classroom setting

CTF designed the survey using survey software, and prepared letters inviting teachers to participate in the survey. Email invite letters were in both French and English, and included separate links to the survey in each language. Respondents had the choice of completing the survey in either French or English.

A total of 14 CTF Member organizations participated in the survey, who, in general, forwarded the letter of invitation to the survey to a sample of teachers in their organization. Results reported are based only on the responses of teachers who completed the survey.

BACKGROUND DEMOGRAPHICS INFORMATION

OVERALL DEMOGRAPHICS

Gender

The gender breakdown of respondents included 2,902 female respondents, 966 male respondents, 11 teachers reporting to be gender undeclared/gender neutral, and 164 preferred not to answer.

School Level

Results include responses from 333 teachers at the junior kindergarten or kindergarten level, 2,343 at the elementary level and 1,367 at the secondary level.

Language of Instruction

Over 3,400 responses (3,416) were from teachers in an English language school (including immersion), 502 from teachers in a French as a first language school, and 125 from teachers in "other" schools.

Years of Teaching Experience

A total of 413 teacher respondents had fewer than 5 years of teaching experience in the public education system, while 1,670 had 5 to 14 years, 1,251 teachers had 15 to 24 years, and 709 teachers had 25 years or more.

Student Population

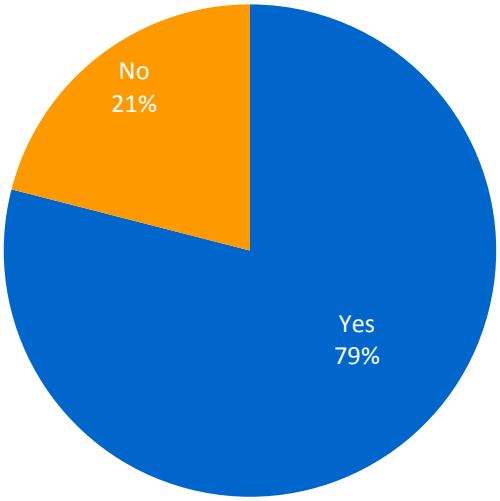
With respect to the size of the student population in the school where they primarily teach, 1,108 respondents said they primarily teach in schools with fewer than 250 students, compared to schools with 250 to 499 students (1,552 respondents), 500 to 749 students (745 respondents), 750 to 999 students (314 respondents) and 1,000 or more students (324 respondents).

Area of Residence

A total of 2,289 respondents report that the students attending their school reside in mainly urban areas, while 1,187 report mainly rural areas, and 567 respondents indicate a relatively even mix or urban and rural areas.

SPECIFIC BREAKDOWN FOR EACH QUESTION

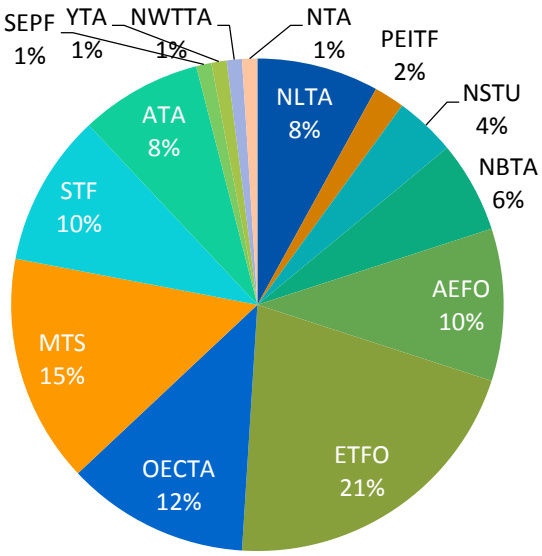
ARE YOU CURRENTLY TEACHING IN A CLASSROOM SETTING?



	Percent	Count
Yes	79.1%	4,043
No	20.9%	1,066
Total	100.0%	5,109

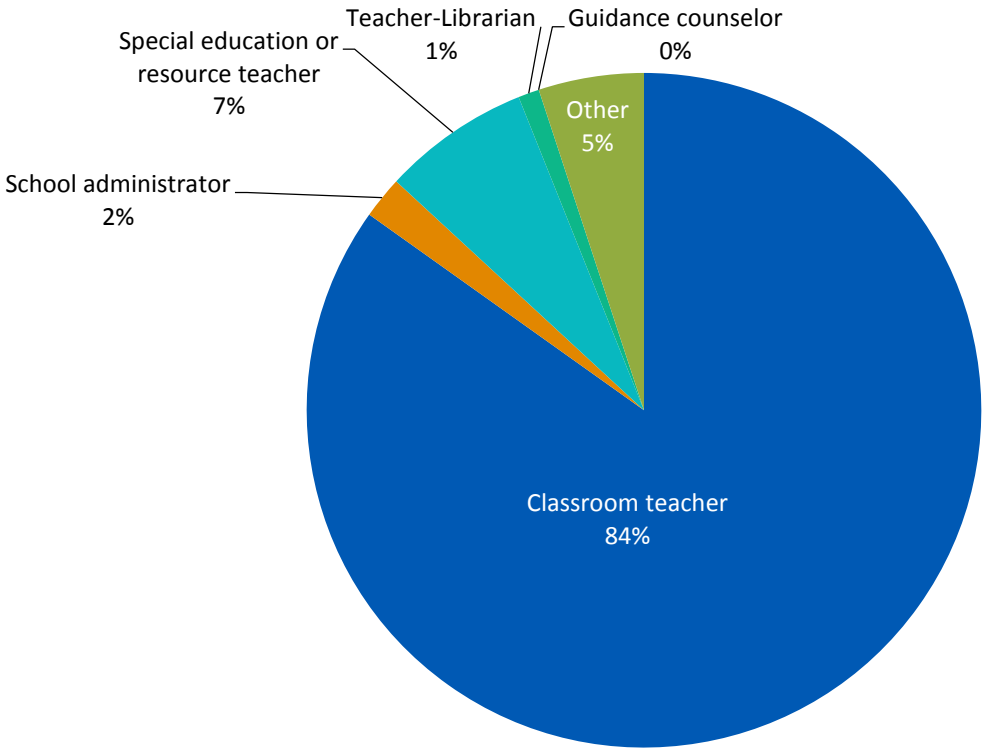
PLEASE INDICATE THE TEACHER ORGANIZATION OF WHICH YOU ARE A MEMBER:

(Based on eligible respondents [i.e. those reporting they are currently teaching in a classroom setting] who completed the survey)



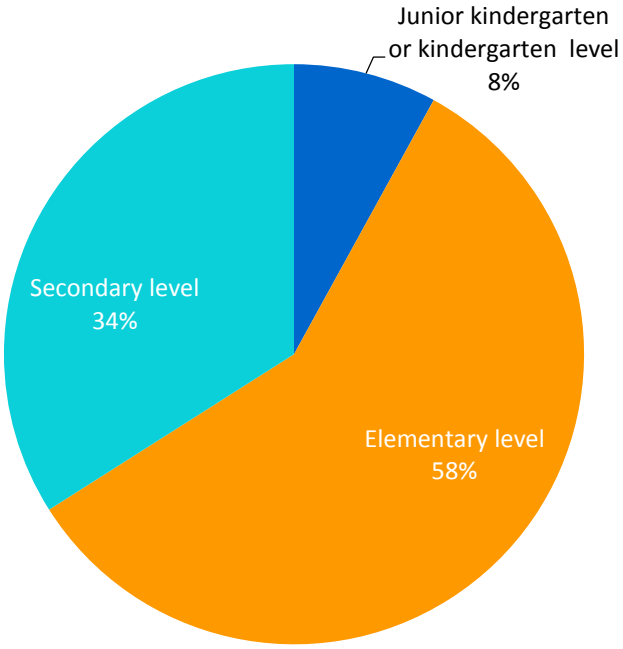
	Percent	Count
NLTA	8.0%	322
PEITF	2.1%	86
NSTU	3.8%	154
NBTA	6.0%	243
AEFO	9.6%	387
ETFO	21.0%	848
OECTA	11.9%	481
MTS	15.3%	619
STF	10.1%	409
ATA	8.5%	343
SEPF	0.9%	36
YTA	0.7%	30
NWTTA	1.3%	52
NTA	0.8%	33
Total	100.0%	4,043

WHICH OF THE FOLLOWING BEST DESCRIBES YOUR CURRENT POSITION?



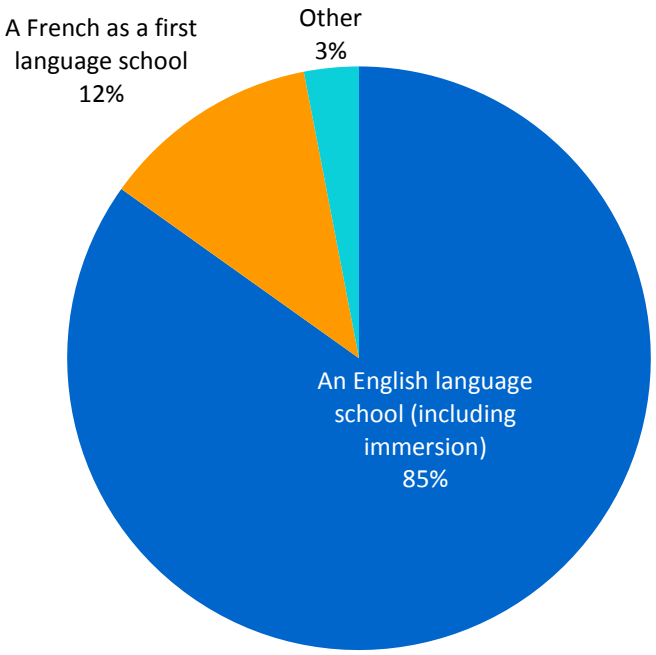
	Percent	Count
Classroom teacher	84.2%	3,405
School administrator	2.2%	87
Special education or resource teacher	7.1%	286
Teacher-Librarian	1.0%	41
Guidance counselor	0.5%	18
Other	5.1%	206
Total	100.0%	4,043

ARE THE MAJORITY OF THE STUDENTS THAT YOU TEACH AT THE ...?



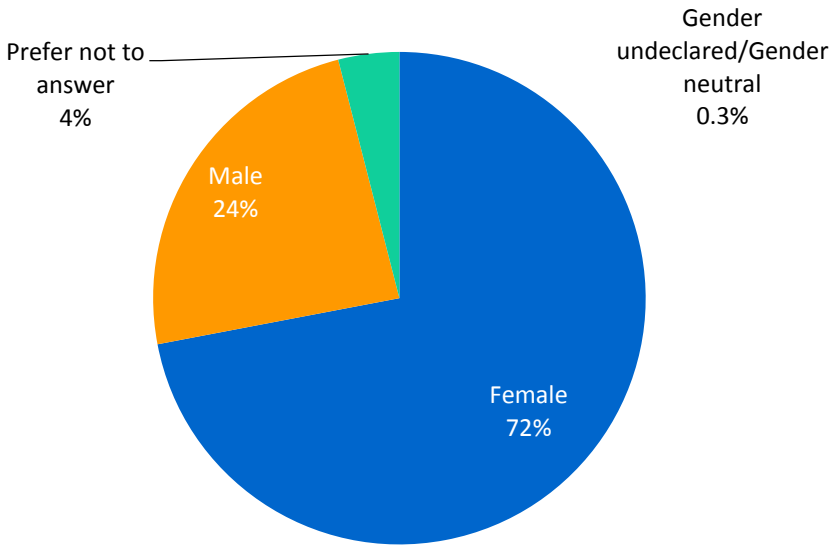
	Percent	Count
Junior kindergarten or kindergarten level	8.2%	333
Elementary level	58.0%	2,343
Secondary level	33.8%	1,367
Total	100.0%	4,043

DO YOU TEACH IN...?



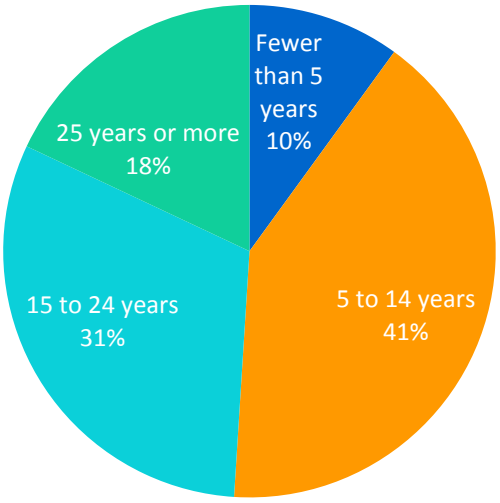
	Percent	Count
An English language school (including immersion)	84.5%	3,416
A French as a first language school	12.4%	502
Other	3.1%	125
Total	100.0%	4,043

PLEASE INDICATE YOUR GENDER:



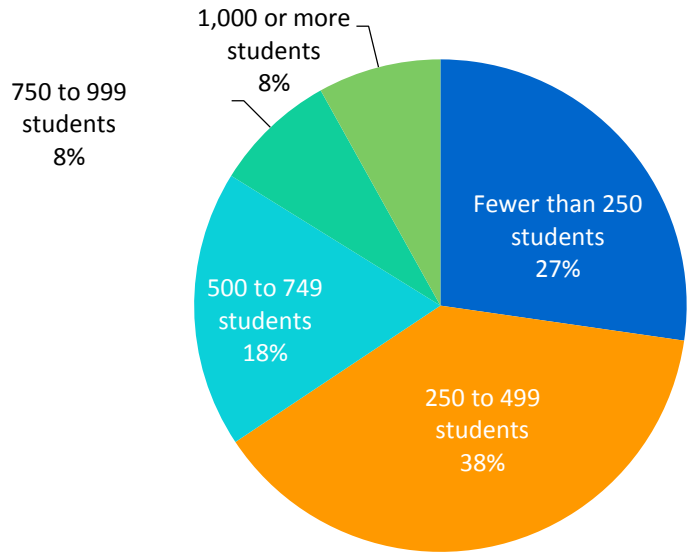
	Percent	Count
Female	71.8%	2,902
Male	23.9%	966
Gender undeclared/Gender neutral	0.3%	11
Prefer not to answer	4.1%	164
Total	100.0%	4,043

HOW LONG HAVE YOU BEEN TEACHING IN THE PUBLIC EDUCATION SYSTEM?



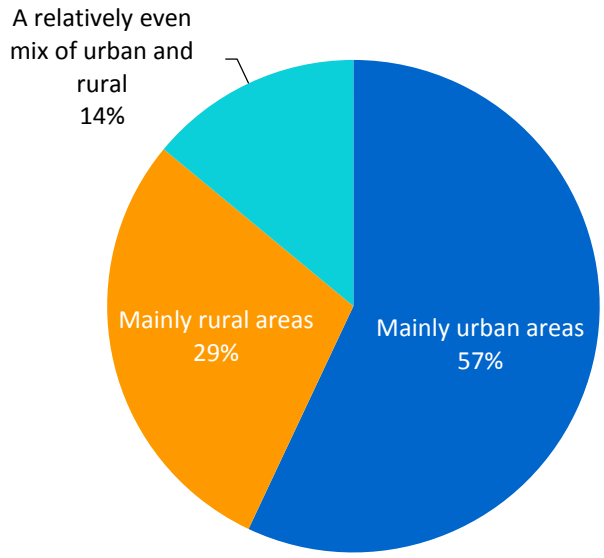
	Percent	Count
Fewer than 5 years	10.2%	413
5 to 14 years	41.3%	1,670
15 to 24 years	30.9%	1,251
25 years or more	17.5%	709
Total	100.0%	4,043

PLEASE INDICATE THE SIZE OF THE STUDENT POPULATION IN THE SCHOOL WHERE YOU PRIMARILY TEACH:



	Percent	Count
Fewer than 250 students	27.4%	1,108
250 to 499 students	38.4%	1,552
500 to 749 students	18.4%	745
750 to 999 students	7.8%	314
1,000 or more students	8.0%	324
Total	100.0%	4,043

DO THE STUDENTS THAT ATTEND THE SCHOOL WHERE YOU TEACH RESIDE IN...?



	Percent	Count
Mainly urban areas	56.6%	2,289
Mainly rural areas	29.4%	1,187
A relatively even mix of urban and rural areas	14.0%	567
Total	100.0%	4,043