

Table C-5
Challenges in using ICT, school year 2003-04

	All schools	Instructional level of school			Location of school		All schools	Type of school		Size of school		
		Elementary	Secondary	Mixed	Urban	Rural		Public	Private	Small	Medium	Large
Proportion of schools with "extensive" challenges in using ICT												
Hardware												
Obtaining sufficient number of computers	39.3	40.5	39.6	32.4	40.6	35.6	39.3	39.9	33.7	38.3	37.7	41.7
Ensuring computers and peripherals are up to date	51.8	53.0	50.6	47.4	51.7	52.1	51.8	52.5	45.7	53.0	49.6	52.9
Software												
Obtaining software which is specific enough or adaptable	33.7	34.9	28.0	37.4	32.7	36.5	33.7	33.9	32.4	38.5	32.7	30.5
Obtaining sufficient copies/licences of software for instructional purposes	43.4	44.2	40.5	44.1	42.4	46.2	43.4	43.5	41.8	45.6	42.8	42.1
Obtaining software in the language of instruction	12.9	13.9	11.7	9.9	13.6	11.1	12.9	13.4	9.2	13.6	12.6	12.8
Instruction												
Integrating computers in classroom instruction practices	32.2	34.5	29.1	25.7	33.2	29.4	32.2	32.8	26.1	28.6	31.3	36.2
Having a sufficient number of teachers supervising students using computers	20.9	23.2	16.1	17.1	20.6	21.8	20.9	21.1	19.1	22.8	20.1	20.1
Maintaining sufficient level of ICT in all subjects for teachers to provide adequate level of instruction	38.3	40.4	35.9	31.0	38.5	37.6	38.3	38.7	33.8	38.5	37.8	38.4
Internet												
Integrating Internet into instruction of low-achieving students	21.1	23.4	17.1	16.1	21.3	20.8	21.1	21.4	19.3	22.8	20.8	20.1
Finding enough time in the school's or teachers' schedule for using the Internet	34.3	37.1	28.2	30.4	34.2	34.8	34.3	34.7	31.0	35.2	35.0	32.9
Having sufficient connections for simultaneous access to the Internet	24.0	25.7	17.6	26.6	21.7	30.4	24.0	23.7	26.8	30.2	21.0	21.7
Ensuring there is no information overload	23.2	25.4	17.7	21.8	23.5	22.5	23.2	23.4	21.2	24.4	22.3	23.1
Ensuring information obtained is of sufficient quality	26.5	28.4	22.4	24.2	26.4	26.9	26.5	26.5	26.6	29.4	24.7	26
Other												
Finding space to integrate computers into the classroom appropriately	25.1	26.6	23.5	19.8	26.1	22.4	25.1	25.2	23.5	22.8	24.7	27.5
Lack of knowledge, skills, interest and/or willingness of teachers to use computers	19.5	21.2	16.2	16.6	20.0	18.0	19.5	19.9	17.0	17.8	19.2	21.2
Obtaining adequate technical support/assistance for operating, maintaining computers and/or solving technical problems	31.8	33.4	28.3	29.8	32.0	31.3	31.8	32.4	27.0	31.4	31.3	32.8
Having enough training opportunities for teachers	40.1	42.8	36.3	32.2	40.7	38.3	40.1	41.5	27.7	37.6	38.9	43.3
Ensuring ICT infrastructure is adequate for telecommunications	26.5	28.1	22.8	24.9	25.0	30.9	26.5	26.6	26.2	30.7	24.1	25.4
Ensuring ICT infrastructure has anti-theft and anti-vandalism mechanisms	15.5	14.6	18.0	15.4	15.9	14.4	15.5	15.0	20.0	16.3	13.6	16.6
Ensuring source of power is dependable	10.3	11.3	7.7	10.0	9.2	13.5	10.3	10.6	8.8	12.3	9.5	9.5
Existence of a jurisdiction or province-wide regulation or licensing agreement that prohibits or prevents use of other software	9.7	9.8	9.1	10.5	9.4	10.5	9.7	9.7	9.5	9.5	9.4	10.2
Finding enough time to integrate ICT into learning	36.7	39.2	32.7	30.1	36.9	35.9	36.7	37.7	27.0	34.3	37.3	38
Having sufficient funding for technology	66.8	68.0	65.4	62.8	67.8	63.9	66.8	67.2	63.3	65.1	65.8	69.3
Other	57.1	54.2	51.1 *	74.6	53.3	66.1	57.1	56.5	55.0 *	58.8	51.5	60.4

Source: Information and Communications Technologies in Schools Survey, 2003-2004

Footnotes

Symbols and abbreviations:

- ... Not applicable
- x Suppressed to meet confidentiality requirements of the *Statistics Act*
- * Numbers marked with this symbol have a coefficient of variation between 16.6% and 25% and are less reliable than unmarked numbers
- ** Numbers marked with this symbol have a coefficient of variation greater than 25% and less or equal to 33.3% and are very unreliable
- F Too unreliable to be published (coefficient of variation surpasses 33.3%)
- 0 Nul, zero or too small to be expressed

Infrastructure:

Notes:

1. Processor speeds are measured in Megahertz (MHz), with each MHz representing one million cycles per second (the number of times the computer processor is able to perform a task). Computers with low processor speed include those with processors in the range of 66-233 MHz (e.g. 486, Pentium® I). Computers with medium processor speed typically range in the area of 233 MHz all the way up to 1.4 GHz (Gigahertz) (e.g. Pentium® II/III, Apple™ G3). The most recent generation of processors on the market, classed as having high processor speed, are typically available in speeds of 1.3 GHz to 3.8 GHz and sometimes higher (e.g. Pentium® IV, Apple™ G5).

2. Computers with most recent operating systems were computers running with the latest version of operating systems (e.g. Windows™ NT/2000/XP, Mac™ OS X) at the time of the survey.

Source: Information and Communications Technologies in Schools Survey, 2003-2004

Connectedness:

Notes:

1. Processor speeds are measured in Megahertz (MHz), with each MHz representing one million cycles per second (the number of times the computer processor is able to perform a task). Computers with low processor speed include those with processors in the range of 66-233 MHz (e.g. 486, Pentium® I). Computers with medium processor speed typically range in the area of 233 MHz all the way up to 1.4 GHz (Gigahertz) (e.g. Pentium® II/III, Apple™ G3). The most recent generation of processors on the market, classed as having high processor speed, are typically available in speeds of 1.3 GHz to 3.8 GHz and sometimes higher (e.g. Pentium® IV, Apple™ G5).

2. Dial-up access is defined as "Regular dial-up telephone line with a modem".

3. The method to access the Internet is said to be "Always on" when the method used by the school is one of the following: cable modem, high-speed line (ISDN/DSL) or Frame relay, T1 line, optical fibre, fixed wireless (terrestrial) devices or Satellite connection.

Source: Information and Communications Technologies in Schools Survey, 2003-2004

Access:

Notes:

1. Frequency of access is established as follow: Computers that were often to always available outside instructional hours were defined as "frequently accessible". Computers that were rarely available or available sometimes were defined as "infrequently accessible". "Never accessible" was assigned in the cases where principals reported that their computers were never available outside instructional hours.

Source: Information and Communications Technologies in Schools Survey, 2003-2004

Teacher Skills:

Notes:

1. Technology applications were defined as frequently incorporated into teaching practices when they were used "most of the time" or "always".

Source: Information and Communications Technologies in Schools Survey, 2003-2004

Challenges:

Source: Information and Communications Technologies in Schools Survey, 2003-2004

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Challenges, school year 2003-04
Quebec

	All schools	Instructional Level of Schools			Location		Type		Size		
		Elementary	Secondary	Mixed	Urban	Rural	Public	Private	Small	Medium	Large
Extensive Challenges in using ICT...											
Hardware											
Obtaining sufficient number of computers	51.7	51.9	55.2	35.3	52.3	50.3	53.4	32.8	51.1	50.5	53.3
Ensuring computers and peripherals are up to date	57.4	59.5	50.1	54.9	54.9	63.6	59.4	35.1	62.6	52.3	56.9
Software											
Obtaining software which is specific enough or adaptable	41.8	41.7	39.8	50.9	39.5	47.6	43.2	30.4	46.1	39.8	39.7
Obtaining sufficient copies/licences of software for instructional purposes	55	56.4	51.8	46.8	54.8	55.4	56.3	42.5	55.1	53.5	56.2
Obtaining software in the language of instruction	18.8	19.4	18.1	13.5**	18.9	18.7	19	19.2*	19.1	19.3	18.2
Instruction											
Integrating computers in classroom instruction practices	42.8	41.8	46.5	42.8	43.7	40.7	43	42.2	40.7	41.9	45.6
Having a sufficient number of teachers supervising students using computers	28.9	31.1	22.9	20.9*	28.1	31.1	30	17.7*	28	29.1	29.7
Maintaining sufficient level of ICT in all subjects for teachers to provide adequate level of instruction	46.7	45.7	49.4	49.9	44.8	51.4	46.8	45.6	49.1	44.9	45.9
Internet											
Integrating Internet into instruction of low-achieving students	25.6	26.5	23.7	19.3*	25.1	26.9	25.9	24.5*	26.9	26	24.2
Finding enough time in the school's or teachers' schedule for using the Internet	29.1	29.4	27.9	30.1*	28.7	30.2	29.3	30.3	29.9	29.8	28
Having sufficient connections for simultaneous access to the Internet	30.1	32.4	22.1	30.0*	24.5	44.1	31.1	21.8*	42.3	24.6	23.9
Ensuring there is no information overload	20.8	21.5	17.1	26.1*	19.3	24.7	20.9	20.9*	24.7	17.1	20.4
Ensuring information obtained is of sufficient quality	31.8	32.6	29.2	29.9*	30	36.2	32.3	27.2	34.6	28.6	31.9
Other											
Finding space to integrate computers into the classroom appropriately	27	25.8	31.8	26.0*	29.5	20.9	26.5	31	22.1	28.2	30.5
Lack of knowledge, skills, interest and/or willingness of teachers to use computers	26.2	26.5	24.7	28.4*	27.7	22.5	26.9	20.5*	19.9	26.7	31.4
Obtaining adequate technical support/assistance for operating, maintaining computers and/or solving technical problems	32.9	33.8	28.9	35.3	32	35	34	22.1*	34.2	31.4	33
Having enough training opportunities for teachers	37.5	39.1	31.6	37.4	37	38.7	38.6	28	37.6	37.1	37.7
Ensuring ICT infrastructure is adequate for telecommunications	33.8	35.2	29	31.6*	28.4	47.2	34.9	24.1	45.1	29.8	27
Ensuring ICT infrastructure has anti-theft and anti-vandalism mechanisms	18.9	18	19.8	28.7*	18.2	20.5	19.2	18.4*	20.4	17.8	18.5
Ensuring source of power is dependable	15.9	18.3	9.6*	x	12.6	23.9	16.7	x	22.1	13.1	12.6
Existence of a jurisdiction or province-wide regulation or licensing agreement that prohibits or prevents use of other software	13.3	13.5	12.4	13.9**	13.2	13.3	13.7	x	12.2	14	13.7
Finding enough time to integrate ICT into learning	41.8	41.6	41.6	45.8	41.8	41.8	42.6	35.7	38.3	45.5	41.9
Having sufficient funding for technology	78.8	79.7	78.3	67.9	79.4	77.3	80	69.1	77.6	76.2	81.8
Other	50.9*	x	x	x	x	x	50.9*	x	x	x	x

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Challenges, school year 2003-04
Ontario

	All schools	Instructional Level of Schools			Location		Type		Size			
		Elementary	Secondary	Mixed	Urban	Rural	Public	Private	Small	Medium	Large	
Extensive Challenges in using ICT...												
Hardware												
Obtaining sufficient number of computers	36.8	36.4	39.3	31	38	31.4	38	29	35.5	35.7	38.5	
Ensuring computers and peripherals are up to date	50.2	49.5	53.6	45	51.1	46	50.8	46.4	49.5	49.3	51.4	
Software												
Obtaining software which is specific enough or adaptable	27.4	28	22.9	40.6	27.4	27.5	26.9	30.6	32.4	26.6	25.1	
Obtaining sufficient copies/licences of software for instructional purposes	35.3	34.4	37	42.7	35.3	35.2	34.5	40.4	37.8	32.9	35.6	
Obtaining software in the language of instruction	12.2	12.3	12.4	8.4**	12.7	9.8	13	6.9*	15.8	11.4	10.7	
Instruction												
Integrating computers in classroom instruction practices	30.7	33.6	21.8	21.7*	30.9	29.7	31.8	23.2	27.9	28.8	33.8	
Having a sufficient number of teachers supervising students using computers	22.2	24.4	16.2	13.3*	22	23.5	22.5	20.8	27.3	21.4	20	
Maintaining sufficient level of ICT in all subjects for teachers to provide adequate level of instruction	38.7	41.2	32.1	26.7	39.2	36.5	39.9	30.3	37.2	41.1	37.7	
Internet												
Integrating Internet into instruction of low-achieving students	20.3	23.2	12.4	x	20.4	20.2	20.9	15.9	22.7	20	19.3	
Finding enough time in the school's or teachers' schedule for using the Internet	36.8	41.1	25.3	17.1*	36.7	37.4	37.8	29.8	37.4	38.9	34.9	
Having sufficient connections for simultaneous access to the Internet	21.8	23.1	17.4	21.7*	21.3	24.1	21.1	27.2	29	18.7	20.2	
Ensuring there is no information overload	25.8	28.1	19.7	15.3*	26.3	23.7	26.2	22.7	26.9	24.7	26.1	
Ensuring information obtained is of sufficient quality	26.2	27.3	22.9	22.7*	26.3	25.5	25.8	28.6	30.7	23.5	25.7	
Other												
Finding space to integrate computers into the classroom appropriately	27.1	29.1	22	14.0*	26.9	28	28	20.8	25.8	26.1	28.5	
Lack of knowledge, skills, interest and/or willingness of teachers to use computers	17.9	19.5	12.4	14.6*	18.3	15.9	18.2	15.8	18	17.7	17.9	
Obtaining adequate technical support/assistance for operating, maintaining computers and/or solving technical problems	31.3	32.8	27.8	21.1*	31.1	32.3	32	26.3	31	30.4	32.2	
Having enough training opportunities for teachers	44.7	47.3	40	19.6*	45.3	42	47.4	26.5	39.5	43.5	48.7	
Ensuring ICT infrastructure is adequate for telecommunications	25.3	26.3	22.8	21.8*	24.8	28.1	25	27.8	26.3	24.5	25.5	
Ensuring ICT infrastructure has anti-theft and anti-vandalism mechanisms	16.8	15.1	21.6	21.8*	17.2	15	16	22.6	17.9	13.6	18.7	
Ensuring source of power is dependable	9.3	9.9	7.6	x	8.5	13.3	9.4	8.7*	11.4	9.2	8.2	
Existence of a jurisdiction or province-wide regulation or licensing agreement that prohibits or prevents use of other software	9.1	9.1	8.6	14.4**	8.9	10.2	8.9	11.2	8.1	9	9.9	
Finding enough time to integrate ICT into learning	35.2	38.2	27.9	18.1*	35.7	33	36.8	25	31.9	35.9	36.7	
Having sufficient funding for technology	63.6	63.3	64.7	62.3	64.4	59.8	64.2	59.5	59.7	63.8	65.7	
Other	56.4	54.6*	x	x	58.6	x	60.7	x	x	x	76	

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Challenges, school year 2003-04
Alberta

	All schools	Instructional Level of Schools			Location		Type		Size			
		Elementary	Secondary	Mixed	Urban	Rural	Public	Private	Small	Medium	Large	
Extensive Challenges in using ICT...												
Hardware												
Obtaining sufficient number of computers	37.5	38.4	34.8	38.6	39.8	29.1	36.9	42.9	37.8	37	37.9	
Ensuring computers and peripherals are up to date	53	53.8	49.2	55.1	54.5	47.7	52.1	60.1	53.6	52.4	53.2	
Software												
Obtaining software which is specific enough or adaptable	34.3	36.7	26.6	37.5	35	31.7	33.9	39	40.9	32.6	30.1	
Obtaining sufficient copies/licences of software for instructional purposes	41.2	43.2	33.6	44.9	41.5	40.2	40.4	48.7	44.7	39.8	39.5	
Obtaining software in the language of instruction	12.9	16.8	10	9.9*	14.8	5.7*	13.2	x	11.9	12.7	14	
Instruction												
Integrating computers in classroom instruction practices	24.2	23.6	20.9	27.7	25.3	19.9	23.8	24.4*	18.8	24	29.3	
Having a sufficient number of teachers supervising students using computers	14.5	14.2	11.5	17.6	14.5	14.5	13.8	19.5**	15.3	15.3	13	
Maintaining sufficient level of ICT in all subjects for teachers to provide adequate level of instruction	27.4	26.9	26.5	29	27.8	26.1	26.1	38.5	30	27.7	24.7	
Internet												
Integrating Internet into instruction of low-achieving students	17.9	22.2	13.3	16	17.9	18	17.9	17.6*	19.9	17	17.4	
Finding enough time in the school's or teachers' schedule for using the Internet	33.9	35.6	30.8	34.2	34.2	32.9	34.2	32.0*	33.2	35.7	32.5	
Having sufficient connections for simultaneous access to the Internet	25.5	24.6	17.6	34.1	23.1	34.5	24.4	36.4*	30.3	23.2	24.1	
Ensuring there is no information overload	24.7	27.7	18.1	26.1	25	23.4	25	21.0**	27.9	23.5	23.1	
Ensuring information obtained is of sufficient quality	26.3	30.4	22	24.1	26.7	25	26.9	20.1*	28.6	25.6	25.2	
Other												
Finding space to integrate computers into the classroom appropriately	27.1	26.3	27.8	27.7	28.4	22.5	27.9	19.8*	20.7	27.6	32.6	
Lack of knowledge, skills, interest and/or willingness of teachers to use computers	12.3	13	12	11.6	13.7	7.1*	12	15.3**	10.1	12.4	14.2	
Obtaining adequate technical support/assistance for operating, maintaining computers and/or solving technical problems	27	26	20.4	34.2	27.6	24.8	25.7	38.4	26.5	24.8	30	
Having enough training opportunities for teachers	29	30.4	26.8	29	31.5	20.1	29.1	29.8*	25.1	29.5	32.2	
Ensuring ICT infrastructure is adequate for telecommunications	26.8	26.2	22.8	31.2	25.6	31	26.5	29.5*	30.1	24	26.9	
Ensuring ICT infrastructure has anti-theft and anti-vandalism mechanisms	14.6	13.2	17.1	14.3	15.9	10.0*	14	18.9**	16.9	13.4	13.9	
Ensuring source of power is dependable	9.3	7.8	5.8*	14.5	8.2	13.3	9.2	11.5**	9.3*	8.4	10.3	
Existence of a jurisdiction or province-wide regulation or licensing agreement that prohibits or prevents use of other software	8.4	7.2	8.2*	10.4	7.8	10.4	8.5	x	9.1*	6.5	10	
Finding enough time to integrate ICT into learning	31.7	35	32.2	26.4	33.1	26.6	33	20.0*	30.6	31.9	32.5	
Having sufficient funding for technology	69.5	72	62.4	71.9	72.4	58.9	68.9	78.3	67.2	70.1	71	
Other	86	x	x	x	79.6	x	84.5	x	x	x	x	

