Sacramento City College
January 29, 2018

STUDENT TECHNOLOGY NEEDS AND DIGITAL SKILLS [1]

STUDENT AND FACULTY SURVEYS
SPRING 2017

The student and faculty surveys on student technology needs and digital skills were based on two surveys: (1) a 2012 dissertation by Victoria Rosario titled "Generational Differences in Technology Adoption in Community Colleges," which studied technology usage in the Los Rios Community College District, and (2) a 2014 survey by Jeff Karlsen titled "Faculty Survey: Student Technology Survey," which studied faculty expectations at Sacramento City College. In Spring 2016, the Library and the Learning Skills & Tutoring Center each submitted Equity Innovation Concept and Action Plan (EICAP) proposals on the topics of student technology needs and student digital literacy respectively. The two EICAP proposals were approved and over the course of Fall 2016 the two teams worked together with Student Equity representatives, with some input from Planning, Research & Institutional Effectiveness (PRIE) student equity research analyst. The team developed surveys for both faculty and students in order to compare faculty and student perceptions of student technology needs and digital literacy. In Spring and Fall 2017, the student and faculty surveys were administered. Faculty surveys were sent out via the faculty listserv. Student surveys were in both paper and digital forms to reach the largest segment of the population as possible, and to facilitate students with difficulties in technological access or skills. Paper surveys were distributed in specific professors' classrooms. There were a total number of 490 students and 123 faculty members participating in the surveys. This report summarizes the results of both surveys.[2]

The student survey asks questions about students' accessibility to technologies on campus and at home, their perceptions on their own comfortability and skills using technological applications and devices, and whether they think they need help with technology. The student survey also includes demographic questions. The faculty survey includes questions about faculty's perceptions on the importance of digital skills and technological applications/services required in their courses, their assessment of students' level of digital literacy, and how they would help students with digital requirements. The report starts with summarizing results for the student survey before moving to the faculty survey results. The Appendix shows response distributions by different student populations.

---

[1] This report is prepared by Lan Hoang, Research Analyst, SCC Research Office, at the request of the Education & Information Technology Committee.
[2] Background information was provided and drafted by Antonio Lopez, SCC Public Services Librarian

STUDENT SURVEY

DEMOGRAPHIC INFORMATION

The student survey participants are relatively representative of the college student populations by gender and race/ethnicity. There are more female than male participants. Asian, Hispanic/Latino, and White are the three largest race/ethnicity groups. The survey participants are overrepresented in the 20-24 age group (44.3%, compared to college-wide's 25.7% in Fall 2017 [3]). About 4% are veteran and 14% have disability (Table 1).

Table 1. Characteristics of student survey participants

Age	Number	Percent
< 20	104	21.2
20-24	217	44.3
25-39	116	23.7
40+	41	8.4
Decline to state	1	0.2
Unknown	11	2.2
Gender	**Number**	**Percent**
Female	277	56.5
Male	200	40.8
Non-binary	1	.2
Decline to state	3	.6
Unknown	9	1.8

Veteran	Number	Percent
Yes	20	4.1
No	470	95.9
Disability	**Number**	**Percent**
Yes	68	13.9
No	422	86.1
Race/Ethnicity	**Number**	**Percent**
African American	46	9.4
Asian	100	20.4
Filipino	16	3.3
Hispanic/Latino	133	27.1
Multi-race	17	7.1
Native American	3	0.6
Pacific Islander	3	0.6
White	135	27.6
Decline to state	8	1.6
Unknown	11	2.2
Total	**490**	**100**

Table 2 shows student participants' breakdown by the course area in for which they took the survey.

Table 2. Students' course areas (Survey question 1)

Course area	Number	Percent
ART	31	6.3
BUS	4	.8
COMM	15	3.1
ECE	41	8.4
ENG	77	15.7
ESL	22	4.5
GCOM	29	5.9
LIBT	23	4.7
MATH	15	3.1
NUTRI	87	17.8
PSYC	44	9.0
SOC	7	1.4
STAT	83	16.9
N/A	12	2.4
Total	**490**	**100**

[3] See more at SCC Institutional Effectiveness/Enrollment Report Fall 2017 https://goo.gl/nZNWD1

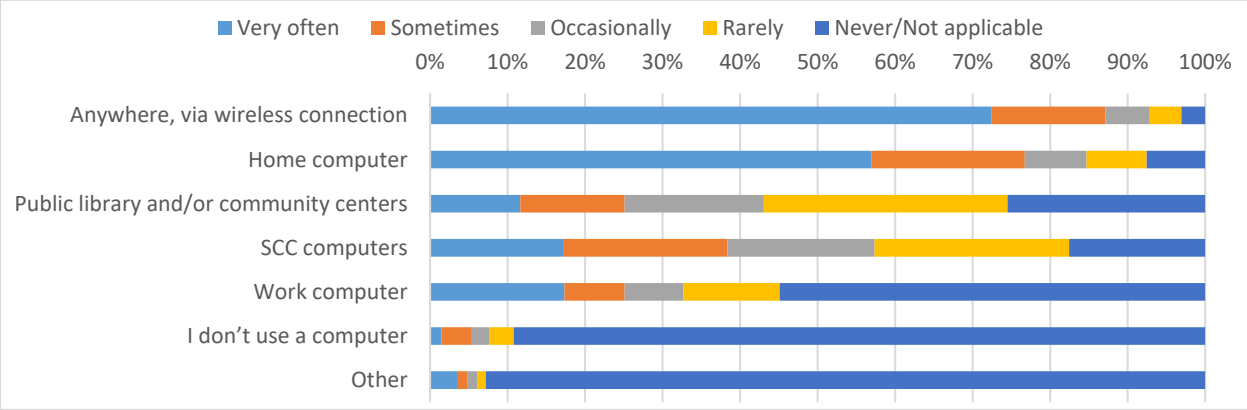
STUDENTS' ACCESSIBILITY TO TECHNOLOGIES ON CAMPUS AND AT HOME

Table 3 and Figure 1 illustrate students' accessibility to the Internet. A majority of the students access the internet very often, anywhere via wireless connection and home computer. Less than one fifth would use the college's computers or work computer for internet. About 12% of the students would use computers in public libraries or community centers. Some appear to use devices other than a computer to access the internet.

Table 3. Students' accessibility to the Internet

Question 2: How do you access the Internet?		Very often	Sometimes	Occasionally	Rarely	Never/Not applicable	Total[4]
Anywhere, via wireless connection	Number	355	72	28	20	15	**490**
	Percent	72.4%	14.7%	5.7%	4.1%	3.1%	**100%**
Home computer	Number	279	97	39	38	37	**490**
	Percent	56.9%	19.8%	8.0%	7.8%	7.6%	**100%**
Public library and/or community centers	Number	57	66	88	154	125	**490**
	Percent	11.6%	13.5%	18.0%	31.4%	25.5%	**100%**
SCC computers	Number	84	104	93	123	86	**490**
	Percent	17.1%	21.2%	19.0%	25.1%	17.6%	**100%**
Work computer	Number	85	38	37	61	269	**490**
	Percent	17.3%	7.8%	7.6%	12.4%	54.9%	**100%**
I don't use a computer	Number	7	19	11	15	430	**482**
	Percent	1.5%	3.9%	2.3%	3.1%	89.2%	**100%**
Other	Number	17	6	6	5	440	**474**
	Percent	3.6%	1.3%	1.3%	1.1%	92.8%	**100%**

Figure 1. Students' accessibility to the Internet



[4] Note that the "Total" cells are not always 490 due to missing data.

In terms of the frequency of using SCC computers available for students on campus (Table 4), less than 10% of the students use the college's computers daily. More than half would use once a month up to a few times a week. Almost a quarter of the students indicated that they did not use SCC computers.

Table 4. Students' frequency of using SCC computers

Question 3. How often do you use one of the Sacramento City College computers available for students on campus?	Number	Percent
Several times a day	22	4.5
Once a day	23	4.7
Several times a week	115	23.5
Once a week	71	14.5
Once a month	94	19.2
I do not use SCC computers	122	24.9
Other	40	8.8
Total	**490**	**100**

Table 5 summarizes students' accessibility to technological devices. Most students have a laptop or a cell/smartphone that allow use of internet applications. Most of the students also have Wi-Fi connection at home, over half of which is broadband internet. About half of the students have a desktop computer, an e-book reader device, or a game console. About one fifth have a land line phone at home and a quarter own an MP3 player.

Table 5. Students' accessibility to technological devices

Question 4. Do you currently own and/or have regular, reliable access to the following technologies?	Yes		No	
	Number	Percent	Number	Percent
Broadband internet access at home (high speed DSL, cable, etc.)	287	58.6	203	41.4
Home Wi-Fi connection	454	92.7	36	7.3
Desktop computer	231	47.1	259	52.9
Laptop or Netbook/Chromebook computer	403	82.2	87	17.8
Tablet computer (iPad, Galaxy tab, etc.)	217	44.3	273	55.7
Electronic book device or eBook reader, such as a Kindle or Nook	74	15.1	416	84.9
Smartphone with data plan that allows extensive use of internet applications	404	82.4	86	17.6
Cell or smartphone without data plan allowing extensive use of internet applications	123	25.1	367	74.9
Land line phone in residence	97	19.8	393	80.2
Game console (Xbox, PlayStation, PSP, Wii, etc.)	233	47.6	257	52.4
iPod or MP3 player	123	25.1	367	74.9

STUDENT NEEDS FOR TECHNOLOGICAL ASSISTANCE

The survey asks questions about student needs for assistance in terms of technological applications and devices in order to be successful in school. Table 6 and
Table *7* summarize students' perceptions on their needs for technological assistance. The technological applications that students need help the most are those that are specific to the courses they are taking (20%) and MS Office (16%). A number of students need help with library database (14%), D2L or Canvas (13%), and eServices (13%). As for technological devices, it appears that students need help the most with computers, both laptops (16%) and desktop computers (15%). Students also express needs for access to printers and free printing, and class clickers.

Table 6. Student needs for assistance with technological applications

Question 5. Do you need more help with any of the following technological APPLICATIONS to be successful in school?	**Yes**		**No**		**N/A**	
	N	**%**	**N**	**%**	**N**	**%**
Broadband internet access at home (high speed DSL, cable, etc.)	46	9.4	384	78.4	60	12.2
Home Wi-Fi connection	52	10.6	378	77.1	60	12.2
Land line phone in residence	5	1.0	425	86.7	60	12.2
D2L and/or Canvas	65	13.3	365	74.5	60	12.2
CourseConnect	24	4.9	406	82.9	60	12.2
Email	39	8.0	391	79.8	60	12.2
Gmail	39	8.0	391	79.8	60	12.2
eServices	64	13.1	366	74.7	60	12.2
G-Suite (like Google Drive: Docs, Sheets, Slides)	47	9.6	383	78.2	60	12.2
McGraw-Hill Connect	23	4.7	407	83.1	60	12.2
Microsoft Office (Word, Excel, PowerPoint)	76	15.5	354	72.2	60	12.2
MyMathLab	52	10.6	378	77.1	60	12.2
Online Websites (general internet use)	33	6.7	397	81.0	60	12.2
Social networking sites (Facebook, Pinterest, etc.)	20	4.1	410	83.7	60	12.2
Text messaging	18	3.7	412	84.1	60	12.2
Wordpress	30	6.1	400	81.6	60	12.2
Using the library database	68	13.9	362	73.9	60	12.2
Submitting coursework online: Dropbox or other cloud services	47	9.6	383	78.2	60	12.2
Resources and programs specific to the courses I'm taking, like electronic medical records software, music software, image editing software, etc.	99	20.2	331	67.6	60	12.2
I don't know.	104	21.2	326	66.5	60	12.2

Table 7. Student needs for assistance with technological devices

Question 6. Do you need more help with any of the following technological DEVICES to be successful in school?	Yes		No		N/A	
	N	%	N	%	N	%
Desktop computer	72	14.7	379	77.3	39	8.0
Laptop or Netbook/Chromebook computer	76	15.5	375	76.5	39	8.0
Tablet computer (iPad, Galaxy tab, etc.)	40	8.2	411	83.9	39	8.0
Electronic book device or eBook reader, such as a Kindle or Nook	33	6.7	418	85.3	39	8.0
Smartphone with data plan that allows extensive use of internet applications	37	7.6	414	84.5	39	8.0
Cell or Smart phone without data plan allowing extensive use of internet applications	20	4.1	431	88.0	39	8.0
Game console (Xbox, PlayStation, PSP, Wii, etc.)	25	5.1	426	86.9	39	8.0
iPod or MP3 player	12	2.4	439	89.6	39	8.0

Over a quarter of students indicate that they do not have access to someone who can help when they have technological problems related to classwork (Table 8). Students mentioned that sometimes they could get help from professors, library/lab staff, and tutors. Some would use google to search for solutions.

Table 8. Students' accessibility to technological assistance

Question 8. Do you have access to someone who can help you when you have problems with technology that is required for classwork?	Number	Percent
No	127	26.0
Yes	331	67.8
Other	30	6.1
Total	**488**	**100**

STUDENT DIGITAL SKILL LEVELS

A majority of the students express that they are comfortable and skilled in using a computer (scale 4 and 5, 78%). Only a few students mention that they are uncomfortable and not at all skilled in using a computer (scale 1 and 2, 6.7%) (Table 9).

Table 9. Students' computer skill levels

Question 7. How comfortable and proficient are you using a computer overall?	Scale	N	%
Very uncomfortable and not at all skilled	1	11	2.2
	2	22	4.5
	3	77	15.7
	4	145	29.7
Very comfortable and skilled	5	234	47.9
	Total	**489**	**100**

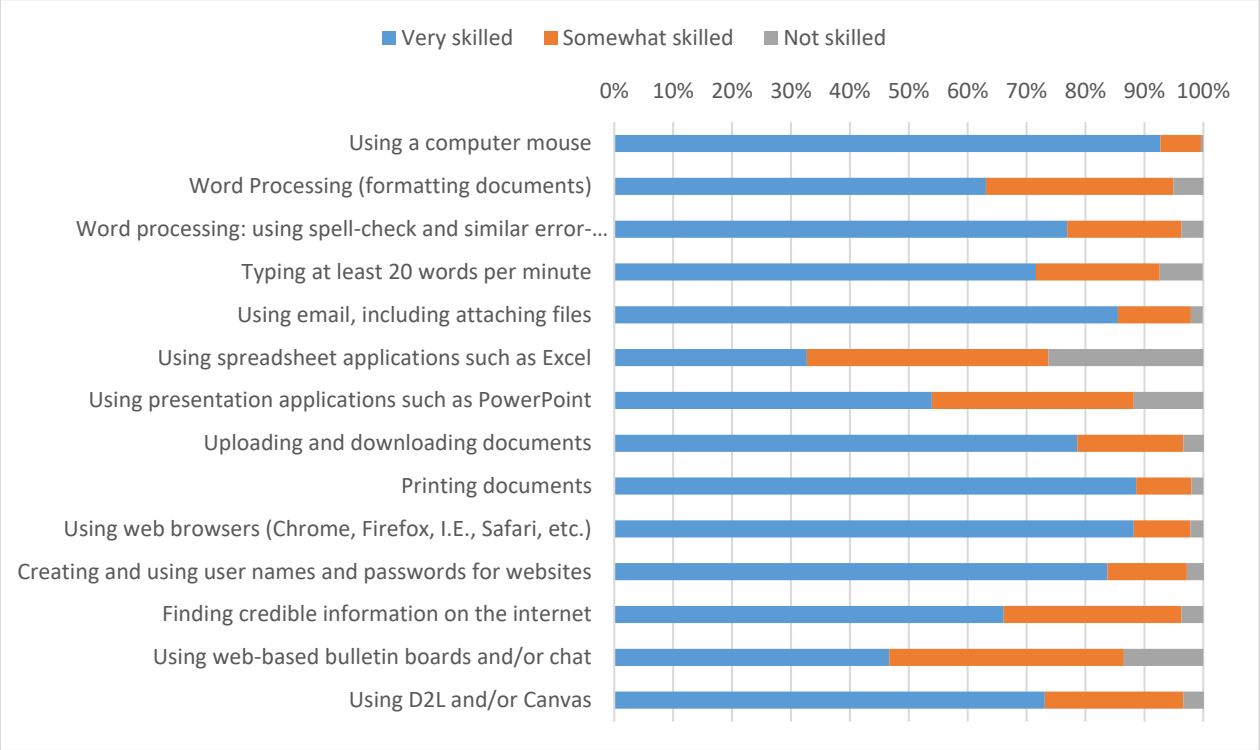
Table 10 and Figure 2 shows students' proficiency levels in specific skills. While a majority of the students indicate that they are proficient or somewhat skilled in most of the skills surveyed and only a few stated otherwise, it is noteworthy that over a quarter of them said that they were not skilled in spreadsheet application. Presentation applications and web-based bulletin boards and/or chat also have a higher number of students who felt they are not skilled.

Table 10. Students' proficiency in specific skills

Question 9: How would you rate your proficiency in the following skills?		Very skilled	Somewhat skilled	Not skilled
Using a computer mouse	Number	454	34	2
	Percent	92.7%	6.9%	0.4%
Word Processing (formatting documents: setting margins, indenting, tabs, spacing, inserting page numbers, etc.)	Number	309	156	25
	Percent	63.1%	31.8%	5.1%
Word processing: using spell-check and similar error-checking	Number	377	95	18
	Percent	76.9%	19.4%	3.7%
Typing at least 20 words per minute	Number	351	103	36
	Percent	71.6%	21.0%	7.3%
Using email, including attaching files	Number	419	61	10
	Percent	85.5%	12.4%	2.0%
Using spreadsheet applications such as Excel	Number	160	201	129
	Percent	32.7%	41.0%	26.3%
Using presentation applications such as PowerPoint	Number	264	168	58
	Percent	53.9%	34.3%	11.8%
Uploading and downloading documents (e.g. attaching to email or D2L dropbox, saving to flash drive, etc.)	Number	385	88	17
	Percent	78.6%	18.0%	3.5%
Printing documents	Number	434	46	10
	Percent	88.6%	9.4%	2.0%
Using web browsers (Chrome, Firefox, I.E., Safari, etc.)	Number	432	47	11
	Percent	88.2%	9.6%	2.2%
Creating and using user names and passwords for websites	Number	410	66	14
	Percent	83.7%	13.5%	2.9%

Finding credible information on the internet	Number	324	148	18
	Percent	66.1%	30.2%	3.7%
Using web-based bulletin boards and/or chat	Number	229	195	66
	Percent	46.7%	39.8%	13.5%
Using D2L and/or Canvas	Number	358	115	17
	Percent	73.1%	23.5%	3.5%

Figure 3. Students' proficiency in specific skills



Statistical tests (chi-square tests) were performed to examine whether students' proficiency in overall computer skills and specific skills are dependent on students' age, gender, race/ethnicity, disability, and veteran status. Table 11 lists skills with responses significantly differed by group membership ($p < .05$) (age, gender, race/ethnicity, disability, and veteran). Please refer to the Appendix for distributions of responses by groups. The results indicate that students in the 40 or more year-old group and students with disability are less skilled in overall computer skills and certain specific digital skills. Female students seem to be more comfortable with their printing skills than their male peers. By race/ethnicity, there is much variation in skills specific to using spell-check and error-checking function in word processing. Students with veteran status seem to be somewhat more skilled in using spell-check and similar error checking in word processing than non-veteran students. Note that some of the student subgroups have very small number and thus caution should be taken when interpreting response distributions illustrated in the Appendix.

Table 11. Items with responses significantly differed by group membership

Skills	Age	Gender	Race	Disability	Veteran
Using a computer overall?	✓			✓	
Using a computer mouse	✓				
Word Processing (formatting documents)	✓			✓	
Word processing: using spell-check and similar error-checking	✓		✓	✓	✓
Typing at least 20 words per minute	✓			✓	
Using email, including attaching files	✓				
Using spreadsheet applications such as Excel	✓			✓	
Using presentation applications such as PowerPoint	✓			✓	
Uploading and downloading documents (e.g. attaching to email or D2L dropbox, saving to flash drive, etc.)	✓			✓	
Printing documents		✓			
Using web browsers (Chrome, Firefox, I.E., Safari, etc.)	✓			✓	
Creating and using user names and passwords for websites	✓			✓	
Finding credible information on the internet					
Using web-based bulletin boards and/or chat	✓			✓	
Using D2L and/or Canvas	✓				

ADDITIONAL INFORMATION

The student survey also asked questions about whether students use other word processing applications other than MS Word and how often students use their Los Rios Gmail account. More than half of the students use Google Docs or other software instead of MS Word (Table 12). Some of the word processing applications that students use include Pages on Mac, Adobe Acrobat, WordPerfect, Evernote, and Open Office.

Table 12. Students' use of word processing applications

Question 10. Do you use Google Docs or other software instead of Microsoft Word?	Number	Percent
No	188	38.4
Yes	248	50.6
Other	54	11.0
Total	**490**	**100**

Most of the students would check their Los Rios Gmail account at least weekly or daily. About 24% set up automatic email forwarding from their Los Rios Gmail to their personal email account. Some students rarely check their Los Rios Gmail (15%) while a few never accessed it (3%) (Table 13).

Table 13. Students' Los Rios Gmail account access frequency

Question 11. Your Los Rios Gmail account	Number	Percent
I check it every day, at least.	153	31.2
I check it once or twice a week.	129	26.3
I have it set up to forward to my personal email account.	115	23.5
I have not accessed it at all.	14	2.9
It is set up, but I rarely/never check it.	73	14.9
N/A	6	1.2
Total	**490**	**100**

FACULTY SURVEY

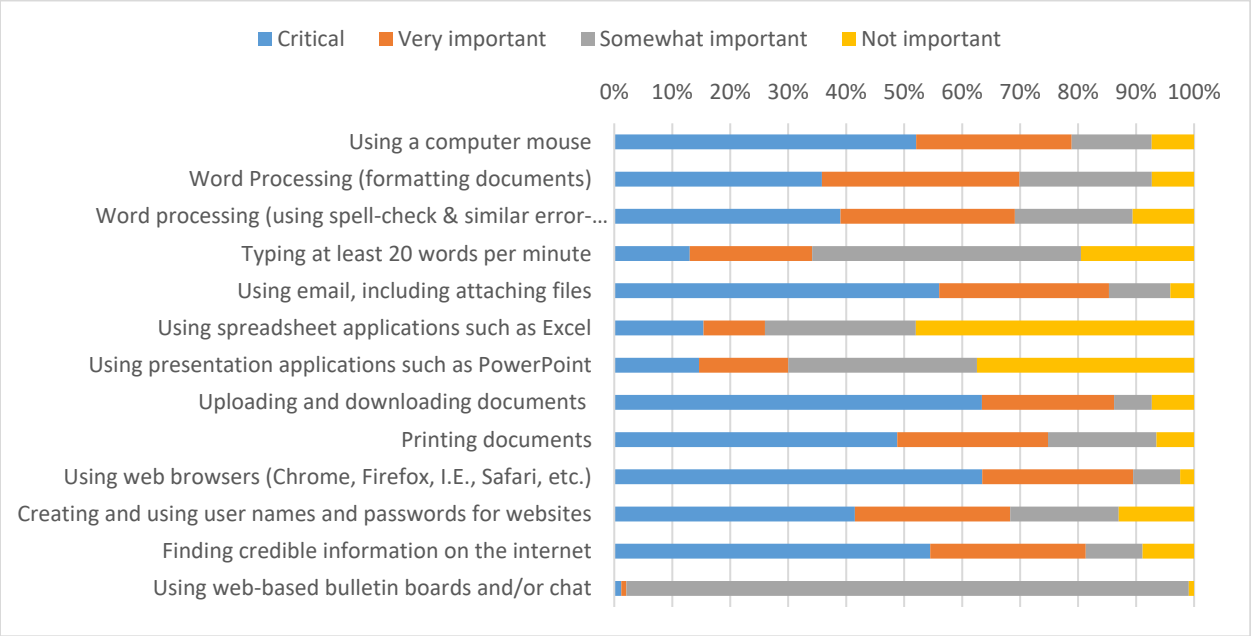
FACULTY PERCEPTIONS ON THE IMPORTANCE OF SKILLS TO SUCCEED AND APPLICATIONS/SERVICES REQUIRED

The faculty survey asks faculty about their perceptions about the importance of digital skills in their course success (Table 14) and the applications/services that they require in their classes (Table 15). A majority of faculty rated word processing skills as very important or critical (70%) while not as many rated spreadsheet and presentation applications skills at the same level of importance (26% and 30% respectively). Besides the basics such as using a computer mouse, emails and web browsers, some of the most important skills include printing, retrieving and uploading documents in email/D2L, and finding credible information in the internet (Table 14 and Figure 4).

Table 14. Faculty perceptions on the importance of digital skills in course success

Question 1: How important is it for students to have the following skills in order to succeed in at least one of the classes you teach?		**Critical**	**Very important**	**Somewhat important**	**Not important**
Using a computer mouse	Number	64	33	17	9
	Percent	52.0%	26.8%	13.8%	7.3%
Word Processing (formatting documents: setting margins, indenting, tabs, spacing, inserting page numbers, etc.)	Number	44	42	28	9
	Percent	35.8%	34.1%	22.8%	7.3%
Word processing: using spell-check and similar error-checking	Number	48	37	25	13
	Percent	39.0%	30.1%	20.3%	10.6%
Typing at least 20 words per minute	Number	16	26	57	24
	Percent	13.0%	21.1%	46.3%	19.5%
Using email, including attaching files	Number	69	36	13	5
	Percent	56.1%	29.3%	10.6%	4.1%
Using spreadsheet applications such as Excel	Number	19	13	32	59
	Percent	15.4%	10.6%	26.0%	48.0%
Using presentation applications such as PowerPoint	Number	18	19	40	46
	Percent	14.6%	15.4%	32.5%	37.4%
Uploading and downloading documents (e.g. attaching to email or D2L dropbox, saving to flash drive, etc.)	Number	78	28	8	9
	Percent	63.4%	22.8%	6.5%	7.3%
Printing documents	Number	60	32	23	8
	Percent	48.8%	26.0%	18.7%	6.5%
Using web browsers (Chrome, Firefox, I.E., Safari, etc.)	Number	78	32	10	3
	Percent	63.4%	26.0%	8.1%	2.4%
Creating and using user names and passwords for websites	Number	51	33	23	16
	Percent	41.5%	26.8%	18.7%	13.0%
Finding credible information on the internet	Number	67	33	12	11
	Percent	54.5%	26.8%	9.8%	8.9%
Using web-based bulletin boards and/or chat	Number	37	28	30	28
	Percent	30.1%	22.8%	24.4	22.8%

Figure 4. Faculty perceptions on the importance of digital skills in course success



In terms of applications and services required for classes, D2L/Canvas and MS Office are most frequently required. Over one third require library databases and Dropbox/cloud services (Table 15).

Table 15. Applications and services required for classes

Question 6. What applications and services do you require your students to access?	Yes		No	
	Number	Percent	Number	Percent
D2L or Canvas	99	80.5	24	19.5
G-Suite (Google Apps for Education, or GAFE, including Google Docs, Sheets, Forms, etc.)	14	11.4	109	88.6
MyMathLab	3	2.4	120	97.6
Wordpress	8	6.5	115	93.5
CourseConnect	6	4.9	117	95.1
CengageBrain	3	2.4	120	97.6
Microsoft Office, including Word, Excel, PowerPoint, etc.	64	52.0	59	48.0
Word processing software, like Pages, Open Office, etc.	33	26.8	90	73.2
Resources and programs specific to the courses I teach, e.g., electronic medical records software, music software, image editing software, etc.	19	15.4	104	84.6
Library databases	45	36.6	78	63.4
Elsevier products	3	2.4	120	97.6
"Social networks like Twitter, LinkedIn, etc."	10	8.1	113	91.9
Submitting course work online: Dropbox or other cloud services	47	38.2	76	61.8

FACULTY ASSESSMENT OF STUDENT DIGITAL LITERACY

Only 23% of the faculty respondents indicated that they assessed their students' digital literacy needs (Table 16). Across all course levels, about a quarter of the faculty (22-27%) teaching at each level think that between 5-10% of their students possess a digital skill level so low it might negatively affect course success (Table 17). In developmental classes, about one fifth of the faculty responded that up to half of their students might have a reduced chance of success due to low level of technological proficiency. This number is 18% in introductory classes (i.e. classes without prerequisites) and 11% in transfer level classes.

Table 16. Do faculty assess their students' digital literacy needs?

Question 3. Do you assess your students' digital literacy needs?	Number	Percent
No	93	76.9
Yes	28	23.1
Total [5]	**121**	**100**

Table 17. Faculty perceptions on the number of students whose level of technological proficiency reduces their chances of success

Question 7 - 9	Developmental classes		Introductory classes		Transfer level classes	
	Number	Percent	Number	Percent	Number	Percent
None	0	0.0	3	3.3	3	3.2
Less than 5%	8	13.8	11	12.2	28	29.5
5-10%	15	25.9	24	26.7	21	22.1
11-20%	6	10.3	14	15.6	16	16.8
21-30%	9	15.5	12	13.3	12	12.6
30-50%	11	19.0	16	17.8	10	10.5
51-75%	8	13.8	8	8.9	4	4.2
More than 75%	1	1.7	2	2.2	1	1.1
Total	**58**	**100**	**90**	**100**	**95**	**100**

WHAT DO FACULTY DO TO HELP STUDENTS WITH DIGITAL NEEDS?

The survey asks questions about how much class time faculty use for teaching technological tools required in their classes (Table 18) and the resources that they would refer students to for technological assistance (Table 19). Over 31% of the faculty responded that they spent an average of about 5-10% of each class on teaching technology tools required in their classes while a quarter

[5] Note that the "Total" cells are not always 123 due to missing data.

of the faculty stated that they would use office hour or refer students to other resources. A number of faculty would spend an hour or two at the beginning of the semester on this matter (about 13%) (Table 18).

Table 18. Amount of class time teaching technology tools.

Question 10. How much class time, on an average day, do you devote to teaching technology tools that you think students should already understand how to use?	Number	Percent
About 5-10% of each class, on average	35	31.3
About 20% of each class, on average	4	3.6
An hour or two at the beginning of the semester	14	12.5
3 or more hours at the beginning of the semester	7	6.3
I try not to use class time for this. I tell students to see me during office hours or direct them to other resources.	31	27.7
I don't teach these skills.	21	18.8
Total	**112**	**100**

In terms of resources to which faculty refer students for technological assistance, most faculty respondents indicate that they would help students during office hours or by appointment (81%). About half of the faculty responded that they would refer students to the Learning Resource Center, tutoring at computer labs, or their classmates. About 30% of the faculty refer to district helpline for D2L/Canvas, workshops, or online tutorials (Table 19). Furthermore, some faculty also specifically mentioned referring students to Community of Care, the new Student Tech Help Center, the help section in class manual, LAMP mentors, and Student Tech Help Desk

Table 19. Resources that faculty refer students to for technological assistance

Question 11. If you know or suspect a student is struggling with technology, what resources (SCC or otherwise) do you advise them to use?	Yes		No	
	Number	Percent	Number	Percent
Learning Resource Center	73	59.3	50	40.7
Tutoring help at one of the other computer labs	72	58.5	51	41.5
Help them during office hours or by appointment	100	81.3	23	18.7
D2L/Canvas helpline at district	36	29.3	87	70.7
Suggest workshops	35	28.5	88	71.5
Online resources like Pilot, YouTube, etc.	41	33.3	82	66.7
Have classmates help	61	49.6	62	50.4
Suggest a skills-specific class	10	8.1	113	91.9
Suggest a lower level class	8	6.5	115	93.5

Specific to helping students understand how to use the LMS (D2L or Canvas), most faculty expressed that they would help students during office hours or through emails. Other common methods include using class time for demonstration, referring to workshops, giving quizzes to make sure students' accessibility and skills required, or developing video/website/other sources

for their specific requirements (Table *20*). Faculty also mentioned referring students to Canvas student help guide, field questions and demonstration during lab time, OEI resources and D2L links to videos and help provided by the platform, tech support and computer labs on campus, or online learning tutorial videos.

Table 20. How do faculty ensure students understand how to use LMS?

Question 4. How do you ensure that your students understand how to use the LMS (D2L or Canvas)?	Yes		No	
	Number	Percent	Number	Percent
I don't do anything	10	8.1	113	91.9
I don't use the LMS	12	9.8	111	90.2
Refer them to a self-registration class	16	13.0	107	87.0
Refer them to a workshop	26	21.1	97	78.9
Devote fewer than 30 minutes of class time to demonstrating/explaining	48	39.0	75	61.0
Devote more than 30 minutes of class time to demonstrating/explaining	35	28.5	88	71.5
Help them during office hours or via email	81	65.9	42	34.1
Refer them to other sources	56	45.5	67	54.5
I give a quiz to make sure they have accessed and understood the sources I require	23	18.7	100	81.3
I developed video/website/other sources for my specific requirements.	19	15.4	104	84.6

ADDITIONAL INFORMATION AND COMMENTS

The survey asks additional questions specific to the choice between MS Office and Google Docs/OpenOffices and helping students use their Los Rios Gmail. Most of the faculty think that it is very important or critical for students to use MS Office for their assignments, as opposed to free software like Google Docs or OpenOffice (Table 21). While almost half of the faculty indicated that they would not teach students how to use their Los Rios Gmail because they assume the students already knew how, about 40% of the faculty said that they would spend 5-15 minutes to make sure that their students understand how to use their Los Rios Gmail (Table 22).

Table 21. Faculty perceptions on the importance of using MS Office for assignments

Question 2: How important is it for students to use Microsoft Office for your assignments, as opposed to free software like Google Docs or OpenOffice?		Critical	Very important	Somewhat important	Not important
	Number	44	42	28	9
	Percent	35.8%	34.1%	22.8%	7.3%

Table 22. Amount of class time devoted to helping students use Los Rios Gmail

Question 5. How much class time do you devote to ensuring that students understand how to use their Los Rios Gmail?	Number	Percent
None; I assume they know how.	60	48.8
None; it isn't important for my classes.	2	1.6
15-30 minutes	11	8.9
5-15 minutes	47	38.2
More than 30 minutes	2	1.6
Total	**123**	**100**

A majority of the faculty are interested in attending a Flex about how to integrate digital literacy into their classes (Table 23).

Table 23. Faculty's interest in attending a Flex about integrating digital literacy into classes

Question 12. Would you be interested in attending a Flex about how to integrate digital literacy into your classes?	Number	Percent
No	48	40.3
Yes	71	59.7
Total	**119**	**100**

As for preferred communication methods, most of the faculty stated that they prefer communication through emails. Some faculty also mentioned interests in receiving information through e-packages or flyers, departmental meetings, announcement on LMS log-in page, Workshops, online webcasts, flex, campus calendar, PowerPoint presentation, posts on websites, tutorial videos.

The last question on the faculty survey asks faculty to provide additional thoughts/comments. Below is a compilation of faculty comments/concerns regarding the overall technical proficiency of students in their classes.

Question 14. What comments or concerns do you have regarding the overall technical proficiency of students in your classes?
Their math prerequisites are not what they should be from required math classes
The students need help to get through school and studying.
Have technical proficiency at entry or information literacy as a graduation competency ever advanced beyond discussion stages?
Students need get help from their class mates.

We place too much emphasis on digital literacy and it detracts from teaching subject matter. D2L and Canvas can distance us from our students. I teach in the summer and have hours to deal with students face-to-face. I'm classified staff the other 9 months, so it's difficult to get training on Canvas and apply it while dealing with my classified position. Most workshops are for instructors converting from D2L to Canvas. I used engrade.com for years and liked it, but now it has been deemed "not secure." Too bad--it worked for my purposes, but there's no way I wish to violate FERPA. I'm not anti-tech, but I want to focus on my subject matter which is writing. I'm more interested in students' actual literacy because I do teach developmental courses. I will teach both if time permits, but I prioritize the teaching of English because they're going to encounter Canvas in all other courses and learn it. And teaching writing takes a lot of time and practice. I don't like to confuse students with new technology. That being said, I am trying to learn Canvas this semester, but I'd really rather concentrate on teaching and developing materials. . I don't think Canvas is better than engrade.com. And I am available to explain things to my students via email and phone 24/7. My students are fairly tech savvy already for the most part. They can generally master technology with more ease than say, sentence structure or standard usage. And they love to play with their phones in class.

I would like to see a required half unit or 1 unit course for intro to technology for all students. The course can be challenged if they test out of it.

It's definitely an equity issue. Poor, black, and older students need the most help.

Aside from technical proficiency, I think it's important to recognize that not all of our students are using technology as much as we think they are. I have had online students tell me they don't even own a computer.

I do not require my students to use technology in my classes. I use Canvas to update their grades and post handouts. I always handout physical copies of handouts. Sometimes, students will ask for a grade update or for extra copies of the handouts. I will look up the information for them or print out the copies myself.

When I used software for Math homework I would spend 5-10 minutes on the first day showing students what the login process looks like and how to submit an answer. They would receive a physical handout with instructions. If anyone had questions I asked them to visit my office hours so we could login together. Students reported that they had difficulty remembering to go online and do homework, so I switched back to paper homework.

Limited outreach to students about Canvas is a big concern; many online students don't know the class is in Canvas, didn't get messages about it sent to their Los Rios email, couldn't find the class on D2L, and gave up.

It's hard to pinpoint how much help a student will need as it seems to fluctuate from class to class. One semester I may have one student that needs additional help while other semesters it may be half the class. I don't know if the district has drop in style workshops for basic computer literacy skills but that might be helpful for a student that needs additional help in one area, for example Word formatting or email functions.

I provide tutorial videos that I created, but some students are not good at following instructions. That's what I am most concerned.

Not only are students unskilled in using technology, they are afraid of it. Our society thinks people in their 20s are better with technology than older folks and this is simply not true. Students know how to use phones, they do not really know how to use computers and it is going to really hurt them in the workplace.

The students' technical proficiency, in many cases, seems to be more advanced than basic reading and writing skills.

I am greatly concerned that students don't know enough about using technology needed to succeed in class today.

no comment

I'm concerned that Los Rios does not have a graduation requirement of digital literacy, either through coursework or proficiency testing.

One big concern is that many students in my developmental classes do not have a computer or laptop and do not have internet access at home. They try to do everything on their phones.

The students who have trouble with technological proficiency also tend to be the students who have learning disabilities. Perhaps DSPS could develop workshops, etc. for these students. These students (those with disabilities) need workshops taught by instructors who can 'reach' the learning disabled students.

I'm concerned about students who have trouble using computers on campus because they are different from their computers at home.

Students in beginning-level classes (6-4 levels below transfer) assume that digital literacy is unimportant and that faculty should accept whatever the students choose to turn in. They need to be informed at time of admission of the technology requirements of a college education.

there are not enough computer labs for us to practice in regularly

I am concerned that not making sure students have these skills will seriously affect their ability to compete in transfer level classes.

I'm teaching only introductory classes right now and we don't have access to computers in the classroom. I have asked students to try and type some of their homework and out of class writing assignments but quite a few don't have computers and some have no or very little experience with any computer work. I think it would be great to have some computer training for even the lowest level esl classes.

The district does not do enough to vet out students' digital literacy skills. If it is evident digital literacy skills are necessary (if not this survey would not have been created) then I believe it is the district's or college's responsibility to teach these skills prior to student enrolling in my transfer level courses. I do not have time to teach content and these skills in one semester.

I teach math so it is not required for them to type papers but I know my students struggle with email (accessing, responding, linking it to other accounts, etc...) and it concerns me that they may be struggling with technical issues in other classes.

12 years ago I devoted an entire lab session to help students interact with the technology in each of my courses. 6 years ago I started using the "extra office hours" to reserve a computer lab for students needing extra help - no one attended. I receive minimal questions from students using technology in my courses even though I teach with a web-enhanced format. Of course, the student in my courses must pass Math 100 or test into Math 120 to take the courses that I teach, so I am interacting with a subset of the general student population at SCC.

overall, in accounting courses,, I find the students to be very technologically proficient

Very high proficiency

Generally I find students that have some technical proficiency do better. I would love students to be able to typeset mathematical equations and do more programming in Excel or R as part of the course, but so far the level of technical proficiency coming in is too low to generally take the class in this direction.

I would like to be able to offer workshops to my ENGWR 51 students who struggle with technology. At the beginning of the term, they could use help in formatting a document and learning how to use Word.

Students in my entry-level classes have differing levels of digital literacy, from total novice to advanced, which makes it difficult to do any training in class. Some students can't even hold the mouse right and immediately fall behind while others get bored and start distracting the other students.

IN math using a calculator is a critical skill. You might include questions about that in your next survey.

Most are proficient. Those that need help are easily and quickly identified. Few concerns.

The main way I see student struggling is not in the class I teach. It is in the Center that I run. We see students who have problems with Canvas, D2L, and how to format in Microsoft Word. Resources for getting help with this have not been consistent. Sometimes someone is in the computer lab who can help them; sometimes no one is.

I believe that the VAST majority of time within my classes should be spent on the content related to the course. I believe technology- resources should be available to students and that students should be assessed and then encouraged to take advantage of the available resources. Encouraging initiative and "starting at the beginning" can go a long way in terms of long-term student success.

I think it is a significant need for all students. If they have not taken classes in high school that cover the basics of keyboarding, Word, PPT, Excel, email, web research, etc., then there is the potential for them to struggle with skills that most of us take for granted. Thanks for asking.

Sometimes their erratic thinking patterns and literacy issues prevent them from using technology effectively. For example, incomprehensible e-mail requests.

There are two things going on here....technical proficiency and access. Some our students are great technically but if all they have if their phone for assignments that is tough. A printer stations for phones and email would be wonderful. Most use their phones because they don't have printers or real work stations. They are very creative with their on line skills but sometimes limited by the hardware they can afford. We shouldn't assume our students have access to computers and printers because many don't. They put together a patchwork system with phones, friends with printers, and getting faculty to help them.

This has reminded me that I need to help my lower level classes with technology. Thanks!

maybe we should add content or tutorial/tutoring links to the LMS log-in pages

Basic Math class low proficiency; Intermediate Algebra adequate proficiency for what we do

I am concerned.

I teach tech so must students are proficient.

My students tend to be fairly proficient, though there are specific skill sets that they need to learn in my course, but that is built into the course itself.

Students with more technical proficiency usually do better in the class.

Majority are technically proficient; their skillsets need application direction and "polish".

I think we assume students have more literacy than they do.

none

My biggest concern is access.

Students get frustrated by technology and end up leaving the college.

It's important that my lower level students have access to the computer lab during class time. That way they can bring themselves up closer to parity.

Regarding STAT 300 classes, the students are should know how to use a spreadsheet program and should be learning a programming language. Many do, but many don't. We she teach these things, and I should have the resources to require R (a widely used open source programming language designed for statistical analysis) be used for assignments in my statistics classes. I'd also like cheap tablets with stands and keyboards for my students to use R or a spreadsheet application in class (this would only cost about $50-$100 per student, less than a TI-84). My STAT 300 students know how to use a computer, but that's not enough in 2017 - they should have a basic knowledge of a spreadsheet tool and a high-level programming language (e.g. R, Python, or MATLAB/Octave).

Should be part of SCC's assessment testing.

Access to computers for home use.

My students seem to be doing fine

I don't really have a problem too often. Between 0-2 students per semester have trouble out of about 125 students total.

Technology proficiency classes for students is a good option.

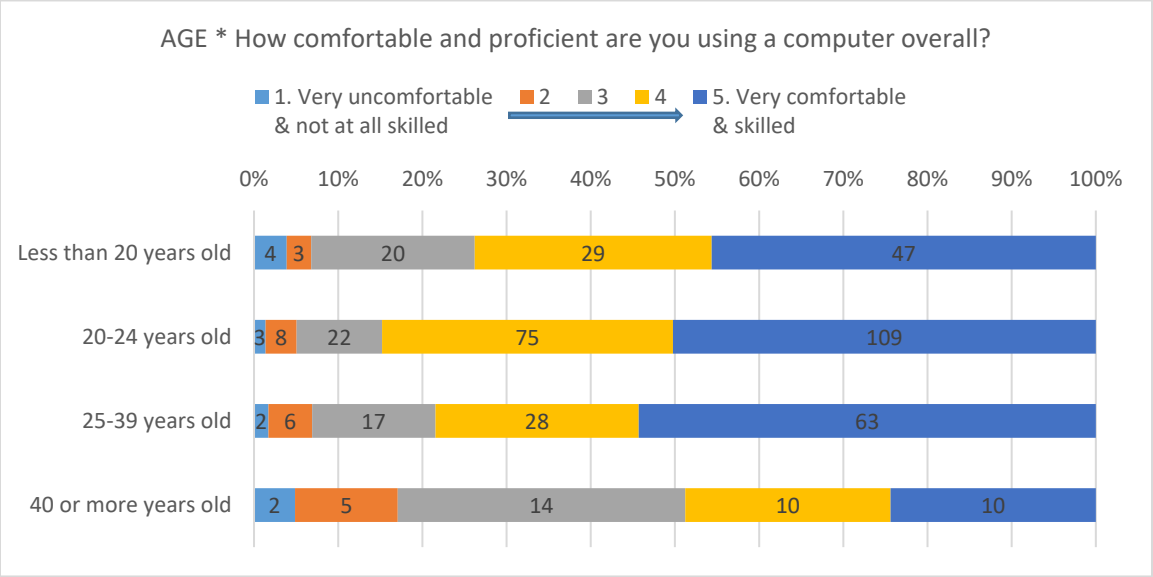
I believe some students are taking the class to increase their GPA and know the skills already. The other students are able to benefit from the knowledge their partner's share with them during class.

APPENDIX - RESPONSE DISTRIBUTION AMONG STUDENT GROUPS

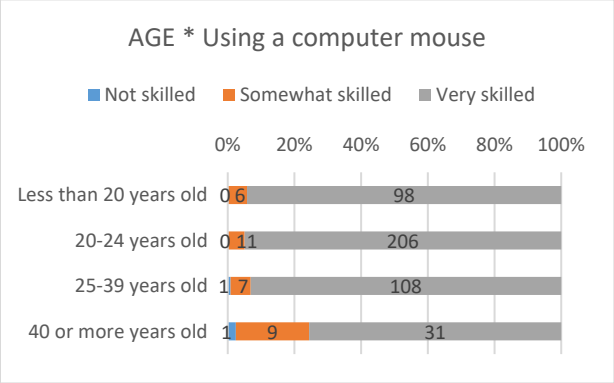
This appendix displays distribution of responses by different student groups for question items that were found to be statistically significant in Student Digital Skill Levels in the Student Survey. Note that missing data categories are not shown.

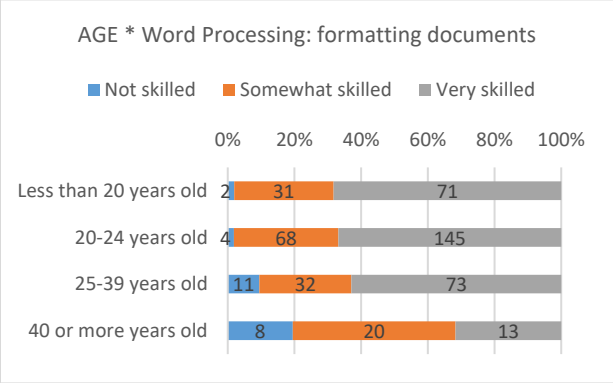
1. DISTRIBUTION BY AGE GROUPS

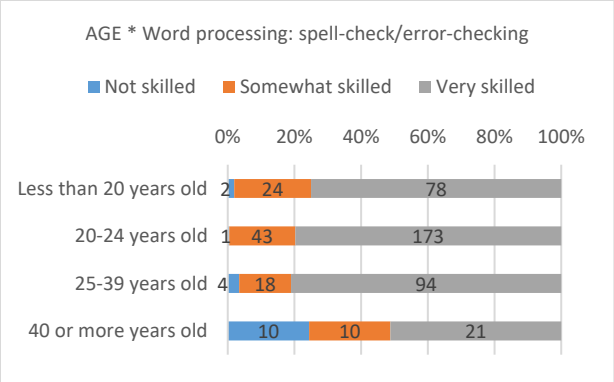
Question 7. How comfortable and proficient are you using a computer overall?

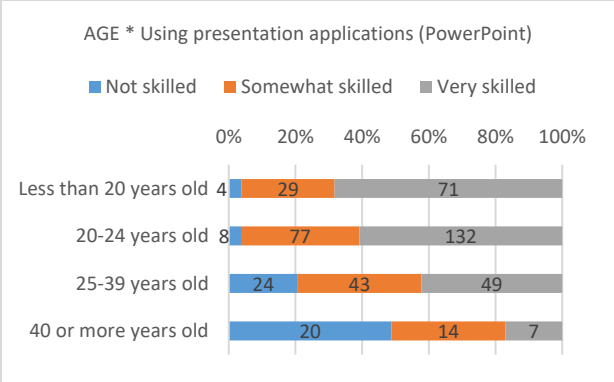


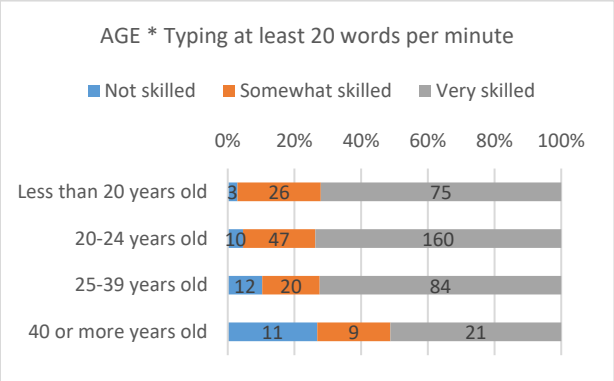
Question 9. How would you rate your proficiency in the following skills?

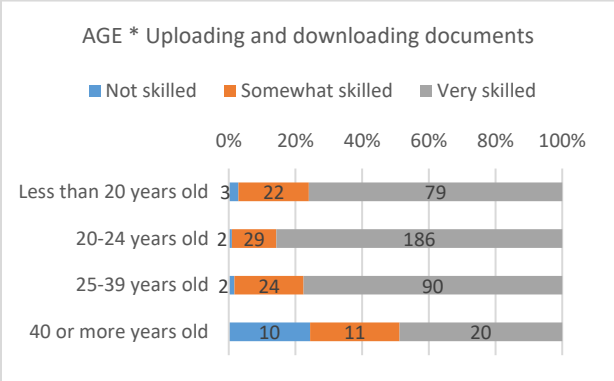


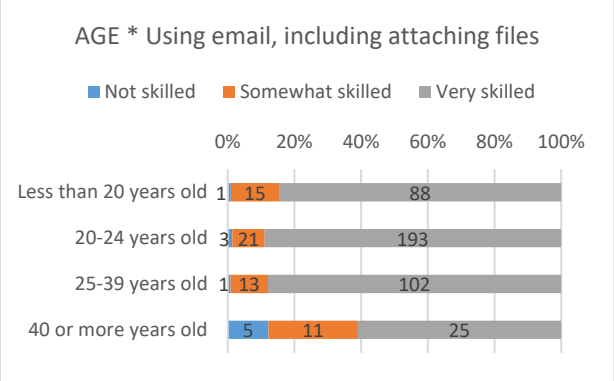


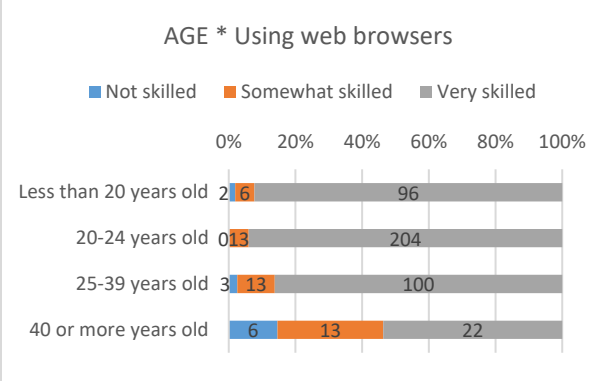

AGE * Word processing: spell-check/error-checking
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
2
24
78
1
43
173
4
18
94
10
10
21

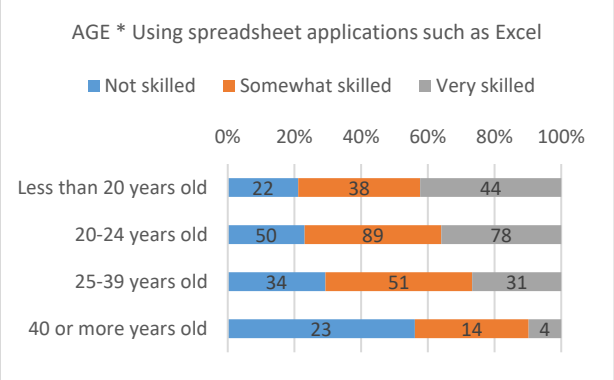

AGE * Using presentation applications (PowerPoint)
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
4
29
71
8
77
132
24
43
49
20
14
7

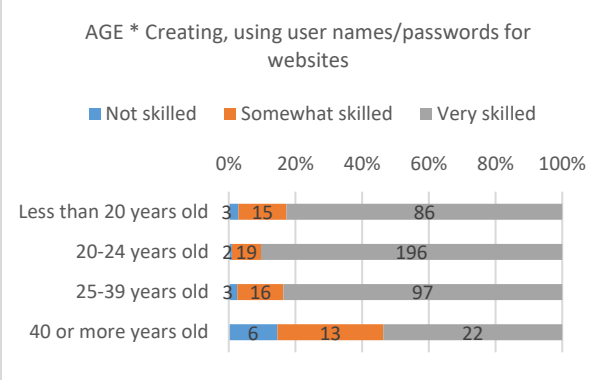

AGE * Typing at least 20 words per minute
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
3
26
75
10
47
160
12
20
84
11
9
21

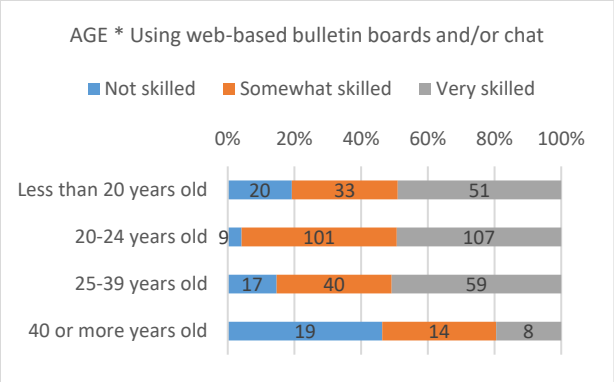

AGE * Uploading and downloading documents
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
3
22
79
2
29
186
2
24
90
10
11
20

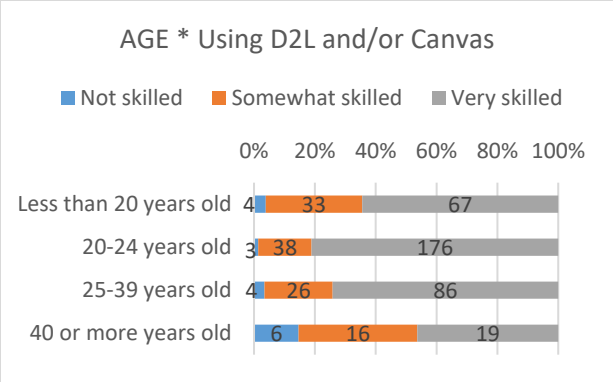

AGE * Using email, including attaching files
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
1
15
88
3
21
193
1
13
102
5
11
25


AGE * Using web browsers
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
2
6
96
0
13
204
3
13
100
6
13
22


AGE * Using spreadsheet applications such as Excel
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
22
38
44
50
89
78
34
51
31
23
14
4

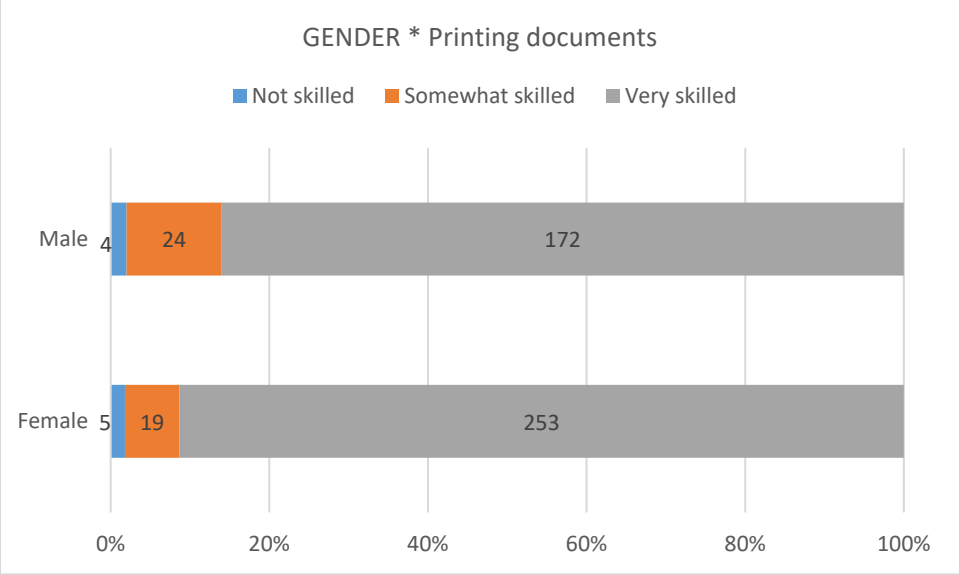

AGE * Creating, using user names/passwords for websites
Not skilled
Somewhat skilled
Very skilled
0%
20%
40%
60%
80%
100%
Less than 20 years old
20-24 years old
25-39 years old
40 or more years old
3
15
86
2
19
196
3
16
97
6
13
22





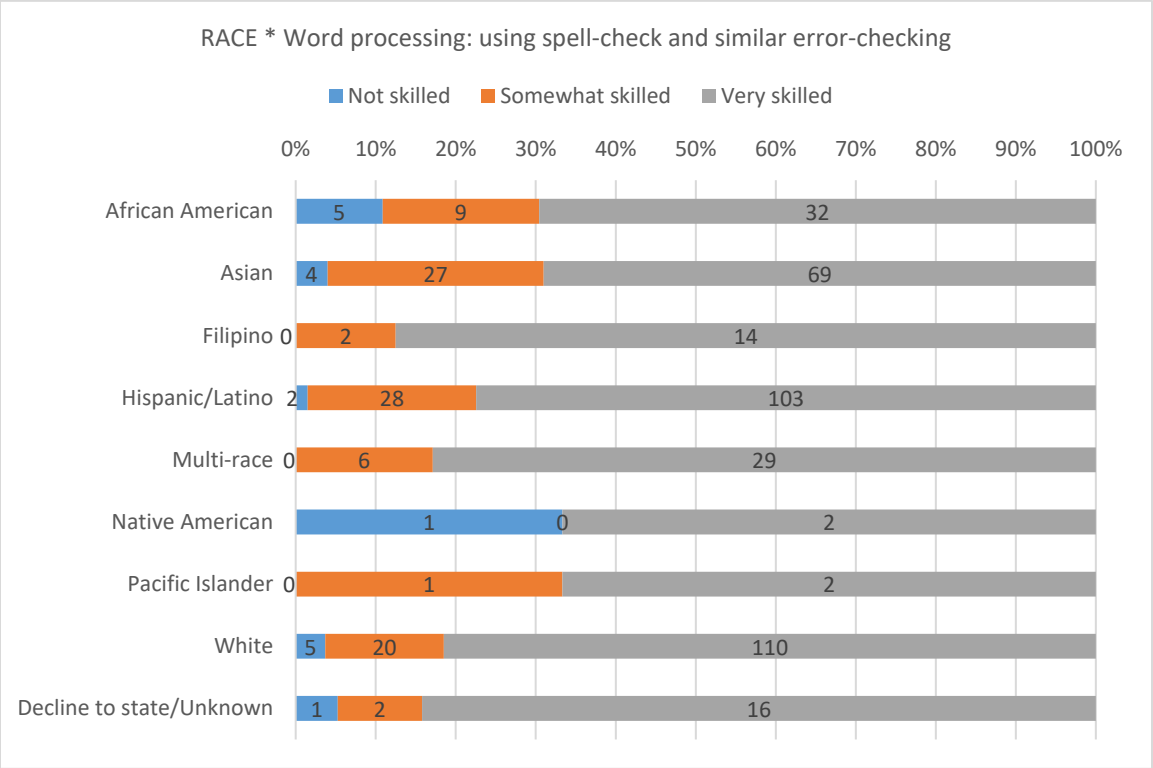
2. DISTRIBUTION BY GENDER

Question 9. How would you rate your proficiency in the following skills?



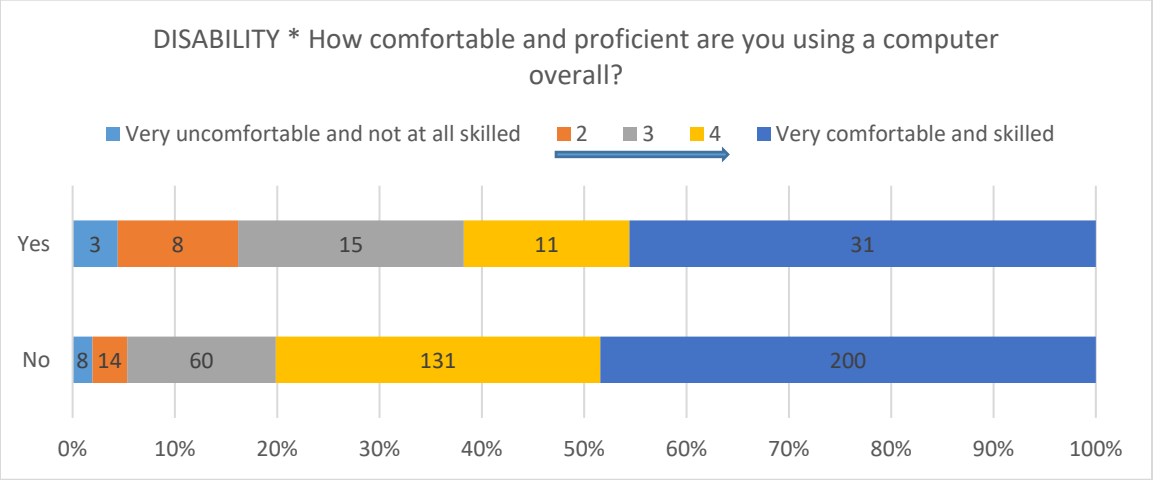
3. DISTRIBUTION BY RACE/ETHNICITY

Question 9. How would you rate your proficiency in the following skills?

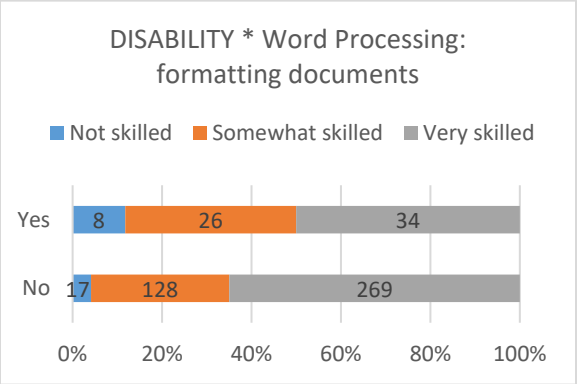


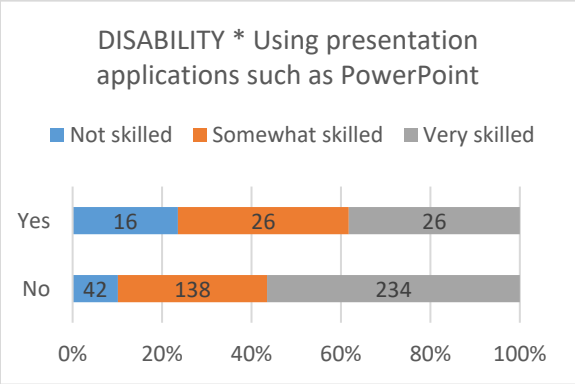
4. DISTRIBUTION BY DISABILITY STATUS

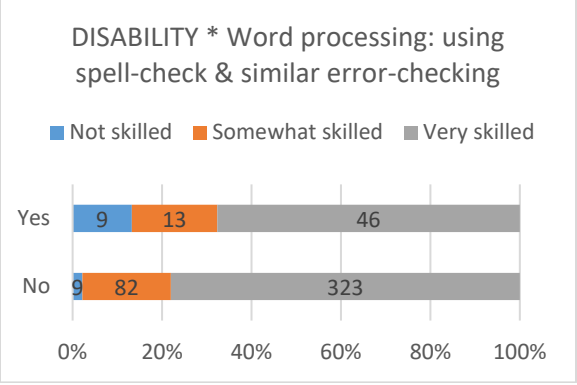
Question 7. How comfortable and proficient are you using a computer overall?

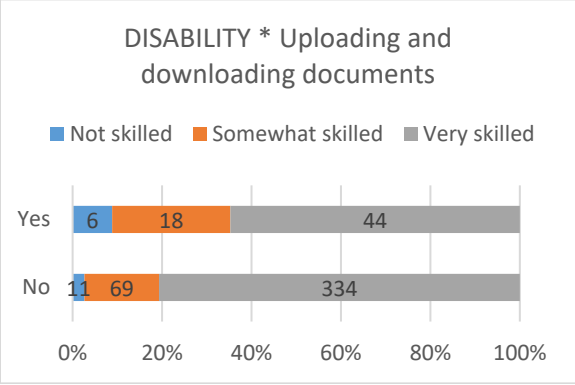


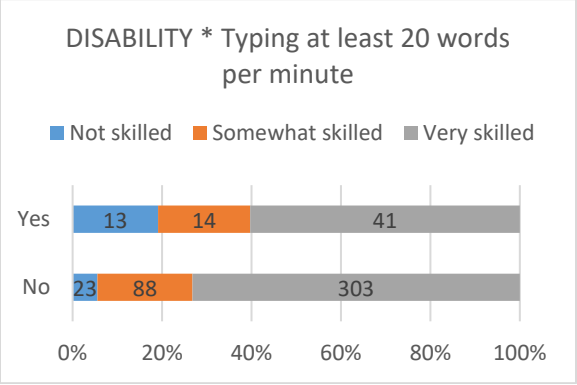
Question 9. How would you rate your proficiency in the following skills?

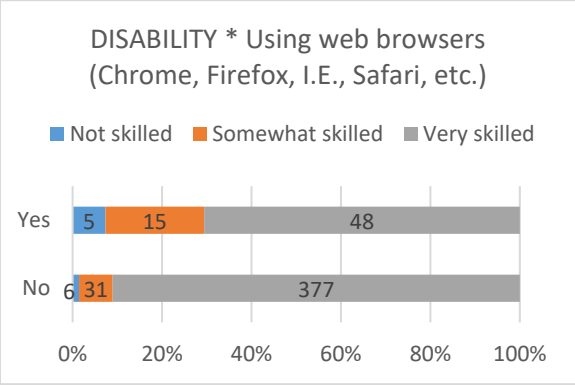


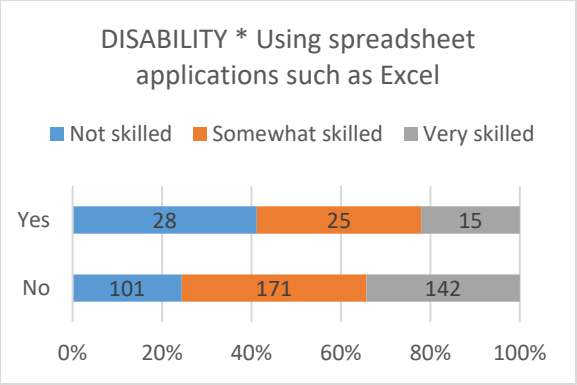


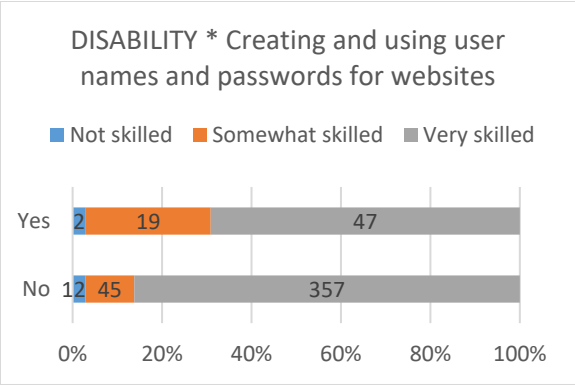


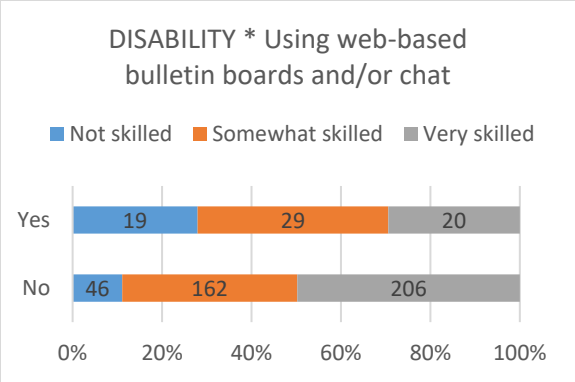












5. DISTRIBUTION BY VETERAN STATUS

Question 9. How would you rate your proficiency in the following skills?