

Executive Summary

As part of the WASC Action Plan, the School of Continuing Education (SCE) identified three broad Action Plan areas, one of which was technology. The overall goal for this Action Plan area was to further integrate technology within instruction and services to improve student learning. As a result, SCE developed steps to address the key issues involving technology which included identifying the technology skills students need for success in college and employment. In order to determine these technology skills, in Fall 2018, a tech action plan workgroup was assembled which was led by ESL faculty, Laura Jacob.

After creating a timeline for completion of this project, the workgroup conducted research and found that it supported the need to teach SCE students technology skills because it was imperative to their success in college and employment. It also became apparent through the research that although technical requirements varied by industry, a set of core technology skills were salient across sectors and had been identified by several research agencies relevant to adult education. Being proficient in these core technology skills was key for upward mobility of noncredit students in society. The technical skills outlined here were identified as technology skills that adult learners must possess for all entry-level jobs or for some lower-level and all middle-level jobs. These core technology skills align with the 4 C's of 21st Century Skills and the ISTE Standards.

Tech Skills Needed for all Entry-Level Jobs

<u>Tech Skill:</u>	<u>Relevant Notes:</u>
Create an Online Profile	Needed now in key entry-level jobs
Create & Remember Passwords	This includes Password Safety
Proficient Use of Email	

How to research a topic using a search engine (such as Google)	
How to Find Credible Sources on the Internet	<p>Students need to know how to distinguish Between Trustworthy Information and untrustworthy information on the internet.</p> <p>These are also framed as Information Literacy and Media Literacy.</p>

Tech Skills Needed for Some Lower-Level and All Middle-Level Jobs

<u>Tech Skills:</u>	<u>Relevant Notes:</u>
Microsoft Word	These 3 can be grouped together as “Office Skills” and/or taught within a Google Suite course.
Excel	
PowerPoint or Slides & Presentation Skills	
Keyboarding/Typing	
How to Collaborate with Others Online	

In order to assess whether these core tech skills were being taught within the SCE programs, the workgroup organized meetings with noncredit faculty. The meetings provided an opportunity for faculty to share their experiences teaching the core technology skills and to address any additional technology skills that could be better integrated or adopted into each program. The tech action plan workgroup met with noncredit faculty from Education for Older Adults, Adult Basic Education, Short-Term Vocational, and English as a Second Language. The Off-Campus High School faculty also participated but through a Qualtrics survey. Each group was asked to provide their input and recommendations regarding the following questions:

1. What are some examples of how your students use technology?
2. What tech skills do you teach in the classroom?
3. What tech skills do your students need to be successful?
4. How comfortable do you feel teaching tech skills in the classroom?
5. What tech skills do your students need to improve most?
6. How satisfied are you with the technology tools that Mt. SAC has available to your department? What are some tech tools you need?

In addition, faculty were also asked to rate their students' proficiency level for each of the core technology skills at the start of their program and at the end of their program on a scale from one (none) to five (advanced/high). The following report summarizes the results/findings of the qualitative data gathered from the faculty meetings and the quantitative data from the proficiency level ratings.

Cross-Program Report: The Tech Skills SCE Students Need

Faculty focus groups across each of the five School of Continuing Education (SCE) programs identified key technology skills that students need in order to be successful in their careers and personal lives. The areas of alignment are highlighted in this cross-program report below.

	Proper Email Etiquette	Basic Digital Safety Skills	Media Literacy	Typing Skills	Microsoft Office Suite Skills	Research Skills
ABE	X	X	X	X	X	X
EOA	X	X	X	X	X	
ESL	X	X	X	X	X	

OCHS	X	X	X	X	X	X
STV	X	X	X	X	X	X

Each of the five SCE programs identified that students need to learn and use professional email etiquette. Faculty identified that students are often more comfortable using text messaging and text messaging “language,” lingo and shortcuts; however, this doesn’t translate well when students need to compose email messages for work-related communication and tasks. Faculty stated that students need to know how to write a proper subject line for an email, include an appropriate greeting, state the purpose of the email, write an appropriate body (that is free of text messaging shortcuts such as “C U soon”), end with closing remarks, and have a signature.

All of the faculty focus groups clearly indicated that SCE students need to have basic digital safety skills in order to keep themselves safe when using the internet. Students need to be able to create safe usernames and passwords and be able to keep each password safe. Similarly, students need to ensure that they have logged themselves off of all public computers that they use--including use of on-campus computers as well.

Faculty reported that it is crucial for students to have keyboard typing skills. Often SCE students fluently use their smartphones and are quick to know how to use their fingers to type messages on a smartphone but cannot type when using a personal computer. This slows down their ability to write in a Word document, type memos, and write emails.

Fluent and ease of use of all the Google Suite apps and the Microsoft Office apps -- Word, PowerPoint and Excel -- were reported as a necessity by the faculty in each of the SCE programs. While the various uses and needs differ among students throughout programs, faculty agree that use of each of these applications is necessary for success in workplaces today.

Critical media literacy skills were highlighted as imperative by most of the SCE faculty. Students need to be able to identify false information on the internet and

discern when a website is not trustworthy. These skills are proving to be of increasing importance in the 21st Century with the rise of internet scams, and false information and fake news that are all rampant and targeting the most vulnerable in society. We need to ensure that SCE students are armed with skills necessary to discern false information on the internet. Similarly, Off-Campus high school faculty and Adult Basic Education faculty declared a need for their students to possess internet research skills, know exactly what a reputable source is, and be able to cite it properly so as not to plagiarize.

Education for Older Adults (EOA)

The ways in which EOA students use technology in their daily lives vary. Faculty reported that students need to know how to turn a computer on and off, complete job applications online, make medical appointments online, communicate with doctors online and research health issues online, bank and participate in e-commerce, communicate via email, and use job-search websites.

Several tech skills are taught in Education for Older Adults classrooms, such as Word, Excel, PowerPoint, desktop publishing, digital imagine, and digital photography and photo editing. In addition to these tech skills, basic computer skills are also taught, such as how to use the internet, how to log into the Mt. SAC Portal, how to fill in online forms and applications, and how to use email. Faculty offer hands-on resume creation workshops in addition to teaching students how to register with Office 365 in order to download the software onto their personal computers.

Faculty identified that the specific skills EOA students need to ensure their e-safety are of utmost importance. The e-safety skills that the EOA faculty identified are how to create and store passwords safely, how to ensure that they have logged off of their personal accounts on public computers, and how to stay safe while using the internet.

EOA faculty identified several additional tech skills their students need to be successful in their daily lives beyond the parameters of ensuring e-safety. Additional tech skills that were identified were: how to integrate smartphone use with computer use, touch proficiency and how to use a mouse proficiently (made particularly difficult because of arthritis), how to use social media (especially Facebook) to promote their

own businesses, how to access software such as Publisher and Microsoft on personal computers, and how to use printers properly. AWD students have a basic smartphone that has been given to them by the government, and they need to be able to use it to access basic functions such as email and social media.

When asked how comfortable they feel teaching tech skills in the classroom, faculty responded positively overall but mentioned some discomfort in certain off-campus locations. When teaching in classrooms that are on the Mt. SAC campus, faculty expressed that they have high confidence. In some locations that lack technical resources and rooms, they have lower confidence in teaching tech skills. EOA faculty expressed that equipment tends to be limited off campus and is out of the control of Mt. SAC, so they must use what is available to them. From a faculty perspective, taking the tech carts is prohibitive because they are difficult to carry and must be lugged around. It is difficult to take the iPads to various centers. One faculty member expressed that one cart broke because it was extremely heavy. Other faculty said that Wi-Fi in some centers is difficult to rely on.

According to the tech skills faculty, job application skills including testing, typing, and filling in online applications was identified as needing the most improvement for EOA students. Faculty next identified areas of tech skills that students need to be updated in order to remain current in their professions. Faculty stated that EOA students often come to Mt. SAC to remain relevant in their careers in fields such as real estate, medicine, and law. Faculty also identified that EOA students often want to use their skills to become business owners. Each of these different areas require EOA students to become current in their use of technology, which includes having the communication skills such as emailing, using social media, knowing how to stay safe on the internet, using Word, Excel and other Microsoft applications, using online marketing tools, and knowing how to use a smartphone.

Faculty discussed their level of satisfaction with the technological tools that Mt. SAC has available to the Education for Older Adults Department, as well as tools that could be upgraded in the future. Faculty identified that students want to learn how to use iPads as they provide easier access to technology since they are cheaper than a desktop computer. Additional printers, projectors, and larger screens would be put to

good use and utilized often by the EOA faculty. If each faculty member had an iPad, it would be easier for faculty members to take attendance. Additional comments were made by faculty to address being dissatisfied with the technology available to the Education for Older Adults program.

Short-Term Vocational Programs (STV)

Current student use of technology in the classroom and with counselors includes a wide spectrum of apps, software, and tools. Faculty identified several uses of instructional technology, including Canvas, email, PowerPoint, YouTube, career exploration websites, job search websites such as ONet, and Microsoft Word to develop cover letters and resumes. The EMT program uses FISDAP, an online textbook service that students can access at home and HCRC, which is mock hospital software. Mt. SAC specific websites and web tools used are the Mt. SAC Banner software, the Mt. SAC website to search for classes, the Mt. SAC Library site to conduct research for class, and Canvas.

Some technology skills that are specifically taught in the classroom and in one-on-one counseling sessions help students hone their respective career prospects. The skills identified by faculty as those explicitly taught in the classroom are: how to use job search tools such as Indeed.com, how to create and maintain online accounts, how to create cover letters and resumes using Microsoft Word, how to create a PowerPoint presentation, how to use the Mt. SAC website to search for classes, how to use the internet for research, and how to use the EMT-specific online textbook learning tools.

When asked which technology skills students in Short-Term Vocational programs need to be successful in their future careers, faculty identified several areas, according to their specific program. Some faculty highlighted the fact that low income students don't have access to technology, so basic computer skills are important for their learners to have, such as turning on a computer and using a mouse. Students need to learn how to write an essay; skills such as dividing an essay into paragraphs and using proper writing styles are important to know. Additionally, knowing how to utilize proper email etiquette is crucial for students to understand. In addition to these skills, students

need to be able to fill out online forms (such as applications), read a syllabus correctly, use Wikipedia, know how to register with the state online, and need to improve task management.

Faculty feel very comfortable teaching tech skills in the classroom, but stated that technology that is specific to Mt. San Antonio College (such as the Portal software and faculty vs. student Canvas interface) can be difficult at times. Faculty identified Excel as a tech skill that students most need to improve, but stated that students don't necessarily know how to ask for help with learning it.

Short-Term Vocational Faculty highlighted some areas in which they would like to see additional technology allocated, if possible. They stated that additional computers would be especially helpful for counselors to hold one-on-one sessions with individual students. Chromebooks, tablets, and a mobile computer lab would enhance students' learning experience. Specific technology for EMT would include heart stimulation monitors, bluetooth stethoscopes, and monitor-based eye stimulation tools.

Adult Basic Education (ABE)

Students in the Adult Basic Education program use technology in their daily lives in a variety of ways. Faculty reported that students use the internet for social media (Facebook, Instagram, YouTube) and to search for answers to a given question. Additionally, there are several ways ABE students use technology as part of their studies at Mt. SAC, which includes: using Chromebooks, the Microsoft Office Suite, and Quickbooks.

There are several technological skills that ABE faculty teach in the classroom. These include: career exploration through various career websites, PowerPoint for presentations, Word for essay writing, using a graphic calculator for math, Plato, and using various websites for internet research and to study. The websites that are often used in teaching are government websites that are used for research and Quizlet. Counselors help students set up and access their Mt. SAC Portal accounts to register for classes and help students use the CCC Apply website.

Within ABE, students access the PCs to use Quickbooks, Google Suite, Microsoft Office and are taught basic computer skills. On Chromebooks, students are

taught how to write essays, how to research websites, save study guide information, use educational games and study independently. Additionally, internet safety skills are explicitly taught to ABE students. They are taught about their online footprint, how to post safely online and how to use the internet responsibly. Students are also given lessons on proper email etiquette and how to send an email through a “scenario” assignment that is to be sent to the professor via email.

ABE faculty identified several tech skills as ones that students need in order to be successful. Students need to be able to use the internet competently to complete tasks such as filling out an online application, attaching a document to an email, and using the internet to search for jobs. It is essential that students have keyboarding skills to complete tasks as well. Students need to know how to stay safe online, demonstrate key e-safety skills, and know how to stay safe while using a public network, and be able to use their smartphones competently (such as know how to use Google maps and do an internet search online). Another set of skills that ABE students must have is to be able to use Microsoft Suite and Google Suite and each app within these Suites competently (Word and/or Google Docs). Students need to be able to search the internet for information and be able to determine what qualifies a source as a quality source, and what information online is trustworthy and what is not trustworthy. Faculty stated that having an ability to evaluate sources and demonstrate critical media analysis skills is necessary for ABE students to succeed. Students need to know how to search an online library database and properly cite a source. Lastly, students need to understand proper email etiquette such as having a subject line, addressing someone formally and understanding what is “text message” language vs. what is appropriate email etiquette for professional settings.

When ABE faculty were asked how comfortable they feel teaching tech skills in the classroom, the response was unanimous: “We feel very comfortable.” Teaching tech skills in the classroom is a significant part of the curriculum, and all faculty members are very comfortable within the parameters of teaching technology skills to ABE students. Within ABE, areas of teaching with technology are specialized in each area, so teaching tech skills in each area looks different to each faculty member in each

area. Teachers expressed ease and comfort in regards to teaching with technology in each of their areas (i.e. math/English, etc).

Several tech skills were identified as ones in which ABE students need to improve. Students need to develop and apply critical analysis skills when using the internet; they need to understand author point of view, be able to fact check information found on the internet, and analyze the agenda of what they find on the internet. Additionally, faculty would like to see students develop flexibility and adaptability when using software. They need to be able to learn new software (and adapt to software changes) and be able to adapt to new software that is developed in the future. Faculty expressed a need for students to be able to problem solve and troubleshoot with technology. Lastly, it would benefit students to be able to learn software shortcuts and use programs faster and more efficiently.

When asked about the technology tools that the ABE Department has and additional tools needed, several areas were identified as ones needing additional resources. Faculty would like to see improvement to the computer lab classrooms, technology be added to the AIME classrooms, have additional space in the computer lab, and see improvement to rooms 113 and 114. Specifically faculty would like to see two projectors and two screens added to the lab, tables instead of large desks, and address the problem of overcrowding in the lab, and adding more open space in the lab for students.

English as a Second Language (ESL)

Faculty reported that students in the English as a Second Language program use technology in a variety of ways. ESL students tend to use their smartphones often (which all students seem to have), mostly for social media, using WeChat (a Chinese social media platform), Facebook, and Instagram. Faculty noted a generational divide among ESL students in the use of technology. Younger students are savvy with the latest technology, whereas older students tend to struggle to use new technology easily; however, younger students are quick and eager to help older students learn how to use new forms of technology.

ESL faculty employ a variety of instructional technology tools in the classroom to aid with language learning. Apps that faculty regularly use with their students are:

Remind, Quizlet, Kahoot, and Edmodo. In addition to these apps, faculty teach their students how to use PowerPoint (often with the help of the Language Learning Center), Word, Google Docs, the Mt. SAC Portal, and Canvas. Faculty noted that they often teach students how to create a password and remind students to log out of computers that are in public spaces. In order to aid in language learning, faculty have their students use MyEnglishLab, a companion website to the Focus on Grammar book. In the VESL program, students are taught Word, PowerPoint, and often submit homework assignments via Google.

When asked which tech skills ESL students need in order to be successful, faculty gave several answers. In order to successfully search for jobs, students need to have internet search skills, be able to create resumes using Word, be able to fill out an online application form (especially for entry-level jobs), and use proper email etiquette when sending and replying to emails. Faculty noted that it is crucial for students to know how to keep themselves safe online; be able to create and remember their passwords, and keep their passwords safe. Additionally, students need to know how to fact-check information they find on the internet and know how to tell the difference between what is real and fake online.

When ESL faculty were asked how comfortable they feel teaching tech skills in the classroom, the respondents replied that they indeed feel very comfortable, and sometimes are even comfortable learning from their students. The faculty who were interviewed represented the advanced levels (4-6), and noted that perhaps faculty from the beginner levels might need to be consulted to gauge their comfort level in teaching technology skills in the classroom.

Several technology skills were identified as ones ESL students need to improve most. Faculty identified that information and media literacy knowledge is key for ESL students; they need to be able to perform internet searches and accurately be able to discern between what is trustworthy information on the internet and what isn't. Additionally, students need to be able to fill out and complete online forms successfully - both for the ESL program and for employment purposes. Keyboarding skills are important, but some students still type with two fingers. For VESL, students need to be able to format a document properly.

ESL faculty expressed satisfaction with the current tools available to the department, yet also provided some input in terms of additional tools that would benefit the ESL Department in the future. Faculty expressed that a mobile laptop cart for Building 40 would benefit the students who take classes in that building, as well as additional mobile laptop labs to use in Building 66 (specifically for when the lab is being used for CASAS). Faculty cited that additional training and workshops on how to use the technology available for best pedagogical purposes would be helpful, especially when teaching in the classrooms that have smartboards. Training of how to use smartboard is offered through POD, but they do not highlight best practices of how to use smartboards for *teaching* purposes. Lastly, some faculty noted that the placement of screens and whiteboards is difficult because they cover the whiteboards in some classrooms.

Off-Campus High School Programs

The off-campus high school teachers that responded to the questionnaires use technology in their classrooms in countless ways. Many teachers have access to Chromebooks and students use laptops in their classes. Teachers also use smartphones to access apps that are used for formative assessments, such as Kahoot and Quizizz. Many teachers reported that they use various websites to enhance student learning, use Google Classroom to effectively manage aspects of student learning and Google Suite (particularly Google Docs and Google Slides) to help students collaborate on various projects together. Students use the internet to do research, write blogs, do online voting, and participate in online discussion boards.

When off-campus high school teachers were asked which technology skills they teach in the classroom, an overwhelming majority responded that they teach internet research skills and Google Suite: Google Docs, Slides, Forms and Excel. Internet research skills are particularly important for those teaching writing; students need to understand how to research and cite sources.

When asked which technology skills off-campus high school students most need in order to be successful, teachers' answers corresponded in saying the top skills that today's students need is digital, information and media literacy; students need to know

which sources are credible and why. They need to have internet research skills to be able to navigate websites and analyze information found on the internet for accuracy. They need to understand exactly what plagiarism is, how to avoid it, and how to properly document sources. Additionally, students need to have keyboarding skills, be proficient in both Microsoft Office and Google Suites, be able to use discussion boards, and various types of apps.

When asked how comfortable they feel teaching tech skills in the classroom, 94% of teachers responded by saying they are either extremely, moderately, or slightly comfortable. The remaining 6% said they felt slightly uncomfortable.

Two salient responses were given when asked which technology skills students need to improve most: academic research skills and typing skills. These two skills were overwhelmingly provided as responses across disciplines. Apart from these two responses, however, teachers stated that their students need communication and collaboration tools, spreadsheet and graphing skills, practice researching math sites to teach themselves math skills, and problem solving skills.

Quantitative Survey Results

After completion of the focus group activity, faculty were asked to complete a worksheet that asked them to rate their students on specific technology skills on a scale from 1 to 5. The technology skills that were assessed included creating an online profile, using email, online research, finding credible sources on the internet, Microsoft Office, typing, and collaborating with others online. The faculty were asked to rate their students on each skill at the start of their program or course and then at the end of their program or course. A rating of 1 indicated no skill level; 2 indicated low level; 3 indicated average level; 4 indicated above average; and 5 indicated an advanced level of skill. See the Appendix A for a copy of the worksheet.

Overall, 46 faculty completed the worksheet. This included 18 faculty from OCHS, 8 from ABE, 8 from Vocational Re-Entry, 5 from STV, 4 from ESL and 3 from

AWD. The table below shows the average scores of faculty from each SCE Department for their students at the start and at the end of their programs.

The technology skill that faculty rated their students on lowest overall across all departments was finding credible sources on the internet. Faculty from Vocational Re-Entry, STV, and ABE all rated that skill the lowest among their students. Faculty from ESL and OCHS rated their students lowest on Microsoft Excel. Faculty from AWD rated their students lowest on Microsoft Excel, PowerPoint, and typing/keyboarding.

Interestingly, the technology skill that faculty reported that students most improved upon from the start to the end of their program overall was also finding credible sources on the internet. Therefore, according to these results, faculty in most SCE departments recognize this skill gap in their students when they start their programs, and actively work with them to improve this technology skill. Other technology skills that showed the highest difference between start of the program and end of the program according to faculty included creating an online profile, using email, and researching a topic online. The departments that indicated their students were lacking skills in Excel, PowerPoint and typing/keyboarding also all indicated their students showed improvement in these skills by the end of their program.

The technology skills that faculty rated their students highest on when starting their programs included creating and remembering passwords and Microsoft Word. It appears that most students enter their programs already possessing these skills.

Average of Faculty Perception of Student Tech Proficiency at Start and End of Program								
Technology Skill		Program						
		Voc Re-entry	AWD	STV	ESL	ABE	OCHS	SCE Overall
Create an online profile	Start	1.2	1.3	2.4	2.75	2	3.4	2.6
Create an online profile	End	2.8	2	4.5	4	3.2	4.3	3.8
Difference		1.6	0.7	2.1	1.3	1.2	0.9	1.3
Create & remember passwords	Start	1.4	1.7	3	3.25	1.8	3.8	2.9
Create & remember passwords	End	3	2.5	4.7	3.75	3.2	4.4	3.9
Difference		1.6	0.8	1.7	0.5	1.4	0.6	1.0
Use email	Start	1.5	1.7	2	3	2.6	3.8	2.8
Use email	End	3.3	2.5	4	4.25	3.7	4.3	3.9
Difference		1.8	0.8	2.0	1.3	1.1	0.5	1.1
Research a topic online	Start	1.6	2	1.8	2.5	1.9	3.2	2.5
Research a topic online	End	3.4	2.5	3.5	4	3.6	4.1	3.8
Difference		1.8	0.5	1.7	1.5	1.7	0.9	1.3
Find credible internet sources	Start	1	1.5	1.5	1.75	1.1	2.5	1.8
Find credible internet sources	End	2.5	1.5	2.75	2.5	3.1	3.7	3.2
Difference		1.5	0.0	1.3	0.8	2.0	1.2	1.4

Microsoft Word	Start	1.8	2	2.5	3	2.3	3.5	2.8
Microsoft Word	End	3.2	2.5	4	4.25	3.7	4.2	3.9
Difference		1.4	0.5	1.5	1.3	1.4	0.8	1.1
Excel	Start	1.7	1	1.7	1.5	1.3	2.4	1.9
Excel	End	3.3	1	2.5	4.5	2.9	3.4	3.0
Difference		1.6	0.0	0.8	3.0	1.6	1.0	1.1
Power Point or slides	Start	1	1	2.2	2.75	2.2	3.5	2.8
Power Point or slides	End	3	2	3.5	4.25	3.5	4.4	4.0
Difference		2.0	1.0	1.3	1.5	1.3	0.9	1.2
Typing	Start	1.3	1	3.25	2.25	1.7	2.9	2.4
Typing	End	2.3	1	3.25	3.25	3.3	3.6	3.2
Difference		1.0	0.0	0.0	1.0	1.6	0.8	0.9
Collaborate with others online	Start	1	2	2	2	1.2	3.2	2.4
Collaborate with others online	End	2.5	2	4	3.5	2.25	4.0	3.4
Difference		1.5	0.0	2.0	1.5	1.1	0.8	1.1

Appendix A: Faculty Worksheet

Department/Program: _____

Course: _____

What level of proficiency for these tech skills do your “average” students have when they start your program? What level of proficiency do they have when they finish your program?

	Start of Program						End of Program					N/A
Create and manage an online profile Examples: Portal, specific companies' online accounts	1	2	3	4	5		1	2	3	4	5	N/A
Create and remember passwords	1	2	3	4	5		1	2	3	4	5	N/A
Use email proficiently	1	2	3	4	5		1	2	3	4	5	N/A

Research a topic using search engine (such as Google)	1	2	3	4	5		1	2	3	4	5	N/A
Find credible sources on the Internet: Which information [on the internet] is trustworthy and why?	1	2	3	4	5		1	2	3	4	5	N/A
Microsoft Word	1	2	3	4	5		1	2	3	4	5	N/A
Excel	1	2	3	4	5		1	2	3	4	5	N/A
PowerPoint or slides & presentation skills	1	2	3	4	5		1	2	3	4	5	N/A
Keyboarding/typing	1	2	3	4	5		1	2	3	4	5	N/A
Collaborate with others online Examples: Zoom, internet meetings, working on documents/slides with others	1	2	3	4	5		1	2	3	4	5	N/A

1 – None

2 – Low

3 – Average

4 – Above Average

5 – Advanced/High