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## From the Commons to the Spartan Floor: Enhancing Digital Literacy Through Technology-Integrated Spaces

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# **From the Commons to the Spartan Floor: Enhancing Digital Literacy Through Technology-Integrated Spaces**

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## Abstract

San José State University's Spartan Floor represents a suite of services and spaces designed to promote digital literacy amongst university library patrons. This happens through the use of formal and informal knowledge transfer – technology training workshops, front-line hardware and software support, integrated collaborative technologies – in spaces strategically collocated so that students have staff support or resource access when and where the digital literacy need emerges. A variety of data-driven methods are employed to assess space usage, services, and collections on the Spartan Floor. Some or all of these services, spaces, and methods can be recreated by libraries interested in supporting digital literacy for their populations.

## Introduction

*“If we teach today as we taught yesterday, we rob our children of tomorrow.”*

*– John Dewey, Democracy and Education, 1916*

Since John Dewey, librarians and educators have concerned themselves with advancing classroom and educational technologies that enhance knowledge transfer and help teach the skills students require for successful careers and lifelong learning. Recently, libraries have invested money, space, and staffing in offering users access to a breadth of technology tools, both hardware and software. Library efforts to support the digital literacy skills needed to effectively utilize these technology tools have received less investment. In order to improve and support the

technology skills students must have to leverage the latest tools available, San José State University (SJSU) developed a suite of services and spaces specifically designed to enhance digital literacy in our users. This suite includes frontline technical support at a device checkout desk, a technology trainer and designated technology training space, content creation support, and technology-integrated study spaces that promote rich collaboration and information sharing. Preliminary assessments of these services and spaces, which make up an entire floor of the library designated the “Spartan Floor,” are positive and indicate users would benefit from their expansion in other institutions.

### Digital Literacy Needs

It is not uncommon to find university libraries that lend a variety of technological devices, such as laptops and tablets, to their patrons (Holden & Hsieh, 2007). The lending of physical objects, of “nouns,” is what libraries traditionally do best. SJSU Library has offered a technology lending service since 2003. Over the last 10 years the library’s technology collection has grown and emerged as one of our most popular circulating collections. The use of this ever-evolving collection reflects the increasing importance and integration of technology into learning. This integration obviously includes hardware like computers, tablets, smartphones and Smartboards. It also includes software like Microsoft Office, Adobe Creative Suite, SPSS (Statistical Package for the Social Sciences), and Learning Management Systems. SJSU Library, like many, offers access to these tools through physical lending or online access.

Perhaps less obvious are the activities, or “verbs,” these technology tools enable – communicating, collaborating, discovering, creating, remixing, presenting, gaming, sharing –

that are also integral to college-level assignments in many disciplines. Library support for technology as a verb, rather than as a tool, is less common. Unlike established information literacy programs built on frameworks and rubrics published by national academic librarian organizations, digital literacy struggles to find a place in the library. From our own observations and discussions, occasional workshops, basic online tutorials, and software manuals are the most frequently tried methods of delivering digital literacy to academic library populations. The 2013 ALA Digital Literacy Task Force report *Digital Literacy, Libraries, and Public Policy* (2013) provided few concrete examples of digital literacy instruction in academic libraries, focusing instead on the use of Web 2.0 technology to provide information literacy instruction. A lack of analysis regarding digital literacy instruction or strategies in the academic library indicates this area requires further development.

This likely reflects both a lack of skill amongst librarians and a lack of verifiable interest in library users. These two deficits potentially create a circular cause-and-effect pattern wherein students and faculty do not see the library as a place for digital literacy support and so library employees are never asked for such information. Librarians often base professional development goals on noted trends in their institution's needs, so if a librarian receives no digital literacy questions they will likely see no reason to increase their own knowledge in the area, thereby perpetuating the lack of digital literacy support. This pattern leaves faculty with few resources to recommend to students and leaves students with no place to turn for digital literacy support and instruction. SJSU Library began to recognize this issue after opening a laptop checkout service in early 2003. Students frequently sought help with hardware and software issues from staff members at this service desk, who could offer limited resources for assistance. The larger

conversation that emerged amongst these staff members, reference staff and liaisons librarians culminated in the creation of the “Spartan Floor” – an entire floor of the library visibly dedicated to addressing the technology and digital literacy needs of the SJSU community.

### The Spartan Floor

The Spartan Floor, named after San José State University’s Spartan mascot, represents a suite of services and spaces designed to promote digital literacy in the university library. This happens through the use of formal and informal knowledge transfer - dedicated training sessions, integrated collaborative technologies – in spaces strategically collocated so that students have staff support when and where the digital literacy question emerges. The Spartan Floor has evolved over time and continues to be improved and refined based on continuous assessment and new trends in libraries. Some or all of these services and spaces can be recreated by libraries interested in supporting new literacies for their users.

### *Student Computing Services*

SJSU Library opened Student Computing Service (SCS) over 10 years ago with a small PC laptop collection. Today SCS checks out over 500 PC laptops, MacBook and iPads. Students have the option of borrowing devices for one week or four hours, with one-week checkout being the most popular option. Annual circulation for this collection was a little over 100,000 checkouts in 2014-2015. SJSU Library’s 900,000+ item circulating print collection in the same period received 24,788 checkouts. SCS also provides access to graphing calculators, chargers, adapters, raspberry pi, and special technology requested by faculty for specific courses. The SCS service desk is staffed by student assistants, overseen by one full-time employee. Although

the university has a central IT Help Desk, staff at SCS routinely provides frontline hardware and software technical support to users. This may be attributed to SCS's extended evening and weekend hours, its central location to major group work and study areas, and the willingness of SCS staff to provide immediate in-person troubleshooting. The need for more in-depth support and technology training became apparent through analysis of SCS question logs over the last few years.

### *Student Technology Training Center*

The Student Technology Training Center (STTC) was opened in 2014 to address digital literacy gaps identified through SCS question analysis. STTC is strategically located next to SCS in the middle of the Spartan Floor and is staffed by a dedicated Student Technology Training Coordinator and SPSS student peer mentor. The space and funding allocations for the STTC were part of a gradual shift of the library's priorities from under-used print collections to more technology-focused services. The coordinator and peer mentor provide one-on-one consultation with students to develop technical proficiencies required to complete assignments or achieve learning goals (faculty and staff are also welcome). The coordinator offers email assistance and bi-weekly software workshops on Adobe Creative Suite, Microsoft Office, SPSS and various other software programs available from the library or university. The coordinator also works with faculty to design in-class presentations or small group workshops supporting specific assignments that rely on software programs, most commonly SPSS and Excel. To promote STTC's services, the coordinator attends campus events, assists in information literacy sessions and works closely with campus committees. Feedback from students is obtained through post-workshop debriefs, student committee work and faculty outreach.

### *Integrated Technologies*

To assure students have access and exposure to academic and collaborative technologies in order to enhance their skills independently, the Spartan Floor offers integrated self-serve technologies throughout the space.

Mediascapes with booth seating allow large groups of students to work together with up to four laptops, tablets and/or smartphones connected to one shared screen, as seen in Figure 1.

Switching between devices is seamless and with the tap of a button, one student's personal screen is visible for everyone in the group to observe. Students have been observed reviewing training videos, attending virtual conference and enjoying movies in the same space.



*Figure 1. A large student group using the mediascape on the Spartan Floor*

The touchscreen table surrounded by lounge chairs creates an opportunity for four users to inhabit the same space while working independently with an innovative technology. Unlike the mediascapes, where students have to take turns operating the screen, the touchscreen table allows for students to work simultaneously with the screen divided up into quadrants, as demonstrated in Figure 2. Users can arrange images, create presentations, edit documents, or surf the web on the touch screen.



*Figure 2. Students work simultaneously on the touchscreen table*

A large captureboard makes it possible for students to write notes, draw graphs, or make detailed drawings on a whiteboard-like surface that can be saved via USB. Users can also connect a laptop through the USB port to project images on the captureboard as a base for their whiteboard



work (see Figure 3). The captureboard is currently an experimental addition to the 25+ heavily-used analog whiteboards scattered across the floor.

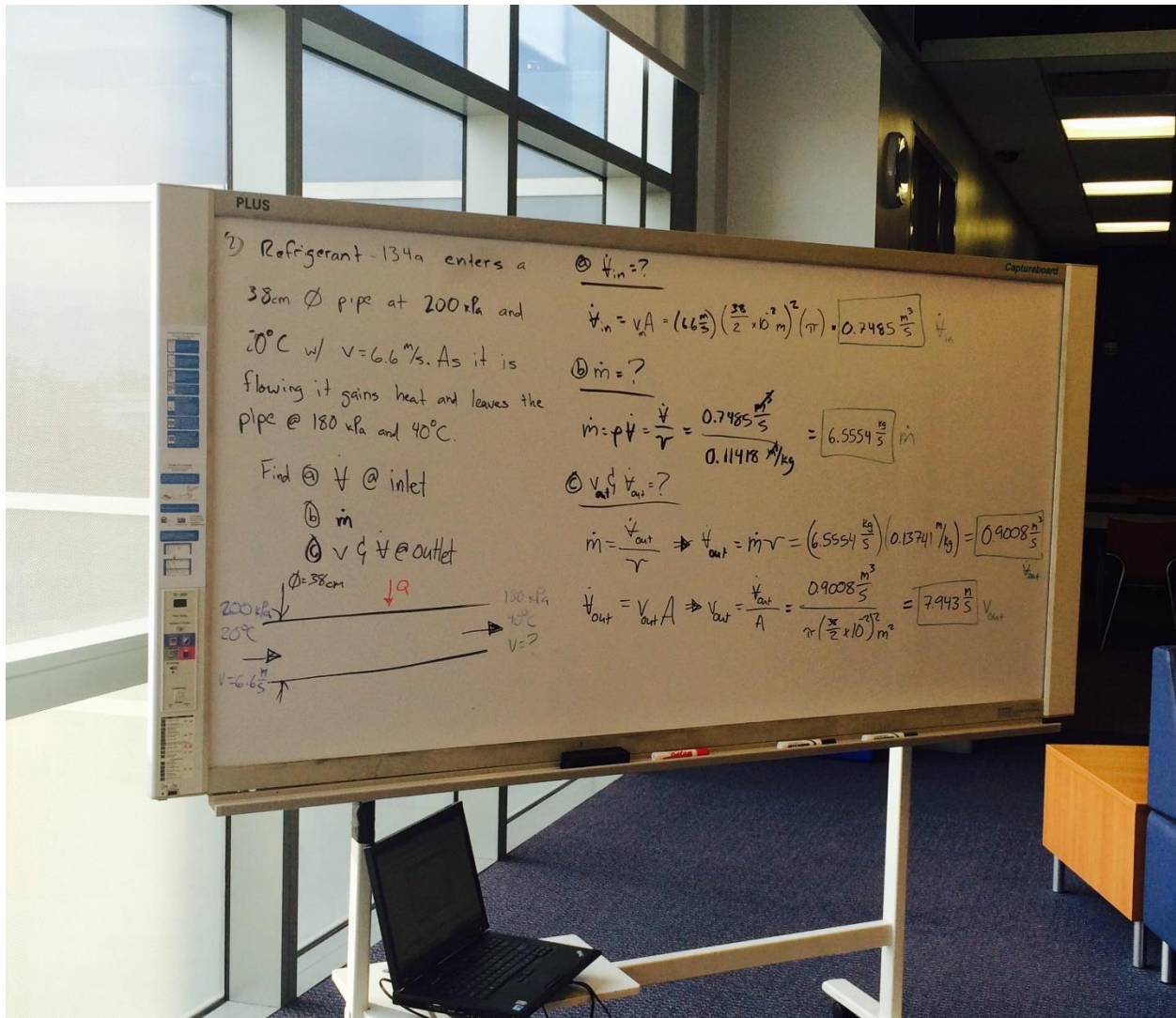


Figure 3. Engineering calculations on the captureboard with laptop attached

A six-screen video wall is available for student exhibits, faculty lectures, or community events like football games or movie nights and is prominently displayed in the middle of the Spartan Floor's main wall (see Figure 4). In other areas of the floor two digital signs displaying promotions from the library and campus organizations make the space more colorful and

interesting. SJSU's Associated Students organization regularly requests use of the screens to advertise their events, initiatives, and elections.



*Figure 4. Students gather around the Spartan Floor video wall to watch the World Cup*

### *Creative Media Lab*

Frequent requests for high-end hardware and software items students could not afford or did not have access to led to the development of a Creative Media Lab (CML) on the Spartan Floor. With input from faculty, students, and librarians the CML was equipped with high-end Macs running ProTools, Logic Pro X, GarageBand, and Audacity (audio station); Cinema 4D, Final Cut Pro X, Compressor, Adobe Creative Cloud and Toast (video station); and a PC

gaming/animation station loaded with GameMaker Suite, Maya, and ZBrush. Additionally, a 65-inch screen was added to the CML for reviewing final products – although watching anime and playing video games is another popular use for the big screen.

### Assessing the Spartan Floor

SJSU Library employs a variety of data-driven methods to assess usage of the Spartan Floor. Circulation statistics for the technology collection in SCS have grown consistently since the establishment of the service. As previously stated, annual circulation for this collection far surpasses print collections. Student assistants staffing the SCS service point perform double duty as frontline hardware and software support, easing the technical question burden at our Reference Desk. Using Gimlet statistics collection software, SCS student assistants logged 4,216 encounters involving technical questions from patrons during just the Spring 2015 term. These questions ranged from wi-fi connectivity issues to inquiries about using the campus Learning Management System for the submission of class assignments. The high number of technical transactions occurring at this desk, representing a broad spectrum of digital literacy issues, indicates a significant need for such support in the library's learning spaces. By combining device checkout with technical assistance, SJSU Library fully leverages space and staffing in the most popular study area in our building.

Transactions logged in Gimlet are also used to assess and improve services in the STTC. For the same term (Spring 2015), 170 transactions were logged for the STTC, in addition to the dozen workshops provided (see Table 1). These 170 transactions are much different in scope and complexity than those logged at SCS.

Spartan Floor Location	Question Count Spring 2015
Student Computing Services	4216
Student Technology Training Center	170

Table 1. Comparison of Student Computing Services (SCS) and Student Technology Training Center (STTC) question counts for Spring 2015

Using the Gimlet software, STTC staff ranked question complexity, duration, tagged various applications and resources involved in answering the question, and frequently described the question and answer provided during each transaction. An analysis of these factors in the STTC questions show that each of these interactions represents in-depth, resource-rich digital literacy sessions with individuals or small groups of students. As Figure 5 illustrates, the average interaction between the Student Technology Trainer or SPSS peer mentor and a patron was 53 minutes. No transaction was shorter than six minutes. Twenty transactions were logged as 120+ minutes. Interactions included requests for help with Excel macros, SPSS data analysis, and using GarageBand.

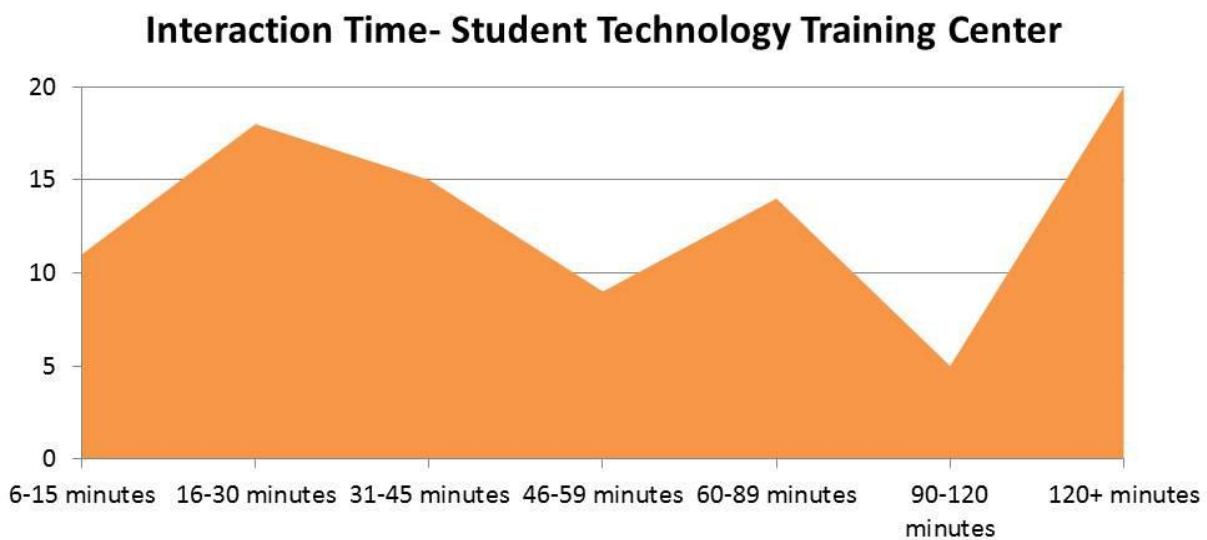


Figure 5. Graph of transaction duration at the STTC service point for Spring 2015



In many ways, the descriptions of STTC transactions mirror complex reference questions at our traditional Reference Desk, addressing the application of software tools to research and coursework rather than the discovery of research and writing resources. As the Fall 2015 term nears its end, STTC has surpassed the 170 transactions of last term and increased workshop attendance. Additionally, faculty from various academic departments have approached the Technology Training Coordinator for in-class demonstrations of survey design and data manipulation in SPSS. Word of mouth by both librarians and students that have received help at STTC continues to increase the demand for this service.

### Conclusion

San José State University's Spartan Floor represents a technology-integrated learning environment where spaces, services, and collections promote and support digital literacy in our users. Dedicating staff to training patrons on the technology devices and resources offered by the library, at the point of need, allows users to more fully realize their educational value and gain necessary technical skills. The library's contribution to digital literacy is expanded with a new emphasis on supporting the activities students engage in with these technologies rather than simply focusing on access to the tools themselves. Thorough analysis of service point transactions and circulation statistics, along with user input, allow the library to grow and evolve the Spartan Floor to better meet user needs.

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## Biographies

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Christina Mune, MLIS, is the Information Technology Service Director at San José State University Library where she oversees Library IT, Discovery & Web Services, Student Computing Services and the Technology Training Center. She previously served as SJSU's Digital Initiatives Librarian and Open Access initiative coordinator and as an archivist at UC Berkeley. Her research interests include digital literacies, online learning and ebooks.

Sharon Thompson

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Sharon Thompson is the Student Technology Training Coordinator for the San José State University Library, which includes teaching software skills, providing technical consultations and promoting the use of collaborative and creative technologies to students. She has worked on technology and digital literacy integration into library spaces for the last few years.