

UC Santa Cruz

Library Staff Presentations and Research

Title

Improving Student Sensory Experiences in the University Library

Permalink

<https://escholarship.org/uc/item/9pv373vd>

Authors

Waggoner, Jessica

Fogel, Isabella

Bruner, Victoria

Publication Date

2026-08-13

Supplemental Material

<https://escholarship.org/uc/item/9pv373vd#supplemental>

Improving Student Sensory Experiences in the University Library

Research Findings and Recommendations for
Inclusive Design in the UCSC Library

Prepared by:

Jess Waggoner

User Experience Librarian

Isabella Fogel

Library Spaces Research Intern

Victoria Bruner

Library Services Specialist V

Presented to:

The University Library at the University of California, Santa Cruz

July 2026

Table of Contents

Executive Summary.....	2
Introduction.....	2
Background and Previous Work.....	2
Review of the Literature.....	3
What is sensory processing sensitivity?.....	3
How do sensory sensitivities impact student success?.....	3
What are sensory-friendly spaces?.....	4
What have other libraries done to meet sensory needs?.....	5
Research Methods.....	5
Focus Groups.....	6
Survey.....	7
Funding.....	7
Results.....	7
Recommendations.....	8
Communication.....	8
Offer a Detailed Directory of Our Spaces.....	8
Provide a Reporting Form for Study Room Issues.....	8
Facilities.....	9
Ensure Outlets are Functional.....	9
Provide Cleaning Supplies.....	9
Improve Privacy in McHenry Ground Floor Study Rooms.....	9
Allow Students to Control Lighting in Study Rooms.....	9
Policies.....	10
Create and Communicate Expected Noise Levels.....	10
Room Booking Website.....	10
Improve Mobile-friendliness of Booking Website.....	10
Include Sensory-related Aspects in Space Descriptions.....	10
Include Information About Equipment Status.....	11
Equipment and Supplies.....	11
Power Strips.....	11
Alternative Seating (eg. wobble stools or yoga ball chairs).....	11
Dimmable Lamps in Study Rooms.....	11
Fans in Study Rooms.....	12
Sit/Stand Adjustable Desk.....	12
Conclusion.....	12
Appendix.....	14
Survey Results.....	14
References & Bibliography:.....	15

Executive Summary

See the [Executive Summary slide deck](#)

Introduction

Background and Previous Work

In 2024, we interviewed 9 undergraduate students to learn more about their experiences in library spaces. Student interviews were organized into three cohorts: students reporting high-frequency use of library spaces, students reporting low-frequency use of library spaces, and students registered with the Disability Resource Center (DRC). During these focus groups, students engaged in a variety of activities, including sketching, empathy mapping, and an anti-problem approach to generate discussion and explore student experiences and feelings of welcomeness in library spaces. Four themes emerged from these focus groups: the outsized impact of first impressions and early experiences, the importance of making spaces comfortable and usable for extended session durations, infrastructure improvement opportunities, and student sensory needs in library spaces. (More information available in the [Welcomeness in Library Spaces slidedeck](#) presented at the UC Libraries Forum 2025.)

We recognized sensory needs as an important component in student space experiences. Students across all three cohorts mentioned sensory-related issues when discussing their library space experiences. The most frequently reported issues were:

- **Lighting:** “I can’t focus on anything else if I’ve got these headache-inducing [fluorescent] lights.” Students expressed a dislike of the bright, fluorescent lighting ubiquitous in library study rooms and a strong preference for the natural lighting found in windowed spaces.
- **Visual Distraction:** “General movement, like inconsistent movement, can take me out of my focus.” Students reported difficulty with focusing when there were visual distractions (like people walking by) in their environment.
- **Noise:** “When it’s very loud I can’t concentrate when I study.” Students reported needing and using areas where they could be loud (for conducting group work, for example), but also needed spaces that were quiet where they could engage in more focused individual study.
- **Temperature:** “I’m really sensitive to cold, so the library’s freezing cold, that’s not the best for me.” Several students reported avoiding library spaces due to temperature concerns (both too hot/”stuffy” and too cold).
- **Seating:** “If a chair is not working out sometimes it’s more comfortable to just sit in a super comfortable area and do your work.” Students reported needing a variety of options for sitting (or standing) while they do their work.

Knowing that sensory needs are significant for our own student population, we sought to learn more about sensory processing challenges and how libraries might improve student space experiences by addressing these sensory needs.

Review of the Literature

What is sensory processing sensitivity?

Sensory processing sensitivity (SPS) is a processing difference that impacts how a person experiences physical, environmental, emotional, and social stimuli resulting in narrower comfort thresholds than the majority of the population (Cater, 2016). In typical processing experiences, sensory data from the body and its surroundings are integrated in the central nervous system resulting in a response appropriate for a given situation. However, people with SPS have difficulty in processing and organizing these sensory inputs, resulting in hypersensitivity or, sometimes, hyposensitivity to stimuli that creates a barrier to engaging comfortably in their surroundings (Lee et al., 2025). “Hypersensitive individuals may find stimuli like bright lights, loud sounds, or coarse textures overwhelming, while undersensitive individuals, including older adults with diminished tactile or auditory sensitivity, require enhanced stimuli to effectively interact with their surroundings” (Lee et al., 2025, p.7).

Sensory processing sensitivities are found in 15-20% of the population (Cater, 2016). SPS is also a common characteristic of several neurological differences, including attention-deficit/hyperactivity disorder (ADHD), autism spectrum disorder (ASD), and sensory processing disorder (SPD) (Hedge, 2015).

How do sensory sensitivities impact student success?

3,823 students registered with the UCSC Disability Resource Center during the 2021/22 academic year. Of these, 202 students had an ASD diagnosis and 1,157 students had an ADHD diagnosis, making ADHD the second most common diagnosed disability of UCSC students (University of California, Santa Cruz, n.d.). Sensory processing sensitivities are frequently experienced by people with ADHD; in a 2010 study, Lane et. al. (2010) found that 46% of children with ADHD also had sensory processing sensitivity. Clinice et al. (2016) found that students with ASD and ADHD experienced a range of sensory barriers in higher education environments that impeded their ability to fully participate in both academic and social aspects of higher education.

Sensory sensitivities in both neurodivergent and neurotypical students can impact their ability to successfully engage in educational experiences. Overwhelming sensory stimuli can cause distraction, alarm, and discomfort for students with sensory sensitivities (Hedge, 2015). For some students, these sensory experiences may create barriers that prevent them from engaging in typical college-life tasks, “For many students, the built environment and context of a college campus can be a barrier to engagement in learning, socialising and performing their activities of daily living, as well as a distracting and overwhelming place to be” (Nolan et al., 2022). Students may find that coping strategies they developed during their K-12 experiences are not adequate for managing the larger class sizes found in college classrooms or life in residence halls (Clinice et al., 2016). A typical college classroom may present a variety of sensory challenges such as loud or persistent noises, bright lights, and high levels of activity (Kirk, 2025).

These sensory experiences may cause increased feelings of stress and anxiety and can result in students avoiding activities and environments altogether (Clinge et al., 2016). Research has shown that neurodivergent people are more prone to experiencing mental health challenges, such as anxiety and depression (Kirk, 2025). More specifically, Gearhart and Bodie found that students with sensory sensitivities reported higher levels of college stress (as cited in Nolan et al., 2022) Engel-Yerger and Dunn found that anxiety around sensory experiences led to avoidance of activities (as cited in Nolan et al., 2022).

This research suggests that the success of neurodivergent students may be directly impacted by the spaces and environments we create on college campuses. We need to better understand how we might improve the sensory experiences of neurodivergent students.

What are sensory-friendly spaces?

Creating sensory-friendly spaces can improve the sensory experiences of students. Kirk (2025) states that the goal of a sensory-friendly environment should be to eliminate environmental stressors. Kirk (2025) adds that the creation of these spaces not only contributes to academic success, it also, “represents a broader commitment to the health and well-being of all students” (p. 18).

Although people with sensory sensitivities are not homogeneous in their needs, research has uncovered patterns of needs that designers should take into account when designing sensory-friendly spaces. There is consensus that sensory-friendly spaces should reduce outside noise (Hedge, 2015; Kirk, 2025; Lee et al., 2025; Nolan et al., 2022), should offer adjustable lighting (Hedge, 2015; Kirk, 2025; Lee et al., 2025; Nolan et al., 2022), should offer temperature adjustment (Lee et al., 2025; Nolan et al., 2022), and should provide multiple options for sitting or standing (Kirk, 2025).

Noise is a particularly common stressor surfaced in sensory research (Kirk, 2025). Nolan et. al. (2022) found that 49% of students surveyed reported that noise in the library was a barrier to their use of library spaces. Clince et al. (2016) found that study participants with ASD reported difficulty filtering background noise, resulting in challenges absorbing information and participants with ADHD expressed a preference for “low-distraction” environments.

Lighting is also a common stressor found in the research. Hedge (2015) found that electric lights were particularly problematic due to flickering and glare. Kirk (2025) suggests the use of dimmed artificial lights as an alternative to fluorescent lighting when natural light is not available. Many researchers advocate for adjustable lighting in sensory-friendly design (Hedge, 2015; Kirk, 2025; Lee et al., 2025; Nolan et al., 2022).

Kirk also recommends providing flexibility for body positioning during long periods of space use by providing multiple seating options and standing desks.

What have other libraries done to meet sensory needs?

In their research of sensory issues in the Susquehanna University library, Boyer and El-Chidiac (2023) found that the main problems students reported were the noise and chaos of the main entrance, the desire to avoid crowds and know how busy the library was at a given time, too many glass walls as partitions, lack of lighting control in spaces, and uncomfortable/hard seating. To address these problems, Boyer and El-Chidiac (2023) added a real-time occupancy counter to the library website (also including average historical occupancy for different days and times), noise cancelling headphones available for checkout, and they created sensory-friendly study rooms that featured dimmable lights, an adjustable desk, multiple seating options (beanbag chairs and wobble stools), sound machines, and frosted windows.

The creation of sensory-friendly study rooms is a popular approach for addressing student sensory needs in libraries. In our research, we found a large number of academic libraries offering sensory-friendly study rooms. These include:

- UCSD has a dedicated [sensory space](#) in Geisel Room 1043.
- UCLA has a dedicated [energy pod](#) as a sensory friendly space at CLICC Lab (Powell 145).
- NYU has [sensory spaces](#) for students registered with their accessibility center and [sensory friendly study pods](#) for all students.
- Penn State has dedicated [sensory friendly rooms](#) in multiple library branches.
- East Carolina University has dedicated [sensory space](#) on the 2nd floor of their library.
- University of Warwick has [accessible study rooms](#) within their library.

Offering equipment to improve sensory experiences is another common approach. We found academic libraries offering several types of equipment aimed at addressing sensory needs.

These include:

- Noise cancelling headphones (eg. [University of Waterloo](#), [University of New York](#) & [University of Michigan](#))
- Fan for ventilation / noise dampening (eg. [University of New York](#))
- Controllable white noise speakers (eg. [North Carolina State University](#))
- Adjustable height desks (eg. [University of New York](#)) and standing height tables (eg. [North Carolina State University](#))
- Active learning / wobble stools (eg. [University of New York](#))
- Adjustable lighting (eg. [University of New York](#) and [North Carolina State University](#))
- Sensory calming manipulatives and/or kits (eg. [University of New York](#) and [University of Michigan](#))

Research Methods

This study received an approval for exemption from the UCSC Institutional Review Board on April 28, 2026 (HS-FY2026-174).

We used a participatory co-design approach to make the work as student-centered as possible and to develop recommendations generated by the students themselves. Participatory approaches can take a variety of forms, but common characteristics include centering student voices and including them in the process, creating authentic connections with students, validating and honoring students' experiences, and engaging in perspective-taking" (Strange, 2022; Hudson-Ward, 2022; Cohen, 2022).

Co-design is a collaborative approach involving the participation and collaboration of those who are most impacted by the decisions being made in multiple phases of a research project. Many traditional user-centered and participatory approaches invite impacted communities to participate in the research phase of a project; researchers talk to these communities to learn more about their needs, but then researchers may exclude these communities from the design phase of the work. Co-design recognizes that including impacted communities in the design process leads to outcomes that may better meet the needs and use cases of those communities. Co-design provides agency to stakeholders by developing solutions that they design themselves, providing an avenue for meaningful contribution to the decision making process.

Focus Groups

We identified students supported by the Disability Resource Center (DRC), Educational Opportunity Programs (EOP), and Veterans Center as key stakeholders in this study. The literature suggests that students with disabilities (particularly ASD and/or ADHD), low-income and first-generation students, and veteran students may experience sensory sensitivities at rates higher than the general population. Neurodivergent students with ASD and/or ADHD may have more sensitivity needs (Lane et al., 2010; Clinice et al., 2016) and the Disability Resource Center supports neurodivergent students. First-generation and low-income students experience increased rates of poor quality sleep relative to their peers (Rocha et al., 2025). Poor quality sleep is associated with increased rates of sensory sensitivity and feelings of "sensory overload" (Bellemare et al., 2025; Fernández-Pires, 2021). The Educational Opportunity Programs support both first-generation and low-income students. Sensory sensitivities are commonly comorbid with PTSD and mTBI, which veterans are at higher risk of experiencing than the general population (Callahan & Storzbach, 2019), making veteran students another stakeholder community.

We worked with EOP to successfully recruit a large number of EOP supported students. We worked with the DRC and successfully recruited some DRC supported students. Unfortunately, we were unable to partner with the Veterans Center; although we attempted to independently recruit veteran students, we were unable to recruit students from this community.

During co-design sessions, we engaged students in a series of activities, tailored to first encourage students to speak openly about sensory-related experiences in library spaces, then to brainstorm changes that might improve those experiences, and finally to prioritize those improvements. Students were given a \$30 gift card as incentive to participate. We made the

space welcoming by providing snacks that included vegetarian, dairy free, and gluten free options to accommodate a range of dietary needs and preferences.

We started the co-design sessions by encouraging students to engage in “storytelling” (eg. discussions of their experiences) that involved their sensory experiences in library spaces. We gave students eight sensory related words and asked students to write about past experiences in the library related to one or more of those words. The words were: Lights, Temperature, Distractions, Feeling (Physical & Emotional), Sensory, Sounds, Safety, and Stress. We wanted students to share their honest experiences in the library and didn’t restrict them to just sharing positive experiences. After sharing their experiences, students brainstormed around how those experiences could have been improved or might be prevented or improved in the future. Finally, students worked together to vote on their top three solutions from the brainstormed ideas.

We recorded the focus group sessions and created anonymized transcriptions from these recordings. We also collected students’ handwritten notes from each session. These transcripts and notes were analyzed to collect reflections and quotes that illustrate the experiences students described during the sessions.

Survey

Many of the improvements ideated during the co-design sessions require library resources, staff time or budgetary, in order to implement. In order to ensure we deploy these resources in the most impactful way, we created a survey to get broader student input on these improvements.

The survey asked students to rate on a likert scale from “not at all likely” to “very likely” their likelihood of using one of the identified tools or services. We tabled in McHenry library in a central location and asked students to fill out the brief survey with the incentive of a free snack. In one tabling session we received 61 responses and students were excited to hear about these potential changes in the library.

Funding

The incentives for this study, including the gift cards awarded to focus group participants, snacks served at the focus group sessions, and the snacks served at the survey tabling session, were funded through a grant awarded by the Librarians Association of the University of California (LAUC).

Results

We successfully recruited 11 students to participate in our focus groups. All students self-identified as being supported by the Disability Resource Center, Educational Opportunity Programs, or both. Ideas generated by students as solutions to sensory challenges they had faced in library spaces were largely smaller scale and actionable with moderate resources.

Our survey received 61 responses that affirmed most of the ideas generated in the focus groups with greater than 50% of respondents indicating they would be “very likely” to use 4 out of the 11 ideas for equipment or supplies.

Our recommendations below are based on both the solutions generated in the focus groups and the results from the subsequent survey.

Recommendations

While many libraries are adopting an approach of creating a single or small number of optimized sensory spaces (eg. a sensory-friendly room), students in our focus groups suggested a different strategy to improve the sensory-friendliness of our library spaces. Rather than a single, optimal sensory space, students preferred a two pronged approach: moderately improving a larger number of spaces coupled with providing students with the information and equipment they need to select and curate spaces that meet their sensory needs. Students feared that in our environment, where study rooms are incredibly high in demand at most points throughout the year, a single sensory-friendly space would be consistently booked and, therefore, unavailable for the majority of students. As one student stated, “...if we only do it for one room, then everyone wants to go to that room.” Our recommended approach aims to improve sensory experiences for a large number of students rather than create a single optimized sensory environment for a small number of students.

Our recommendations were ideated by the students in our focus groups based on their sensory experiences and those shared by others within the session. These recommendations fall into five categories: communication, facilities, policies, the online room booking experience, and equipment or supplies. While the majority of ideas focus on improving sensory experiences, several non-sensory related ideas surfaced as well.

Communication

Offer a Detailed Directory of Our Spaces

Students who used the library regularly still had little awareness of the variety of spaces available. For example, many students were unaware that the libraries already offered silent and quiet study areas (“Does this library have designated quiet spaces?” asked one participant).

Both the library website and signage within the building should offer a more detailed directory of our spaces to help students find optimal study space to meet their needs.

Provide a Reporting Form for Study Room Issues

Students suggested the library offer an easy way to report issues with study rooms. Students experienced a number of issues with study rooms, such as broken outlets, dirty tables, or broken equipment, but didn't want to stop by the desk to report these issues.

Students recommended having a QR code in each study room that would connect to a reporting form.

Facilities

Ensure Outlets are Functional

Students reported finding broken outlets regularly. In the words of one participant, "It's really hard to find outlets that work in the S&E library."

The library should regularly test outlets to ensure they are functioning properly.

Provide Cleaning Supplies

Students reported experiencing dirty or sticky tables in study rooms and, to a lesser extent, in shared spaces. Students liked the cleaning supplies the library provides in the Upper Level of the Science and Engineering Library and recommended these supplies be provided in all study rooms and in the shared spaces of McHenry Library as well.

"Sometimes if the desks are kind of dirty...it kind of bugs me because I'm in this box that I also don't perceive as being clean," reported one participant.

Improve Privacy in McHenry Ground Floor Study Rooms

Several students reported being very distracted while studying in the study rooms in the Digital Scholarship spaces due to the high foot traffic in the hallways visible through the clear glass doors. "The doors are see-through. So then when people walk by they see me in the room," one student stated.

Students suggested increasing privacy in these spaces, perhaps through shades on the glass windows or frosting the glass (even just part of the glass).

We asked about this concept in our survey and it proved quite popular there as well, with 26 students reporting they would be very likely to use this and an additional 23 reporting they would be somewhat likely to use this.

Allow Students to Control Lighting in Study Rooms

Multiple focus group participants reported disliking the bright overhead lighting ubiquitous in the libraries and in every study room, instead preferring natural light (through windows) or warmer temperature lighting.

In rooms with adequate natural lighting and/or alternative lighting options (like lamps), it would be preferable to allow students to turn off the overhead lights.

Policies

Create and Communicate Expected Noise Levels

A theme that emerged in our 2023 focus groups and persisted in these 2026 focus groups was the discomfort students feel around appropriate noise levels. When people using a shared space have different ideas around acceptable use, this can cause frustration, conflict, confusion, and feelings of uncertainty. Providing a structure around acceptable noise levels gives students the information they need to select the noise level that is right for them in their immediate context of use.

During one focus group conversation about where students might go to in the library to collaborate, one student suggested, “I think we have that in the basement, right?” to which another student responded, “No, the basement’s really, really quiet. And people have got mad at me for talking down in the basement.”

The [Shields Library](#) at UC Davis designates different library areas as Silent Study, Quiet Conversation, or Collaboration Zone. Our library should take a similar approach in designating the noise levels in our shared areas.

Room Booking Website

Improve Mobile-friendliness of Booking Website

The LibCal room browsing interface does not work well on mobile devices. The room numbers are not visible in the narrow column and as the user scrolls down the list, the header row displaying the time blocks disappears.

One option to improve this experience would be to direct mobile users to LibCal’s room search interface (rather than browse). The search interface has been built mobile-first and delivers a better mobile experience, but is for searching rather than browsing for study rooms.

Allowing mobile users who prefer to browse (even though the interface is less mobile friendly) to quickly switch between browse and search options would be imperative. We should consider adopting an approach similar to [UPenn Library](#) for allowing users to switch from Search to Browse.

Include Sensory-related Aspects in Space Descriptions

We should include sensory information (eg. lighting, noise level, typical foot traffic etc.) in our descriptions of library spaces. This information will help students make informed decisions when selecting library study spaces.

Include Information About Equipment Status

Several participants shared past experiences wherein they had booked study rooms with equipment only to find that the equipment was not functioning properly. In some cases there was a physical sign in the space noting the equipment was out of service; however, the online description did not reflect this equipment status. As one participant stated, “If a person needs to use that tech...and then some of them, like the HDMI cord or the audio cord has stopped working, you've booked a room that you can't really use.”

When we place a physical out of service sign within a room, we should include the equivalent notification on the booking website.

Equipment and Supplies

The survey listed 11 equipment or supplies for which students indicated how likely they would be to use each one. Of these 11 items, the 5 students indicated they were most likely to use were: power strips, alternative seating, dimmable lamps, fans, and adjustable desks. 61 students completed the survey.

Power Strips

59% very likely, 28% somewhat likely

The desire for power strips stems from the number of non-functional outlets and the challenge in finding available outlets when the library is busy.

“My friends and I will sit there and then our computers are dying and we can't charge them. So we have to move to a different one. And it's kind of hard to find one because there's a lot of people already there,” reflected a participant.

Alternative Seating (eg. wobble stools or yoga ball chairs)

54% very likely, 23% somewhat likely

Students mentioned that variety in seating helped them remain comfortable when studying in the library for prolonged periods.

As one participant stated, “This is really random, but I know a lot of elementary school classes, they have different seating types that can help some people. So like, yoga balls. Or stools, just like, maybe a variety of options.”

Dimmable Lamps in Study Rooms

51% very likely, 36% somewhat likely

Sensitivities to bright, overhead, cool temperature lighting was mentioned in all three focus groups. Offering dimmable lamps with warm color temperature bulbs in study rooms would give students more options and allow them to select the lighting that works best for them.

“Something about the bright white lights make it not as warm of an environment and that makes me want to stay here less when I’m studying,” said one participant.

“Having more adjustable lighting in the room. You can make it bright if you want to,” suggested another.

Fans in Study Rooms

51% very likely, 31% somewhat likely

Several students mentioned how stuffy or hot study rooms can become, which makes the rooms less comfortable and more challenging to stay in for prolonged periods.

“Because [the study rooms] can get a little bit stuffy, especially with the door closed,” reflected a participant.

Sit/Stand Adjustable Desk

48% very likely, 33% somewhat likely

Several students mentioned that their height made default desk/table heights uncomfortable and others mentioned desiring a variety of desk/table options.

“Oh my gosh, this is huge. Adjustable tables. A room with adjustable tables. Yeah, that's super, super important,” one participant said.

Conclusion

Library spaces are incredibly valuable to students and they expressed appreciation of these spaces. However, some students continue to have negative sensory experiences that limit their use of library spaces. Using methods that centered student voices and ideas, this study identified changes the library can make to improve sensory experiences for our students.

The consensus around sensory-friendly space characteristics seen in the literature (low noise, adjustable light and temperature, multiple options for sitting or standing) mirror the improvements suggested by our students (eg. clear establishment of quiet spaces, dimmable lamps, fans, wobble or yoga ball chairs, sit/stand desks). The experiences students discussed in this research project expanded on the sensory-related issues surfaced during our 2024

research. This research, our previous research, and the literature all share themes, suggesting that we have successfully uncovered the most common and pressing sensory issues.

Issues unrelated to sensory experiences also emerged in this focus group. Issues around access to power (both the functionality of existing outlets and the desire for power strips) came up in two out of three focus groups during this study and in all of the focus groups during the previous study. Issues with the booking system were also mentioned during both this research and our previous work.

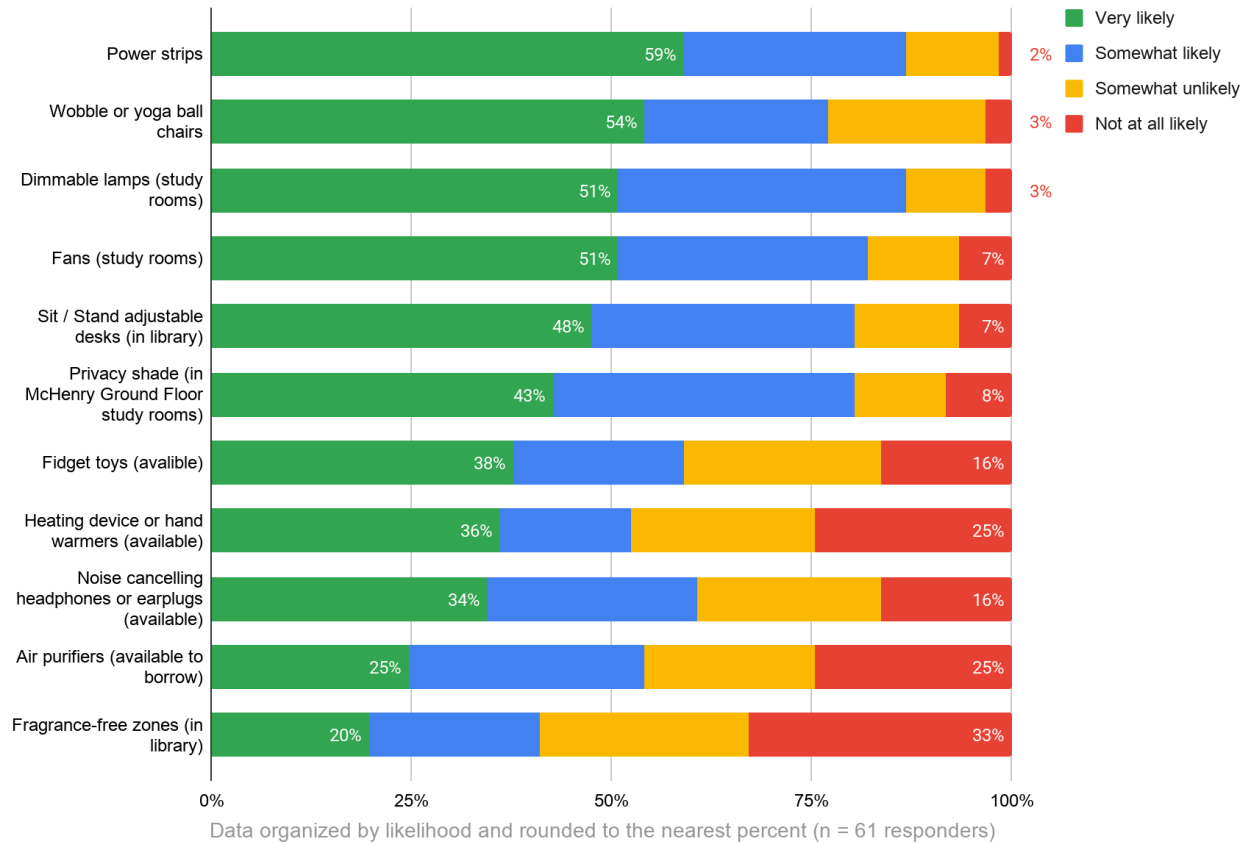
Our co-design approach to this work centered student voices and validated their lived experiences. Inviting students to participate in the design and ideation process empowers student stakeholders to affect real change on their campus and ensures that the ideated solutions best meet real student needs. We plan to continue employing co-design approaches to our spaces work.

This report has presented student-ideated recommendations to address both these sensory needs and other unrelated, but ubiquitous, space related needs. Moving forward with these recommendations will make substantive improvements to student space experiences.

Appendix

Survey Results

Likelihood of students using one of the identified tools or services



References & Bibliography:

- Bellemare, S., López-Arango, G., Deguire, F., Knoth, I. S., & Lippé, S. (2025). The Impact of Sleep on Sensory Processing in Typically Developing Children: Insights from Cross-Sectional and Longitudinal Data. *Children*, 12(2), 153.
<https://doi.org/10.3390/children12020153>
- Boyer, A., & El-Chidiac, A. (2023). Come Chill Out at the Library: Creating Soothing Spaces for Neurodiverse Students. *Journal of New Librarianship*, 8(1), 41–47.
<https://doi.org/10.33011/newlibs/13/5>
- Callahan, M. L., & Storzbach, D. (2019). Sensory sensitivity and posttraumatic stress disorder in blast exposed veterans with mild traumatic brain injury. *Applied neuropsychology. Adult*, 26(4), 365–373.
<https://doi.org/10.1080/23279095.2018.1433179>
- Cater, K. (2016). Small shifts, big changes: Changing the story for students with Sensory Processing Sensitivity (SPS). *International Journal for Transformative Research*, 3(2), 24–31. <https://doi.org/10.1515/ijtr-2016-0010>
- Chalifoux, A. (2023, October 25). *UC Clermont celebrates new cutting-edge spaces: Sensory room first of its kind in nation half-million-dollar updates funded mostly by donors*. University of Cincinnati.
<https://www.uc.edu/news/articles/2023/10/uc-clermont-celebrates-new-cutting-edge-spaces--sensory-room-first-of-its-kind-in-nation.html>
- Clince, M., Connolly, L., & Nolan, C. (2016). Comparing and Exploring the Sensory Processing Patterns of Higher Education Students With Attention Deficit Hyperactivity Disorder and Autism Spectrum Disorder. *The American Journal of Occupational Therapy*, 70(2), 7002250010p1-7002250010p9.
<https://doi.org/10.5014/ajot.2016.016816>

Cohen. (2022). *Belonging : the science of creating connection and bridging divides* (First edition.). W.W. Norton & Company.

Cornell University Library. (n.d.). *Sensory Study Room*. Cornell University.

<https://spaces.library.cornell.edu/space/176569>

Dittbrenner, H. (2023, March 9). *Blough-Weis library creates spaces for neurodiverse students*. Susquehanna University.

<https://www.susqu.edu/live/news/1570-blough-weis-library-creates-spaces-for>

Fernández-Pires, P., Valera-Gran, D., Hurtado-Pomares, M., Espinosa-Sempere, C., Sánchez-Pérez, A., Juárez-Leal, I., Ruiz-Carbonell, M.-P., Peral-Gómez, P., Campos-Sánchez, I., Pérez-Vázquez, M.-T., & Navarrete-Muñoz, E.-M. (2021). Sleep Duration and Quality and Sensory Reactivity in School-Aged Children: The Spanish Cross-Sectional InProS Study. *Frontiers in Pediatrics*, 9, 646011.

<https://doi.org/10.3389/fped.2021.646011>

Hegde, A. (2015). Sensory Sensitivity and the Built Environment. *Lighting Design + Application*, 45(1), 56–60. <https://doi.org/10.1177/036063251504500116>

Hudson-Ward, Alexia. (Editor-in-chief). (2022, October 14). Crystal McCormick Ware on the Impact of Belonging on Campus [Audio podcast episode]. In *Toward Inclusive Excellence*. Choice.

<https://www.choice360.org/podcasts/tie-podcast-fall-semester-crystal-mccormick-ware-on-the-impact-of-belonging-on-campus/>

Icole5. (2024, September 18). *Check out the new sensory friendly study space in TLB!*. UW Tacoma Library.

<https://sites.uw.edu/uwtacomalibrary/2024/09/18/check-out-the-sensory-friendly-study-space-in-tlb/>

Kannan, H., & Kehoe, L. (2024). *Building Equitable User Research Methodologies: Lessons and Guidance from the Installation of a Sensory Space*.

- Kirk, V. (2025). *A sensory-friendly learning environment through design: User experience and implementation*. <https://urn.fi/URN:NBN:fi:amk-202502052351>
- Lane, S. J. (2010). Sensory over-responsivity and ADHD: Differentiating using electrodermal responses, cortisol, and anxiety. *Frontiers in Integrative Neuroscience*, 4. <https://doi.org/10.3389/fnint.2010.00008>
- Lee, J. H., Hwang, C., Huh, J., & Kim, J. (2025). Development of sensory-friendly inclusive design based on sensory integration theory. *The Design Journal*, 1–19. <https://doi.org/10.1080/14606925.2025.2461927>
- Mac, A., Kim, M.-K., & Sevak, R. J. (2024). A review of the impact of sensory processing sensitivity on mental health in university students. *Mental Health Clinician*, 14(4), 247–252. <https://doi.org/10.9740/mhc.2024.08.247>
- Michigan State University Library. (n.d.). *Sensory spaces & kits*. Michigan State University. <https://libguides.lib.msu.edu/c.php?g=1450183&p=10778754>
- Montana State University Library. (n.d.). *Sensory Spaces*. Montana State University. <https://www.lib.montana.edu/spaces/sensory.html>
- Montclair State University Library. (2024, September 13). *The sensory space for enhanced comfort*. Montclair State University. <https://www.montclair.edu/library/2024/09/13/the-sensory-space-for-enhanced-comfort/>
- New York University Library. (n.d.). *Bobst Sensory Spaces*. New York University. <https://library.nyu.edu/spaces/sensory-spaces/>
- Nolan, C., Doyle, J. K., Lewis, K., & Treanor, D. (2023). Disabled Students' perception of the sensory aspects of the learning and social environments within one Higher Education Institution. *British Journal of Occupational Therapy*, 86(5), 367–375. <https://doi.org/10.1177/03080226221126895>
- Penn State University Library. (2023, October 27). *Libraries piloting sensory rooms as supportive spaces for neurodiverse students*. Penn State University.

<https://www.psu.edu/news/university-libraries/story/libraries-piloting-sensory-rooms-supportive-spaces-neurodiverse-students>

Rocha, S., Smola, X. A., Trimble, A., Mc Donnell, L., Enders, C. K., & Fuligni, A. J. (2025).

College students' socioeconomic background and sleep during the first year of college.

Sleep Health, 11(5), 647–654. <https://doi.org/10.1016/j.sleh.2025.06.002>

Strange, C. (2000). Creating Environments of Ability. *New Directions for Student Services*,

2000(91), 19–30. <https://doi.org/10.1002/ss.9102>

University of California, Santa Cruz. (n.d.). *DRC Data*. Disability Resource Center.

<https://drc.ucsc.edu/about/data/>